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

FORM 10-Q

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

For the quarterly period ended June 30, 2015

OR

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

For the transition period from _____ to _____

001-36548
(Commission file number)

ATARA BIOTHERAPEUTICS, INC.
(Exact name of registrant as specified in its charter)

Delaware	**46-0920988**
(State of incorporation)	**(I.R.S. Employer Identification No.)**
701 Gateway Blvd., Suite 200 **South San Francisco, CA**	**94080**
(Address of principal executive offices)	**(Zip code)**

(650) 278-8930
(Registrant's telephone number, including area code)

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 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 or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

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

(Do not check if a smaller reporting company)

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 the registrant's Common Stock outstanding as of July 31, 2015 was 28,512,957 shares.

ATARA BIOTHERAPEUTICS, INC.

INDEX

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

	June 30, 2015	December 31, 2014
Assets		
Current assets:		
Cash and cash equivalents	$ 26,190	$ 21,897
Short-term available-for-sale investments	128,841	82,219
Prepaid expenses and other current assets	5,603	1,910
Total current assets	160,634	106,026
Property and equipment, net	42	48
Other assets	426	48
Total assets	$ 161,102	$ 106,122
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 1,703	$ 440
Accrued compensation	924	1,225
Income tax payable	1	1
License fee payable to Memorial Sloan Kettering Cancer Center ("MSK")	4,500	—
Other accrued liabilities	4,516	1,058
Total current liabilities	11,644	2,724
Other long-term liabilities	203	216
Total liabilities	11,847	2,940
Commitments and contingencies (Note 5)		
Stockholders' equity:		
Preferred stock—$0.0001 par value, 20,000,000 shares authorized; none issued and outstanding as of June 30, 2015 and December 31, 2014	—	—
Common stock—$0.0001 par value, 500,000,000 shares authorized; 24,151,734 and 19,692,937 shares issued and outstanding as of June 30, 2015 and December 31, 2014, respectively	2	2
Additional paid-in capital	214,313	144,169
Accumulated other comprehensive loss	(66)	(100)
Accumulated deficit	(64,994)	(40,889)
Total stockholders' equity	149,255	103,182
Total liabilities and stockholders' equity	$ 161,102	$ 106,122

See accompanying notes.

ATARA BIOTHERAPEUTICS, INC.
Condensed Consolidated and Combined Statements of Operations and Comprehensive Loss
(Unaudited)
(In thousands, except per share amounts)

	Three months ended June 30,		Six months ended June 30,	
	2015	2014	2015	2014
Expenses:				
Research and development	$ 7,007	$ 2,110	$ 12,774	$ 5,091
Research and development costs paid to Amgen	—	1,066	—	1,066
In-process research and development license acquired from MSK	4,500	—	4,500	—
General and administrative	3,601	1,358	7,145	5,454
Total operating expenses	15,108	4,534	24,419	11,611
Loss from operations	(15,108)	(4,534)	(24,419)	(11,611)
Interest and other income	163	23	316	29
Loss before provision for income taxes	(14,945)	(4,511)	(24,103)	(11,582)
Provision (benefit) for income taxes	—	—	2	(22)
Net loss	$ (14,945)	$ (4,511)	$ (24,105)	$ (11,560)
Other comprehensive gain (loss), net of tax:				
Unrealized gains (losses) on investments	(48)	11	34	—
Other comprehensive gain (loss)	(48)	11	34	—
Comprehensive loss	$ (14,993)	$ (4,500)	$ (24,071)	$ (11,560)
Net loss per common share:				
Basic and diluted net loss per common share	$ (0.62)	$ (3.37)	$ (1.04)	$ (8.89)
Weighted-average common shares outstanding used to calculate basic and diluted net loss per common share	24,224	1,337	23,079	1,300

See accompanying notes.

ATARA BIOTHERAPEUTICS, INC.
Condensed Consolidated and Combined Statements of Cash Flows
(Unaudited)
(In thousands)

	Six months ended June 30,	
	2015	**2014**
Operating activities		
Net loss	$ (24,105)	$ (11,560)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation expense	11	2
Amortization of investment premiums and discounts	880	138
Stock-based compensation expense	5,053	3,844
Interest accrued on notes receivable from stockholder	—	(2)
Changes in operating assets and liabilities:		
Other assets	(24)	1
Prepaid expenses and other current assets	(3,314)	(264)
Accounts payable	1,162	(29)
Income tax payable	—	(92)
Other accrued liabilities	3,247	355
License fee payable to MSK	4,500	—
Accrued compensation	(301)	28
Other long-term liabilities	27	—
Net cash used in operating activities	(12,864)	(7,579)
Investing activities		
Purchase of short-term investments	(111,325)	(24,987)
Maturities of short-term investments	63,510	—
Purchase of property and equipment	(5)	(5)
Net cash used in investing activities	(47,820)	(24,992)
Financing activities		
Proceeds from sale of common stock, net of offering costs	69,487	—
Taxes paid related to net share settlement of restricted stock units	(4,468)	—
Repayment of notes receivable from stockholder	—	337
Proceeds from sale of convertible preferred stock	—	13,500
Offering costs incurred in connection with sale of convertible preferred stock	—	(19)
Offering costs incurred in anticipation of public filing	(42)	(1,083)
Net cash provided by financing activities	64,977	12,735
Increase (decrease) in cash and cash equivalents	4,293	(19,836)
Cash and cash equivalents-beginning of period	21,897	51,615
Cash and cash equivalents-end of period	$ 26,190	$ 31,779
Non-cash financing activities		
Issuance of common stock upon vesting of stock awards	$ 40	$ 45
Change in other long-term liabilities related to non-vested stock awards	$ (40)	$ (45)
Proceeds receivable from option exercises	$ 32	$ —
Offering costs in anticipation of public filing included in other accrued liabilities and accounts payable	$ 312	$ 313
Supplemental cash flow disclosure—Cash paid for income taxes	$ 2	$ 70

See accompanying notes.

1. Organization and Description of Business

Atara Biotherapeutics, Inc. ("Atara", "we" or "our") was incorporated in August 2012 in Delaware. We are a clinical-stage biopharmaceutical company focused on developing novel therapeutics for serious unmet medical needs, with an initial focus on muscle wasting conditions, oncology and viral-associated diseases. We have two groups of product candidates: molecularly targeted biologics and allogeneic, or third-party derived, antigen-specific T-cells, a type of white blood cell. Our product candidate portfolio was acquired through licensing arrangements with Amgen Inc. ("Amgen") and Memorial Sloan Kettering Cancer Center ("MSK") in exchange for convertible preferred stock, common stock, milestone payments and commitments for future royalties. See Note 4 for further information.

In February 2015, we completed a follow-on offering of 4,147,358 shares of common stock at an offering price to the public of $18.00 per share. We received net proceeds of approximately $69.5 million, after deducting underwriting discounts and commissions and offering expenses.

In July 2015, we completed a follow-on offering of 3,980,768 shares of common stock at an offering price to the public of $52.00 per share. We received net proceeds of approximately $193.9 million, after deducting underwriting discounts and commissions and offering expenses.

2. Summary of Significant Accounting Policies

Basis of Presentation and Recapitalization

The accompanying interim condensed consolidated and combined financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") and the rules and regulations of the Securities and Exchange Commission (the "SEC"). The accounting policies followed in the preparation of the interim condensed consolidated and combined financial statements are consistent in all material respects with those presented in Note 2 to the consolidated and combined financial statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2014.

Atara was originally formed as a management company with the sole purpose of providing management, financial and administrative services for Nina Biotherapeutics, Inc. ("Nina"), Santa Maria Biotherapeutics, Inc. ("Santa Maria") and Pinta Biotherapeutics, Inc. ("Pinta"). Prior to March 31, 2014, the accompanying financial statements include the operations of Atara, Nina, Pinta and Santa Maria on a combined basis as the four individual companies were under common ownership and common management since inception. All intercompany transactions have been eliminated.

On March 31, 2014, our board of directors approved and we implemented a recapitalization (the "Recapitalization") in which (a) all the outstanding shares of common stock of Atara were cancelled and forfeited by existing stockholders and (b) the stockholders of Nina, Pinta and Santa Maria exchanged their existing common and convertible preferred stock for newly-issued shares of Atara, with the same rights and privileges as the outstanding capital stock of Nina, Pinta and Santa Maria. The shares were exchanged on a collective nine-for-one basis. The Recapitalization lacked economic substance as the newly-issued shares have the same rights and privileges as the previously outstanding capital stock of Nina, Pinta and Santa Maria and there was no change in ownership percentages of the individual stockholders. As a result of the Recapitalization, Nina, Pinta and Santa Maria became wholly owned subsidiaries of Atara effective March 31, 2014. The Recapitalization is considered a tax-free exchange for US federal income tax purposes.

Because the four individual companies were under common ownership and the Recapitalization lacked economic substance, we accounted for the Recapitalization as a combination of businesses under common control. The assets and liabilities of Nina, Pinta and Santa Maria were recorded by Atara at their historical carrying amounts on March 31, 2014 and beginning March 31, 2014, the financial statements of the Company are presented on a consolidated basis.

Liquidity

We have incurred significant operating losses since inception and have relied on public and private equity financings to fund our operations. At June 30, 2015, we had an accumulated deficit of $65.0 million. As we continue to incur losses, our transition to profitability will depend on the successful development, approval and commercialization of product candidates and on the achievement of sufficient revenues to support our cost structure. We may never achieve profitability, and unless and until we do, we will need to continue to raise additional capital. Management expects that existing cash and cash equivalents as of June 30, 2015 will be sufficient to fund our current operating plan for at least the next twelve months.

Net Loss per Common Share

Basic and diluted net loss per common share is presented, giving effect to the Recapitalization, including cancellation of existing Atara common stock and a nine-for-one share exchange. Basic net loss per common share is calculated by dividing the net loss by the weighted-average number of shares of common stock outstanding during the period, without consideration of common stock equivalents. Diluted net loss per common share is computed by dividing the net loss by the weighted-average number of shares of common stock and common share equivalents outstanding for the period. Common share equivalents are only included in the calculation of diluted net loss per common share when their effect is dilutive. Our restricted stock awards are considered to be participating securities as they are entitled to participate in undistributed earnings with shares of common stock. Due to net losses, there is no impact on the net loss per common share calculation in applying the two-class method since the participating securities have no legal requirement to share in any losses.

Potentially dilutive securities, which include convertible preferred stock, unvested restricted common stock awards, unvested restricted stock units and vested and unvested options have been excluded from the computation of diluted net loss per share as the effect would be to reduce the net loss per common share and be antidilutive. Therefore, the denominator used to calculate both basic and diluted net loss per common share is the same in all periods presented.

The following shares of potentially dilutive securities give effect to the Recapitalization, and have been excluded from the computations of diluted net loss per common share as the effect of including such securities would be antidilutive:

	Three months ended June 30,		Six months ended June 30,	
	2015	2014	2015	2014
Convertible preferred stock	—	12,298,535	—	12,223,577
Unvested restricted common stock	416,207	702,752	451,913	738,276
Unvested restricted stock units	564,821	—	599,162	—
Vested and unvested options	470,094	—	287,346	—
	1,451,122	13,001,287	1,338,421	12,961,853

In addition, 123,433 and 676,158 options have been excluded from the above table for the three and six months ended June 30, 2015, respectively, as the exercise prices of the underlying options were greater than the average fair value of our common stock for the periods presented.

Recent Accounting Pronouncements

In April 2015, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2015-03, *Interest- Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs*, that simplifies the presentation of debt issuance costs by requiring that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the carrying amount of that debt liability, consistent with debt discounts. The ASU does not affect the recognition and measurement guidance for debt issuance costs. The ASU will be effective for financial statements issued for fiscal years beginning after December 15, 2015, and early application is permitted. The adoption of this standard is not expected to have a material impact on our financial statements.

In April 2015, the FASB issued ASU No. 2015-05, "*Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): Customer's Accounting for Fees Paid in a Cloud Computing Arrangement"*, that provides guidance to customers about whether a cloud computing arrangement includes a software license. If such an arrangement includes a software license, then the customer should account for the software license element of the arrangement consistent with the acquisition of other software licenses. If the arrangement does not include a software license, the customer should account for it as a service contract. This ASU will be effective for annual periods beginning after December 15, 2015, and early application is permitted. The adoption of this standard is not expected to have a material impact on our financial statements

In August 2014, the FASB issued a new accounting standard to provide guidance on the presentation of management's plans, when conditions or events raise substantial doubt about the entity's ability to continue as a going concern within one year after the date that the financial statements are issued. The new standard is effective for fiscal years ending after December 15, 2016. The adoption of this standard is not expected to have a material impact on our financial statements.

In May 2014, the FASB issued a new accounting standard, *Revenue from Contracts with Customers (Topic 606),* which supersedes the revenue recognition requirements in the current standard, *Revenue Recognition*. The new standard is based on the principle that revenue is recognized to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. It also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. In July 2015, the FASB deferred the effective date of this standard by one year and the new standard is effective for fiscal years beginning after December 15, 2017. We will evaluate the application of this standard on our financial statements and disclosures when we enter into any contracts with customers.

3. Fair Value of Financial Instruments

Our financial assets and liabilities carried at fair value are primarily comprised of investments in money market funds, corporate bonds, U.S. government securities, asset-backed securities and commercial paper. The fair value accounting guidance requires that assets and liabilities be carried at fair value and classified in one of the following three categories:

Level 1: Quoted prices in active markets for identical assets or liabilities that we have the ability to access

Level 2: Observable market based inputs or unobservable inputs that are corroborated by market data such as quoted prices, interest rates and yield curves

Level 3: Inputs that are unobservable data points that are not corroborated by market data

We review the fair value hierarchy classification on a quarterly basis. Changes in the ability to observe valuation inputs may result in a reclassification of levels of certain securities within the fair value hierarchy. We recognize transfers into and out of levels within the fair value hierarchy in the period in which the actual event or change in circumstances that caused the transfer occurs. There were no transfers between Level 1, Level 2, and Level 3 for all periods presented.

The following table represents the fair value hierarchy for our financial assets and financial liabilities measured at fair value on a recurring basis:

	Total Fair Value	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)
		(in thousands)	
At June 30, 2015:			
Cash equivalents:			
Money market funds	$ 25,880	$ 25,880	$ —
Agency bonds	185	—	185
Corporate bonds	96	—	96
Total cash equivalents	$ 26,161	$ 25,880	$ 281
Short-term available-for-sale investments:			
Corporate bonds	$ 98,245	$ —	$ 98,245
Agency bonds	17,513	—	17,513
Asset-backed securities	13,083	—	13,083
Total short-term available-for-sale investments	$ 128,841	$ —	$ 128,841
At December 31, 2014:			
Cash equivalents:			
Money market funds	$ 18,141	$ 18,141	$ —
Agency bonds	1,750	—	1,750
Corporate bonds	2,006	—	2,006
Total cash equivalents	$ 21,897	$ 18,141	$ 3,756
Short-term available-for-sale investments:			
Corporate bonds	$ 57,958	$ —	$ 57,958
Agency bonds	10,764	—	10,764
Treasury bonds	465	—	465
Commercial paper	1,200	—	1,200
Asset-backed securities	11,832	—	11,832
Total short-term available-for-sale investments	$ 82,219	$ —	$ 82,219

Financial assets and liabilities are considered Level 2 when their fair values are determined using inputs that are observable in the market or can be derived principally from or corroborated by observable market data such as pricing for similar securities, recently executed transactions, cash flow models with yield curves, and benchmark securities. In addition, Level 2 financial instruments are valued using comparisons to like-kind financial instruments and models that use readily observable market data as their basis. Corporate bonds, U.S. government securities, asset-backed securities and commercial paper are valued primarily using market prices of comparable securities, bid/ask quotes, interest rate yields and prepayment spreads and are included in Level 2.

Financial assets and liabilities are considered Level 3 when their fair values are determined using pricing models, discounted cash flow methodologies, or similar techniques, and at least one significant model assumption or input is unobservable. We have no Level 3 financial assets and liabilities.

Short-term available-for-sale investments are carried at fair value and are included in the tables above under short-term investments. The aggregate market value, cost basis, and gross unrealized gains and losses of short-term available-for-sale investments by major security type are as follows:

	Total Amortized Cost	Total Unrealized Gain	Total Unrealized Loss	Total Fair Value
	(in thousands)			
At June 30, 2015:				
Corporate bonds	$ 98,321	$ 6	$ (82)	$ 98,245
Agency bonds	17,507	9	(3)	17,513
Asset-backed securities	13,079	6	(2)	13,083
Total short-term available-for-sale investments	$ 128,907	$ 21	$ (87)	$ 128,841
At December 31, 2014:				
Corporate bonds	$ 58,046	$ 1	$ (89)	$ 57,958
Agency bonds	10,769	—	(5)	10,764
Treasury bonds	466	—	(1)	465
Commercial paper	1,200	—	—	1,200
Asset-backed securities	11,838	2	(8)	11,832
Total short-term available-for-sale investments	$ 82,319	$ 3	$ (103)	$ 82,219

The amortized cost and fair value of short-term available-for-sale investments, by contractual maturity, were as follows:

	Total Amortized Cost	Total Fair Value
	(in thousands)	
At June 30, 2015:		
Maturing within one year	$ 86,980	$ 86,926
Maturing in one to five years	41,927	41,915
Total short-term available-for-sale investments	$ 128,907	$ 128,841
At December 31, 2014:		
Maturing within one year	$ 56,752	$ 56,714
Maturing in one to five years	25,567	25,505
Total short-term available-for-sale investments	$ 82,319	$ 82,219

4. Significant Agreements

Amgen License Agreements - In September 2012, we entered into three license agreements with Amgen, one of our investors, for the development, manufacturing, use and distribution of products using certain proprietary compounds. Under the terms of these agreements, we paid $250,000 and issued 5,538,462 shares of Series A-1 convertible preferred stock (615,384 shares after giving effect to the Recapitalization) to Amgen. We are obligated to make additional payments to Amgen of up to $86.0 million upon the achievement of certain development and regulatory approval milestones. Of these milestone payments, $14.0 million relate to milestones for clinical trials. The remaining $72.0 million relate to milestones for regulatory approvals in various territories and are anticipated to be made no earlier than 2017. Thereafter, we are obligated to make tiered payments based on achievement of commercial milestones based upon net sales levels. The maximum payments would be $206.0 million based on sales of over $1.0 billion for each of three products in a calendar year. We are also obligated to pay mid-single-digit percentage tiered royalties on future net sales of products which are developed and approved as defined by the agreements. Our royalty obligations as to a particular licensed product will be payable, on a country-by-country and product-by-product basis, until the later of (a) the date of expiration of the last to expire valid claim within the licensed patents that covers the manufacture, use or sale, offer to sell, or import of such licensed product by us or a sublicense in such country, (b) loss of regulatory exclusivity or (c) 10 years after the first commercial sale of the applicable licensed product in the applicable country. These agreements expire at the end of all royalty obligations to Amgen and, upon expiration, the licenses will be fully paid, royalty-free, irrevocable and non-exclusive. As of June 30, 2015 and December 31, 2014, there were no outstanding obligations due to Amgen.

At June 30, 2015, Amgen owns approximately 6.0% of our outstanding voting capital stock. Amgen does not have any rights to participate in our product candidates' development and is not represented on our board of directors.

MSK Agreements – In September 2014, we entered into an exclusive option agreement with MSK under which we had the right to acquire the exclusive worldwide license rights to the three clinical stage T-cell therapies of MSK. The initial option period was for twelve months, with extensions available to extend the term up to 27 months at the option of Atara. Under the terms of the option agreement, we were obligated to use reasonable efforts to prepare a request to be submitted to the US Food and Drug Administration (the "FDA") regarding a meeting to discuss pivotal trials for one of the clinical stage T-cell therapies. In exchange for the exclusive option, we paid MSK $1.25 million in cash and issued 59,761 shares of our common stock to MSK. At the time of issuance, we estimated the fair value of the common stock issued to MSK to be $750,000. This total of $2.0 million was recorded as research and development expense in our condensed consolidated and combined statement of operations and comprehensive loss in the third quarter of 2014.

In June 2015, we exercised our option and entered into an exclusive license agreement with MSK. In connection with the execution of the License Agreement, Atara is obligated to make an upfront cash payment to MSK of $4.5 million and this amount has been recorded as research and development expense in our condensed consolidated and combined statement of operations and comprehensive loss in the second quarter of 2015. Atara is obligated to make additional payments of up to $33.0 million to MSK based on achievement of specified development, regulatory and sales-related milestones, as well as escalating mid single-digit royalties based on future sales of products resulting from the development of the licensed product candidates. In addition, under certain circumstances, we must make certain minimum annual royalty payments to MSK, which are creditable against earned royalties owed for the same annual period. We are also obligated to pay a low double-digit percentage of consideration we receive for sublicensing the licensed rights. The license agreement expires on a product-by-product and country-by-country basis on the later of: (i) expiration of the last licensed patent rights related to each licensed product, (ii) expiration of any market exclusivity period granted by law with respect to each licensed product, and (iii) a specified number of years after the first commercial sale of the licensed product in each country. Upon expiration of the license agreement, Atara will retain non-exclusive rights to the licensed products.

Patent Obligations – Under the terms of our license agreements with Amgen and MSK, we pay costs related to the preparation, filing, prosecution, defense and maintenance of the patents covered by the license agreements. During the three months ended June 30, 2015 and 2014, we incurred expenses of $330,516 and $176,638, respectively, related to the preparation, filing and maintenance of patents. During the six months ended June 30, 2015 and 2014, patent costs were $839,434 and $394,710. These patent costs were recorded in the condensed consolidated and combined statement of operations and comprehensive loss as general and administrative expenses.

5. Commitments and Contingencies

Operating Leases

Rent expense for the three months ended June 30, 2015 and 2014 was $98,226 and $15,113, respectively. Rent expense for the six months ended June 30, 2015 and 2014 was $179,446 and $29,753, respectively.

Indemnification Agreements

In the normal course of business, we enter into contracts and agreements that contain a variety of representations and warranties and provide for indemnification for certain liabilities. The exposure under these agreements is unknown because it involves claims that may be made against us in the future but have not yet been made. To date, we have not paid any claims or been required to defend any action related to our indemnification obligations. However, we may record charges in the future as a result of these indemnification obligations. We also have indemnification obligations to our directors and executive officers for specified events or occurrences, subject to some limits, while they are serving at our request in such capacities. There have been no claims to date and we believe the fair value of these indemnification agreements is minimal. Accordingly, we have not recorded any liabilities for these agreements as of June 30, 2015 and December 31, 2014.

6. Stockholders' Equity

Restricted Common Stock

In August 2012, in connection with our formation, our CEO purchased 9,595,384 shares of restricted common stock at a nominal per share purchase price. The shares were issued subject to certain vesting conditions, restrictions on transfer and a Company right of repurchase of any unvested share at their original purchase price. These shares are placed in escrow until vested, and have rights to vote and participate in dividends and distributions. The combined grant date intrinsic value for this award was $1,704,094 and 7,996,153 of these shares had service and fundraising vesting conditions. Under the service vesting condition, shares vest monthly over 48 months, commencing from the first closing of Series A convertible preferred stock financing on October 22, 2012. 1,599,231 of these shares are subject to performance milestones and fundraising vesting conditions. The fundraising vesting conditions for all shares were satisfied as of December 31, 2013. All shares subject to service vesting conditions are subject to accelerated vesting in the event of certain change of control transactions.

In March 2013, an Atara employee purchased 2,423,074 shares of restricted common stock for $331,170. The shares were issued under our 2012 Equity Incentive Plan (as discussed below) and are subject to certain vesting conditions, restrictions on transfer and a Company right of repurchase of any unvested shares at their original purchase price. These shares are placed in escrow until vested, and have rights to vote and participate in dividends and distributions. Under these agreements, the shares vest as follows: 2,319,228 shares vest over four years, with one-quarter vesting after one year of service and the remainder vesting in equal installments over the subsequent thirty-six months, and 103,846 shares vest upon achievement of certain performance milestones. Vesting of all shares is subject to acceleration of vesting in the event of certain change of control transactions.

The amounts paid for both restricted stock purchases were initially recorded as other long-term liabilities. As shares vest, we reclassify liabilities to equity and report shares as outstanding in the condensed consolidated and combined financial statements. On March 31, 2014, the shares were exchanged for 1,335,384 shares of Atara common stock. At June 30, 2015, 958,702 shares had vested and are classified as equity. Restricted stock shares not vested at June 30, 2015 totaled 376,683 shares and are expected to vest over two years.

As both the Chief Executive Officer and the Atara employee were consultants of Nina, Pinta and Santa Maria through the Recapitalization date, we accounted for these awards as non-employee stock-based awards. Following the Recapitalization, these awards were accounted as employee awards based upon the fair market value of common stock on March 31, 2014. Stock-based compensation expense related to these awards is recorded using an accelerated graded vesting model and was $265,893 and $523,920 for the three months ended June 30, 2015 and 2014, respectively, and $589,119 and $3.8 million for the six months ended June 30, 2015 and 2014, respectively. The unrecognized stock-based compensation expense related to this unvested restricted stock was $594,642 at June 30, 2015 and this expense is expected to be recognized over a weighted-average period of 0.68 years. The aggregate intrinsic value of unvested restricted stock is $19.8 million at June 30, 2015.

2014 Equity Incentive Plans

In March 2014, we adopted the 2014 Equity Incentive Plan (the "2014 plan") as part of our Recapitalization. In connection with the Recapitalization, Atara assumed the plans of Nina, Pinta and Santa Maria and all outstanding restricted stock units ("RSUs") and restricted stock awards granted under such plans. At the date of Recapitalization, RSUs and restricted stock awards issued by Nina, Pinta and Santa Maria to Atara employees became employee awards and the awards' grant dates were established as the Recapitalization date. In May 2014, our board of directors amended and restated our 2014 plan and the amended plan became effective on October 15, 2014 upon the pricing of our initial public offering. The maximum number of shares of our common stock that may be issued pursuant to stock awards under the 2014 plan is 4,536,797 shares, including 1,294,041 shares that were previously available for issuance under the 2012 plans.

The number of shares of our common stock reserved for issuance pursuant to stock awards under our 2014 plan will automatically increase on January 1 of each year for a period of up to ten years, beginning on January 1, 2015 and ending on and including January 1, 2024, by 5% of the 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. The number of shares of our common stock available for issuance under the 2014 plan is 2,061,228 at June 30, 2015.

Under the terms of the 2014 plan, we may grant options, restricted stock awards and RSUs to employees, directors, consultants and other service providers. RSUs typically expire at the earlier of seven years from the date of grant or the service termination (or, for RSUs granted prior to February 2014, two years following the service termination date). Stock options are granted at prices no less than 100% of the estimated fair value of the shares on the date of grant as determined by the board of directors, provided, however, that the exercise price of an option granted to a 10% shareholder cannot be less than 110% of the estimated fair value of the shares on the date of grant. Options granted to employees and non-employees generally vest over four years and expire in seven years.

Restricted Stock Units and Awards

The RSUs granted prior to our initial public offering had a time-based service condition and a liquidity-based performance condition, and vest when both conditions are met. We determined that the liquidity-based performance condition was not probable of occurring and recorded no stock-based compensation expense related to the RSUs prior to our initial public offering. Upon the closing of our initial public offering in October 2014, we recorded $3.8 million of stock-based compensation expense in our consolidated and combined statement of operations and comprehensive loss for the quarter ended December 31, 2014. The remaining unrecognized stock-based compensation expense relating to nonvested RSUs will be recognized as the RSUs vest over the remaining service periods through 2018. As of June 30, 2015, there was $3.1 million of unrecognized stock-based compensation expense related to RSUs that is expected to be recognized over a weighted average period of 1.31 years. The aggregate intrinsic value of the RSUs outstanding at June 30, 2015 was $32.6 million.

The following is a summary of RSU activity, including the restricted stock award discussed above, under our 2014 plan:

	Restricted Stock Awards		RSUs	
	Shares	Weighted Average Grant Date Fair Value	Shares	Weighted Average Grant Date Fair Value
Unvested at December 31, 2014	112,740	$ 0.40	619,303	$ 4.64
Granted	—	—	87,600	$ 25.15
Forfeited	—	—	(2,645)	8.59
Vested	(32,211)	$ 0.40	(168,546)	$ 5.92
Unvested at June 30, 2015	80,529	$ 0.40	535,712	$ 7.57

Under our RSU net settlement procedures, we withhold shares at settlement to cover the minimum payroll withholding obligations for employee income and other employment taxes. During 2015, we settled 285,259 RSUs, of which 281,391 RSUs were net settled by withholding 119,684 shares. The value of these withheld RSUs was $4.4 million, based on the closing price of our common stock on the settlement date. This amount was remitted to the appropriate taxing authorities and $4.4 million has been reflected as a financing activity in our consolidated and combined statement of cash flows. These withheld shares are no longer considered issued and outstanding, thereby reducing our shares outstanding used to calculated earnings per share, and these shares were returned to the shares reserved for issuance under our 2014 plan and are available for future issuance.

Stock Options

The following is a summary of option activity under our 2014 plan:

	Number of shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at December 31, 2014	623,936	$ 13.69		
Granted (weighted-average grant date fair value of $15.32 per share)	802,099	27.09		
Exercised	(2,595)	12.55		
Forfeited	(3,758)	20.44		
Balance at June 30, 2015	1,419,682	$ 21.25	6.45	$ 44,740,905
Stock options vested and expected to vest at June 30, 2015	1,419,682	$ 21.25	6.45	$ 44,740,905
Exercisable at June 30, 2015	118,380	$ 17.18	6.35	$ 4,211,691

Aggregate intrinsic value represents the difference between the closing stock price of our common stock on June 30, 2015 and the exercise price of outstanding, in-the-money options. As of June 30, 2015, there was $14.9 million of unrecognized stock-based compensation expense related to stock options that is expected to be recognized over a weighted average period of 3.22 years.

The fair value of options issued during 2015 was estimated at the date of grant using the Black-Scholes valuation model wi th the following weighted-average assumptions:

	Three Months Ended June 30, 2015		Six Months Ended June 30, 2015	
	Employees	Non Employees	Employees	Non Employees
Risk-free interest rate	1.7% - 1.9%	—	1.3% - 1.9%	1.6%
Expected life of options in years	4.5	—	4.5	6.9
Expected volatility of underlying stock	71.1% - 73.4%	—	71.1% - 73.4%	70.1%
Expected dividend yield	0.0%	—	0.0%	0.0%

Stock-based Compensation Expense

Total stock-based compensation expense related to all employee and non-employee awards was as follows (in thousands):

	Three months ended June 30,		Six months ended June 30,	
	2015	2014	2015	2014
Research and development	$ 1,251	$ 127	$ 2,540	$ 832
General and administrative	1,318	397	2,513	3,012
	$ 2,569	$ 524	$ 5,053	$ 3,844

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

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 audited consolidated and combined financial statements and related notes included in our 2014 Annual Report on Form 10-K. This discussion and other parts of this quarterly report contain forward-looking statements that involve risk and uncertainties, such as statements of our plans, objectives, expectations and intentions. As a result of many factors, including those factors set forth in the "Risk Factors" section of this quarterly report, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a clinical-stage biopharmaceutical company focused on developing novel therapeutics for serious unmet medical needs, with an initial focus on muscle wasting conditions, oncology and viral-associated diseases. We have two groups of product candidates: molecularly targeted biologics and allogeneic, or third-party derived, antigen-specific T-cells, a type of white blood cell. Our molecularly targeted product candidates are biologics that inhibit myostatin and activin, members of the Transforming Growth Factor-Beta, or TGF-ß, protein superfamily, which play roles in the growth and maintenance of muscle and many other body tissues. Our lead molecularly targeted product candidate, PINTA 745, is in a Phase 2 clinical trial for protein energy wasting, a condition affecting many end-stage renal disease patients. Our second molecularly targeted product candidate is STM 434. We commenced a Phase 1 clinical study of STM 434 for ovarian cancer and other solid tumors in 2014. We have five additional molecularly targeted product candidates that modulate the TGF-ß pathway in preclinical development. Our T-cell product candidates arise from a platform technology designed to produce off-the-shelf, partially human leukocyte antigen matched cellular therapeutics. We licensed these product candidates from MSK in June 2015. Our initial T-cell product candidates target viral- or cancer-specific antigens and are designed to harness the body's immune system to counteract specific viral infections and cancers. Our most advanced T-cell product candidate, EBV-CTL, is in Phase 2 clinical trials for malignancies associated with Epstein-Barr Virus, including EBV-associated lymphoproliferative diseases, or EBV-LPD. EBV-LPD is a cancer affecting some patients who have received an allogeneic hematopoietic cell transplant, or HCT, or a solid organ transplant, or SOT, or are otherwise immunocompromised. In February 2015, the US Food and Drug Administration, or the FDA, granted Breakthrough Therapy designation for EBV-CTL in the treatment of rituximab-refractory EBV-LPD after HCT, commonly known as bone marrow transplant. Our second T-cell product candidate, CMV-CTL, is in Phase 2 clinical trials for cytomegalovirus, or CMV, infection that occurs in some patients who have received an HCT, SOT, or are otherwise immunocompromised. Our third T-cell product candidate, WT1-CTL, targets cancers expressing the antigen Wilms Tumor 1 and is currently in Phase 1 clinical studies. We intend to license or acquire additional product candidates to develop and commercialize.

Our current product candidate portfolio was acquired through licensing arrangements with Amgen and MSK in exchange for convertible preferred stock, common stock and future milestone payments and royalties. Through these arrangements, we obtained licenses to patent rights and the ability to use certain proprietary know-how to develop and commercialize our portfolio of product candidates. We are responsible for obtaining all regulatory approvals and developing commercial scale manufacturing processes to enable eventual commercialization of these product candidates.

We have only a limited operating history. Since our inception in 2012, we have devoted substantially all of our resources to identify, acquire and develop our product candidates, including conducting preclinical and clinical studies and providing general and administrative support for these operations.

In February 2015, we completed a follow-on public offering of 4,417,358 shares of common stock at an offering price of $18.00 per share. We received net proceeds of approximately $69.5 million after deducting underwriting discounts and commissions and offering expenses.

In July 2015, we completed a follow-on public offering of 3,980,768 shares of common stock at an offering price of $52.00 per share. We received net proceeds of approximately $193.9 million after deducting underwriting discounts and commissions and offering expenses.

We have never generated revenues and have incurred net losses since inception. Our net loss was $24.1 million for the six months ending June 30, 2015 and as of June 30, 2015, we had an accumulated deficit of $65.0 million. Substantially all of our net losses have resulted from costs incurred in connection with our research and development programs and from general and administrative expenses associated with our operations. Our cash and cash equivalents and short-term available-for-sale investment balances at June 30, 2015 totaled $155.0 million, which we intend to use to fund our operations.

Financial Overview

Basis of Presentation and Recapitalization

Atara was formed as a management company with the sole purpose of providing management, financial and administrative services for Nina, Pinta and Santa Maria. Since inception, Atara, Nina, Pinta and Santa Maria have been under common management and common ownership for all periods and as of all dates prior to our recapitalization on March 31, 2014, we have presented the results of operations and financial condition of the four companies on a combined basis. The combined financial statements include the accounts of the four individual companies since inception, with intercompany transactions eliminated.

On March 31, 2014, we implemented a recapitalization in which (a) all the outstanding shares of common stock of Atara were cancelled and forfeited by existing stockholders and (b) the stockholders of Nina, Pinta and Santa Maria exchanged their existing common and convertible preferred stock for newly-issued shares of Atara, in the same proportions and with the same rights and privileges as the outstanding capital stock of Nina, Pinta and Santa Maria, on a collective nine-for-one basis. Atara assumed the separate equity incentive plans sponsored by Nina, Pinta and Santa Maria and all outstanding RSUs and restricted stock awards granted under such plans. At the time of RSU settlement, each employee or consultant will receive one share of common stock of Atara for three RSUs in each of Nina, Pinta, and Santa Maria (collectively, a nine-for-one exchange). We refer to this transaction as our recapitalization. As a result of the recapitalization, Nina, Pinta and Santa Maria became wholly owned subsidiaries of Atara effective March 31, 2014. The recapitalization was accounted for as a combination of businesses under common control and the assets and liabilities of Nina, Pinta and Santa Maria were recorded by Atara at their historical carrying amounts on March 31, 2014. Beginning March 31, 2014, our financial statements are presented on a consolidated basis. Except as otherwise noted, all share and per share amounts presented in this "Management's Discussion and Analysis of Financial Condition and Results of Operations" give effect to the recapitalization.

Revenues

To date, we have not generated any revenues. We do not expect to receive any revenues from any product candidates that we develop until we obtain regulatory approval and commercialize our products or enter into collaborative agreements with third parties.

Research and Development Expenses

The largest component of our total operating expenses since inception has been our investment in research and development activities, including the preclinical and clinical development of our product candidates. Research and development expenses consist of costs incurred in performing research and development activities, including compensation and benefits for research and development employees, including stock-based compensation, an allocation of facility and overhead expenses, expenses incurred under agreements with contract research organizations and investigative sites that conduct clinical trials and preclinical studies, the costs of acquiring and manufacturing clinical trial materials and other supplies and costs associated with product development efforts, preclinical activities and regulatory operations. Research and development costs are expensed as incurred.

We plan to increase our research and development expenses for the foreseeable future as we continue the development of our product candidates. Our current planned research and development activities include the following:

- increase enrollment and completion of our Phase 2 clinical trial of PINTA 745;
- increase enrollment and completion of our Phase 1 clinical study of STM 434;
- rapidly advance EBV-CTL in clinical development for the treatment of EBV-LPD after HCT and SOT;
- develop CMV-CTL based on existing clinical proof of concept data in refractory CMV infection after HCT;
- continue development of WT1-CTL and collaborate with MSK in the discovery and development of additional T-cell programs;
- expand our t-cell platform into other indications or viral targets;
- process development and manufacturing of drug supply to support clinical trials and IND-enabling studies; and
- leverage our relationships and experience to in-license or acquire additional product candidates for development.

In addition, we believe it is important to invest in the development of new product candidates to continue to build the value of our product candidate pipeline and our business. We plan to continue to advance our most promising early product candidates into preclinical development with the objective to advance these early-stage programs to human clinical studies over the next several years.

Our expenditures on current and future preclinical and clinical development programs are subject to numerous uncertainties in timing and cost to completion. The duration, costs, and timing of clinical trials and development of our product candidates will depend on a variety of factors, including:

- the scope, rate of progress, and expenses of our ongoing as well as any additional clinical trials and other research and development activities;
- future clinical trial results;
- uncertainties in clinical trial enrollment rates or drop-out or discontinuation rates of patients;
- potential additional safety monitoring or other studies requested by regulatory agencies;
- significant and changing government regulation; and
- the timing and receipt of any regulatory approvals.

The process of conducting the necessary clinical research to obtain FDA approval is costly and time consuming and the successful development of our product candidates is highly uncertain. We may never succeed in achieving regulatory approval for any of our product candidates.

General and Administrative Expenses

General and administrative expenses consist primarily of personnel costs, allocated facilities costs and other expenses for outside professional services, including legal, human resources, audit and accounting services. Personnel costs consist of salaries, benefits and stock-based compensation. We anticipate that our general and administrative expenses will continue to increase in the future as we increase our headcount to support our continued research and development and potential commercialization of our product candidates.

Interest and Other Income

Interest and other income consists primarily of interest earned on our cash, cash equivalents and marketable securities as well as interest on notes receivable issued to one of our employees related to the purchase of restricted common stock.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of financial condition and results of operations are based upon our unaudited condensed consolidated and combined financial statements, which have been prepared in accordance with GAAP. The preparation of these condensed consolidated and combined financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, and expenses. On an on-going basis, we evaluate our critical accounting policies and estimates. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable in the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions and conditions. Our significant accounting policies are more fully described in Note 2 of the accompanying unaudited condensed consolidated and combined financial statements and in Note 2 to our audited consolidated and combined financial statements included in our Annual Report on Form 10-K.

Emerging Growth Company Status

We are an "emerging growth company" as defined in the JOBS Act, and therefore we may take advantage of certain exemptions from various public company reporting requirements. As an "emerging growth company":

- we will avail ourselves of the exemption from the requirement to obtain an attestation and report from our auditors on the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act;
- we will provide less extensive disclosure about our executive compensation arrangements; and
- we will not require stockholder non-binding advisory votes on executive compensation or golden parachute arrangements.

However, we are choosing to irrevocably opt out of the extended transition periods available under the JOBS Act for complying with new or revised accounting standards. We will remain an "emerging growth company" for up to five years, although we will cease to be an "emerging growth company" upon the earliest of: (1) December 31, 2019; (2) the last day of the first fiscal year in which our annual gross revenues are $1 billion or more; (3) the date on which we have, during the previous rolling three-year period, issued more than $1 billion in non-convertible debt securities; and (4) the date on which we are deemed to be a "large accelerated filer" as defined in the Securities Exchange Act of 1934, as amended.

Results of Operations

Comparison of the Three Months Ended June 30, 2015 and 2014

Research and development expenses

Research and development expenses consisted of the following costs by program:

	Three months ended June 30,		Increase
	2015	2014	(Decrease)
	(in thousands)		
PINTA 745	$ 1,433	$ 611	$ 822
STM 434	628	1,833	(1,205)
ATA 842 and other pipeline programs	1,825	68	1,757
T-cell therapy programs	4,587	—	4,587
Employee and overhead costs	3,034	664	2,370
Total research and development expense	$ 11,507	$ 3,176	$ 8,331

PINTA 745 program costs increased by $0.8 million in 2015 compared to 2014 due to increased clinical development and production costs to support our ongoing Phase 2 clinical trial that commenced during the fourth quarter of 2013. We anticipate that PINTA 745 costs will continue to increase in 2015 as we incur additional costs to manufacture future clinical drug supply to support our ongoing and future clinical trials.

STM 434 program costs decreased by $1.2 million in 2015 as compared to the prior period primarily due to a $1.0 million license payment to Amgen made in the second quarter of 2014. In addition, we incurred higher outside production costs in 2014 to manufacture clinical drug supply for our Phase 1 clinical study that commenced in the second half of 2014. We anticipate that STM 434 costs will increase in the second half of 2015 due to the timing of manufacturing costs associated with the production of additional clinical drug supply and continued enrollment of our ongoing clinical trial.

ATA 842 and other pipeline program costs increased by $1.8 million in 2015 as compared to 2014 primarily due to preclinical development and production activities.

T-cell therapy program costs increased by $4.6 million in 2015 due to the June 2015 exercise of our option to license T-cell therapies from MSK. In connection with the execution of the license agreement, we agreed to make an upfront cash payment of $4.5 million to MSK and this amount has been recorded as research and development expense in the second quarter of 2015.

Employee and overhead costs increased by $2.4 million in 2015 as compared to 2014 primarily as a result of a $1.1 million increase in stock-based compensation and a $0.9 increase in payroll-related costs driven by increased headcount.

General and administrative expenses

	Three months ended June 30,		Increase
	2015	2014	(Decrease)
	(in thousands)		
General and administrative expense	$ 3,601	$ 1,358	$ 2,243

General and administrative expenses increased $2.2 million in 2015 as compared to 2014 primarily due to a $0.9 million increase in stock-based compensation. Higher legal expenses, payroll-related costs driven by increased headcount and other outside services also contributed to the increase in general and administrative expenses.

Comparison of the Six Months Ended June 30, 2015 and 2014

Research and development expenses

Research and development expenses consisted of the following costs by program:

	Six months ended June 30,		Increase
	2015	2014	(Decrease)
	(in thousands)		
PINTA 745	$ 2,909	$ 1,136	$ 1,773
STM 434	1,291	3,150	(1,859)
ATA 842 and other pipeline programs	2,806	80	2,726
T-cell therapy programs	4,708	—	4,708
Employee and overhead costs	5,560	1,791	3,769
Total research and development expense	$ 17,274	$ 6,157	$ 11,117

PINTA 745 program costs increased by $1.8 million in 2015 compared to 2014 primarily due to increased clinical development and production costs to support our ongoing Phase 2 clinical trial that commenced during the fourth quarter of 2013. We anticipate that PINTA 745 costs will continue to increase in 2015 as we incur additional costs to manufacture future clinical drug supply to support our ongoing and future clinical trials.

STM 434 program costs decreased by $1.9 million in 2015 as compared to the prior period due to a $1.0 million license payment to Amgen made in the second quarter of 2014. In addition, we incurred higher outside production costs in 2014 to manufacture clinical drug supply for our Phase 1 clinical study that commenced in the second half of 2014. We anticipate that STM 434 costs will increase in the second half of 2015 due to the timing of manufacturing costs associated with the production of additional clinical drug supply and continued enrollment of our ongoing clinical trial.

ATA 842 and other pipeline program costs increased by $2.7 million in 2015 as compared to 2014 primarily due to preclinical development and production activities.

T-cell therapy program costs increased by $4.7 million in 2015 due to the June 2015 exercise of our option to license T-cell therapies from MSK. In connection with the execution of the license agreement, we agreed to make an upfront cash payment of $4.5 million to MSK and this amount has been recorded as research and development expense in the second quarter of 2015.

Employee and overhead costs increased by $3.8 million in 2015 as compared to 2014 primarily as a result of a $1.7 million increase in stock-based compensation and a $1.4 million increase in payroll-related costs driven by increased headcount.

General and administrative expenses

	Six months ended June 30,		Increase
	2015	2014	(Decrease)
	(in thousands)		
General and administrative expense	$ 7,145	$ 5,454	$ 1,691

General and administrative expenses increased by $1.7 million in 2015 compared to 2014 primarily due to higher payroll-related costs driven by increased headcount, higher legal costs and higher director and officer insurance premiums. This increase was partially offset by a $0.5 million decrease in stock-based compensation due to our use of accelerated graded vesting for compensation expense associated with restricted stock awards, which resulted in higher expenses in the early periods.

Liquidity and Capital Resources

We have incurred cumulative losses and negative cash flows from operations since our inception in 2012, and we had an accumulated deficit of $65.0 million as of June 30, 2015. It will be several years, if ever, before we have a product candidate ready for commercialization, and we anticipate that we will continue to incur losses for at least the next several years. We expect that our research and development and general and administrative expenses will continue to increase and, as a result, we will need additional capital to fund our operations, which we may raise through a combination of equity offerings, debt financings, other third-party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements.

Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation. Currently, our cash and cash equivalents and short-term investments are held in bank and custodial accounts and consist of money market mutual funds, corporate bonds and commercial paper. Management expects that existing cash and cash equivalents as of June 30, 2015 will be sufficient to fund our current operating plan for at least the next twelve months.

Beginning May 15, 2015 and quarterly thereafter, vested restricted stock units have been settled on a quarterly basis. We collect payroll taxes based on the fair value of these awards by withholding a pro-rata amount of shares equivalent to the employee's tax obligation. In the second quarter of 2015, the total payroll taxes collected and remitted on restricted stock settlements was $4.4 million. We expect the amounts in 2016 and beyond to decrease, as the number of vested and settled RSUs decreases.

Working capital was $149.0 million as of June 30, 2015 and included in working capital were cash, cash equivalents, and short-term available-for-sale investments of $155.0 million.

Our cash, cash equivalents and short-term investments balances were as follows:

Our cash,	June 30, 2015	December 31, 2014
	(in thousands)	
Cash and cash equivalents	$ 26,190	$ 21,897
Short-term available-for-sale investments	128,841	82,219
Total cash and cash equivalents and short-term available-for-sale investments	$ 155,031	$ 104,116

Cash Flows

Comparison of the Six Months Ended June 30, 2015 and 2014

The following table details the primary sources and uses of cash for each of the periods set forth below:

	Six months ended June 30,	
	2015	2014
	(in thousands)	
Net cash provided by (used in):		
Operating activities	$ (12,864)	$ (7,579)
Investing activities	(47,820)	(24,992)
Financing activities	64,977	12,735
Net increase (decrease) in cash and cash equivalents	$ 4,293	$ (19,836)

Operating activities

For the six months ended June 30, 2015 and 2014, we used $12.9 million and $7.6 million, respectively, of net cash in operating activities. The $5.3 million increase in cash used in operating activities was primarily due to the $12.5 million increase in net loss, partially offset by the $4.5 million accrual related to our June 2015 license agreement with MSK and a $1.2 million increase in stock-based compensation expense.

Investing activities

Net cash used in investing activities during the six months ended June 30, 2015 consisted primarily of $111.3 million invested in short-term available-for-sale investments, offset by maturities of $63.4 million. Net cash used in investing activities during the six months ended June 30, 2014 consisted primarily of $25.0 million invested in short-term available-for-sale investments.

Financing activities

Net cash provided by financing activities for the six months ended June 30, 2015 was $65.0 million, consisting primarily of $69.5 million proceeds from the sale of common stock, net of offering costs. These net proceeds were offset by $4.5 million used to pay taxes related to the net share settlement of restricted stock units in the second quarter of 2015. Net cash provided by financing activities for the six months ended June 30, 2014 was $12.7 million, consisting primarily of the $13.5 million proceeds from the sale of shares of Series B convertible preferred stock, net of offering costs.

Operating Capital Requirements and Plan of Operations

To date, we have not generated any revenue from product sales. We do not know when, or if, we will generate any revenue from product sales. We do not expect to generate significant revenue from product sales unless and until we obtain regulatory approval of and commercialize one of our current or future product candidates. We anticipate that we will continue to generate losses for the foreseeable future, and we expect the losses to increase as we continue the development of and seek regulatory approvals for our product candidates, and begin to commercialize any approved products. We are subject to all of the risks inherent in the development of new products, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. We have incurred and expect to continue to incur additional costs associated with operating as a public company and we anticipate that we will need substantial additional funding in connection with our continuing operations.

We expect that our existing cash and cash equivalents will be sufficient to enable us to complete planned preclinical and clinical trials for our lead product candidates through the second half of 2018. In order to complete the process of obtaining regulatory approval for our lead product candidates and to build the sales, marketing and distribution infrastructure that we believe will be necessary to commercialize our lead product candidates, if approved, we will require substantial additional funding.

We have based our projections of operating capital requirements on assumptions that may prove to be incorrect and we may use all of our available capital resources sooner than we expect. Because of the numerous risks and uncertainties associated with research, development and commercialization of pharmaceutical products, we are unable to estimate the exact amount of our operating capital requirements. Our future funding requirements will depend on many factors, including, but not limited to:

- the timing and costs of our planned clinical trials for our product candidates;
- the timing and costs of our planned preclinical studies of our product candidates;
- our success in establishing and scaling commercial manufacturing capabilities;
- the number and characteristics of product candidates that we pursue;
- the outcome, timing and costs of seeking regulatory approvals;
- subject to receipt of regulatory approval, revenues received from commercial sales of our product candidates;
- the terms and timing of any future collaborations, licensing, consulting or other arrangements that we may establish;
- the amount and timing of any payments we may be required to make in connection with the licensing, filing, prosecution, maintenance, defense and enforcement of any patents or patent applications or other intellectual property rights; and
- the extent to which we in-license or acquire other products and technologies.

Contractual Obligations and Commitments and Off-Balance Sheet Arrangements

Contractual Obligations and Commitments

During the six months ended June 30, 2015, there were no material changes to our contractual obligations reported in our Annual Report on Form 10-K for the year ended December 31, 2014.

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 in the rules and regulations of the SEC.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

During the six months ended June 30, 2015, there were no material changes to our market risk disclosures reported in our Annual Report on Form 10-K for the year ended December 31, 2014.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Under the supervision of our Chief Executive Officer and Chief Financial Officer, we evaluated the effectiveness of our disclosure controls and procedures, as defined in Rules 13a-15(e) of the Exchange Act as of June 30, 2015. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of June 30, 2015 to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely discussion regarding required disclosure.

Changes in Internal Control Over Financial Reporting

There have been no changes in our internal controls over financial reporting during the six months ended June 30, 2015 that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and our Chief Financial Officer, believes that our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives and are effective at the reasonable assurance level. However, our management does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by the collusion of two or more people or by management override of controls. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

We are not currently party to any material litigation or other material legal proceedings.

Item 1A. Risk Factors

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider all of the risk factors and uncertainties described below, in addition to the other information contained in this Quarterly Report on Form 10-Q, including the section of this report titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated and combined financial statements and related notes, before investing in our common stock. If any of the following risks materialize, our business, financial condition and results of operations could be seriously harmed. In these circumstances, the market price of our common stock could decline, and you may lose all or a part of your investment.

Risks Related to Our Financial Results and Capital Needs

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

We are a clinical-stage biopharmaceutical company. Investment in biopharmaceutical product development is highly speculative because it entails substantial upfront capital expenditures and significant risk that a product candidate will fail to prove effective, gain regulatory approval or become commercially viable. We do not have any products approved by regulatory authorities and have not generated any revenues from product sales to date, and have incurred significant research, development and other expenses related to our ongoing operations and expect to continue to incur such expenses. As a result, we have not been profitable and have incurred significant operating losses in every reporting period since our inception. For the six months ended June 30, 2015, we reported a net loss of $24.1 million and we had an accumulated deficit of $65.0 million at June 30, 2015.

We do not expect to generate revenues for many years, if at all. We expect to continue to incur significant expenses and operating losses for the foreseeable future. We anticipate these losses to increase as we continue to research, develop and seek regulatory approvals for our product candidates and any additional product candidates we may acquire, and potentially begin to commercialize product candidates that may achieve regulatory approval. 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 revenues. If any of our product candidates fails in clinical trials or does not gain regulatory approval, or if approved, fails to achieve market acceptance, we may never become profitable. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. We anticipate that our expenses will increase in the future as we continue to invest in research and development of our existing product candidates, investigate and potentially acquire new product candidates and expand our manufacturing and commercialization activities.

We have a limited operating history, which may make it difficult for you to evaluate the success of our business to date and to assess our future viability.

Our company was formed in August 2012. Our operations to date have been limited to organizing and staffing our company, acquiring product and technology rights and conducting product development activities for our product candidates. We have not yet demonstrated our ability to successfully complete any Phase 2 or Phase 3 clinical trials, obtain regulatory approval, manufacture a commercial scale product or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful commercialization for any of our product candidates. In addition, the adoptive immunotherapy technology underlying our T-cell product candidates, EBV-CTL, CMV-CTL and WT1-CTL, is new and largely unproven. Any predictions about our future success, performance or viability, particularly in view of the rapidly evolving cancer immunotherapy field, may not be as accurate as they could be if we had a longer operating history or approved products on the market.

In addition, as a young business, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors. We will need to transition at some point from a company with a research and development focus to a company capable of supporting commercial activities. We may not be successful in such a transition. We expect our financial condition and operating results to continue to fluctuate significantly from quarter to quarter and year to year due to a variety of factors, many of which are beyond our control. Accordingly, you should not rely upon the results of any quarterly or annual periods as indications of future operating performance.

We currently have no source of revenues. We may never generate revenues or achieve profitability.

To date, we have not generated any revenues from product sales or otherwise. Even if we are able to successfully achieve regulatory approval for our product candidates, we do not know when we will generate revenues or become profitable, if at all. Our ability to generate revenues from product sales and achieve profitability will depend on our ability to commercialize products, including any of our current product candidates, and other product candidates that we may develop, in-license or acquire in the future. Our ability to generate revenues and achieve profitability also depends on a number of additional factors, including our ability to:

- successfully complete development activities, including the necessary clinical trials;
- complete and submit biologics license applications, or BLAs, to the FDA and obtain US regulatory approval for indications for which there is a commercial market;
- complete and submit applications to, and obtain regulatory approval from, foreign regulatory authorities in Europe, Asia and other jurisdictions;
- obtain coverage and adequate reimbursement from third parties, including government and private payors;
- set a commercially viable price for our products;
- establish and maintain supply and manufacturing relationships with reliable third parties and ensure adequate, legally compliant manufacturing of bulk drug substances and drug products to maintain that supply;
- develop manufacturing and distribution processes for our novel T-cell product candidates;
- obtain commercial quantities of our products at acceptable cost levels;
- achieve market acceptance of our products, if any;
- attract, hire and retain qualified personnel;
- protect our rights in our intellectual property portfolio;
- develop a commercial organization capable of sales, marketing and distribution for any products we intend to sell ourselves in the markets in which we choose to commercialize on our own; and
- find suitable distribution partners to help us market, sell and distribute our approved products in other markets.

Our revenues for any product candidate for which regulatory approval is obtained will be dependent, in part, upon the size of the markets in the territories for which we gain regulatory approval, the accepted price for the product, the ability to get reimbursement at any price, and whether we own the commercial rights for that territory. If the number of our addressable disease patients is not as significant as we estimate, the indication approved by regulatory authorities is narrower than we expect, or the reasonably accepted population for treatment is narrowed by competition, physician choice or treatment guidelines, we may not generate significant revenues from sales of such products, even if approved. In addition, we anticipate incurring significant costs associated with commercializing any approved product candidate. As a result, even if we generate revenues, we may not become profitable and may need to obtain additional funding to continue operations. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and may be forced to reduce our operations.

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.

We expect to expend substantial resources for the foreseeable future continuing the clinical development and manufacturing of PINTA 745, STM 434, EBV-CTL, CMV-CTL and WT1-CTL and the advancement and expansion of our preclinical research pipeline, including ATA 842. These expenditures will include costs associated with research and development, potentially acquiring new product candidates or technologies, conducting preclinical studies and clinical trials and potentially obtaining regulatory approvals and manufacturing products, as well as marketing and selling products approved for sale, if any. Under the terms of our license agreements with Amgen and MSK, we are obligated to make an upfront payment to MSK of $4.5 million and additional milestone payments of up to $86.0 million to Amgen and up to $33.0 million to MSK with respect to the three licensed clinical stage T-cell programs upon the achievement of certain development, regulatory approval or commercial milestones. In addition, other unanticipated costs may arise. Because the design and outcome of our planned and anticipated clinical trials is 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 other product candidates, and conducting preclinical studies and clinical trials;
- the timing of, and the costs involved in, obtaining regulatory approvals for our other product candidates if clinical trials are successful;
- the cost of commercialization activities for our product candidates, if any of these 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;
- our ability to establish and maintain strategic licensing or other arrangements and the financial terms of such agreements;
- the costs to in-license future product candidates or technologies;
- 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; and
- the emergence of competing technologies or other adverse market developments.

Based on our current operating plan, we believe that our existing cash and cash equivalents and short-term investments, together with the net proceeds from this offering, will be sufficient to fund our projected operating requirements through the second half of 2018. As of June 30, 2015, we had cash and cash equivalents and short-term investments of $155.0 million. However, our operating plan may change as a result of many factors currently unknown to us, and we may need additional funds sooner than planned. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. We do not have any committed external source of funds. Additional funds may not be available when we need them on terms that are acceptable to us, or at all. If adequate funds are not available to us on a timely basis, we may be required to delay, limit, reduce or terminate preclinical studies, clinical trials or other development activities for one or more of our product candidates or delay, limit, reduce or terminate our establishment of sales and marketing capabilities or other activities that may be necessary to commercialize our product candidates.

Raising additional capital may cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights to our product candidates on unfavorable terms to us.

We may seek additional capital through a variety of means, including through private and public equity offerings and debt financings. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms may include liquidation or other preferences that adversely affect your rights as a stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take certain actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds from third parties, we may have to relinquish valuable rights to our technologies or product candidates, or grant licenses on terms that are not favorable to us. If we are unable to raise additional funds through equity or debt financing when needed, we may be required to delay, limit, reduce or terminate our product development or commercialization efforts for our product candidates, or grant to others the rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

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

We have incurred substantial losses during our history and do not expect to become profitable in the near future and we may never achieve profitability. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset future taxable income, if any, until such unused losses expire. At December 31, 2014, we had federal and state net operating loss, or NOL, carryforwards of approximately $20.6 million, which, if not utilized, begin to expire in various amounts beginning in the year 2032. Under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, if over a rolling three-year period, the cumulative change in our ownership exceeds 50% (as determined under applicable Treasury regulations), our ability to utilize our US NOL carryforwards and other pre-change tax attributes (such as research tax credits) to offset future taxable income or taxes may be limited. We have experienced at least one ownership change since inception and our utilization of NOL carryforwards will therefore be subject to annual limitation. Our ability to utilize our NOL carryforwards may be further limited as a result of subsequent ownership changes, including potential changes in connection with this offering. Similar rules may apply under state tax laws. Further, other provisions of the Code may limit our ability to utilize NOLs incurred before the recapitalization to offset income or gain realized after the recapitalization, unless such income or gain is realized by the same entity that originally incurred such NOLs. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited. Such limitations could result in the expiration of our carryforwards before they can be utilized and, if we are profitable, our future cash flows could be adversely affected due to our increased tax liability.

Risks Related to the Development of Our Product Candidates

We are very early in our development efforts and have only five product candidates in clinical development. All of our other product candidates are still in preclinical development. If we or our collaborators are unable to successfully develop and commercialize product candidates or experience significant delays in doing so, our business may be materially harmed.

We are very early in our development efforts. We have five product candidates, PINTA 745, STM 434, EBV-CTL, CMV-CTL and WT1-CTL, in clinical development. All of our other product candidates are currently in preclinical development. We have invested substantially all of our efforts and financial resources in identifying and developing potential product candidates and conducting preclinical studies, clinical trials and manufacturing activities. Our ability to generate revenues, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our product candidates. The success of our product candidates will depend on several factors, including the following:

- completion of preclinical studies and clinical trials with positive results;
- receipt of regulatory approvals from applicable authorities;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- making arrangements with third-party manufacturers for, or establishing, commercial manufacturing capabilities;
- develop manufacturing and distribution processes for our novel T-cell product candidates;
- manufacturing products at an acceptable cost;
- launching commercial sales of our product candidates, if and when approved, whether alone or in collaboration with others;
- acceptance of the product candidates, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other therapies;
- obtaining and maintaining coverage and adequate reimbursement by third-party payors, including government payors, for our product candidates;
- protecting our rights in our intellectual property portfolio;
- maintaining a continued acceptable safety profile of the products following approval; and
- maintaining and growing an organization of scientists and business people who can develop and commercialize our products and technology.

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

Our future success is dependent on the regulatory approval of our product candidates.

We do not have any products that have gained regulatory approval. Currently, our only clinical-stage product candidates are PINTA 745, EBV-CTL and CMV-CTL, which are in Phase 2 clinical trials, and STM 434 and WT1-CTL, which are in Phase 1 clinical studies. Our business is substantially dependent on our ability to obtain regulatory approval for, and, if approved, to successfully commercialize our product candidates in a timely manner. We cannot commercialize product candidates in the United States without first obtaining regulatory approval for the product from the FDA; similarly, we cannot commercialize product candidates outside of the United States without obtaining regulatory approval from comparable foreign regulatory authorities. Before obtaining regulatory approvals for the commercial sale of any product candidate for a target indication, we must demonstrate with substantial evidence gathered in preclinical and clinical studies, generally including two well-controlled Phase 3 trials, that the product candidate is safe and effective for use for that target indication and that the manufacturing facilities, processes and controls are adequate with respect to such product candidate.

The time required to obtain approval by the FDA and comparable foreign regulatory authorities is unpredictable but typically takes many years following the commencement of preclinical studies and 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 obtained regulatory approval for any product candidate and it is possible that none of our existing product candidates or any future product candidates will ever obtain regulatory approval.

Our product candidates could fail to receive regulatory approval from the FDA or a comparable foreign regulatory authority for many reasons, including:

- disagreement with the design or implementation of our clinical trials;
- failure to demonstrate that a product candidate is safe and effective for its proposed indication;
- failure of clinical trials to meet the level of statistical significance required for approval;
- failure to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- disagreement with our interpretation of data from preclinical studies or clinical trials;
- the insufficiency of data collected from clinical trials of our product candidates to support the submission and filing of a BLA or other submission or to obtain regulatory approval;
- failure to obtain approval of the manufacturing processes or facilities of third-party manufacturers with whom we contract for clinical and commercial supplies; or
- changes in the approval policies or regulations that render our preclinical and clinical data insufficient for approval.

The FDA or a comparable foreign regulatory authority may require more information, including additional preclinical or clinical data to support approval, which may delay or prevent approval and our commercialization plans, or we may decide to abandon the development program. If we were to obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request (including failing to approve the most commercially promising indications), 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.

Even if a product candidate were to successfully obtain approval from the FDA and comparable foreign regulatory authorities, any approval might contain significant limitations related to use restrictions for specified age groups, warnings, precautions or contraindications, or may be subject to burdensome post-approval study or risk management requirements. If we are unable to obtain regulatory approval for one of our product candidates in one or more jurisdictions, or any approval contains significant limitations, we may not be able to obtain sufficient funding to continue the development of that product or generate revenues attributable to that product candidate. Also, any regulatory approval of our current or future product candidates, once obtained, may be withdrawn.

Our T-cell product candidates, EBV-CTL, CMV-CTL and WT1-CTL, represent new therapeutic approaches that present significant challenges.

Our future success is dependent in part on the successful development of T-cell immunotherapies in general and our EBV-CTL, CMV-CTL and WT1-CTL product candidates in particular. Because these programs represent a new approach to immunotherapy for the treatment of cancer and other diseases, developing and commercializing our product candidates subject us to a number of challenges, including:

- obtaining regulatory approval from the FDA and other regulatory authorities, which have very limited experience with the commercial development of T-cell therapies;
- developing and deploying consistent and reliable processes for procuring blood from consenting third-party donors, isolating T-cells from the blood of such donors, activating the isolated T-cells against a specific antigen, characterizing and storing the resulting activated T-cells for future therapeutic use, selecting and delivering an appropriate partially HLA matched cell line from among the available T-cell lines, and finally infusing these activated T-cells into patients;
- utilizing these product candidates in combination with other therapies, which may increase the risk of adverse side effects;
- educating medical personnel regarding the potential side effect profile of each of our product candidates;
- developing processes for the safe administration of these products, including long-term follow-up for all patients who receive these product candidates;
- sourcing clinical and, if approved, commercial supplies for the materials used to manufacture and process these product candidates;
- developing a manufacturing process and distribution network with a cost of goods that allows for an attractive return on investment;
- establishing sales and marketing capabilities after obtaining any regulatory approval to gain market acceptance, and obtaining adequate coverage, reimbursement and pricing by third-party payors and government authorities; and
- developing therapies for types of diseases beyond those initially addressed by our current product candidates.

We cannot be sure that the manufacturing processes used in connection with our T-cell product candidates, EBV-CTL, CMV-CTL and WT1-CTL, will yield satisfactory products that are safe and effective, scalable or profitable.

Moreover, public perception of therapy safety issues, including adoption of new therapeutics or novel approaches to treatment, may adversely influence the willingness of subjects to participate in clinical trials, or if approved, of physicians to subscribe to the novel treatment mechanics. Physicians, hospitals and third-party payors often are slow to adopt new products, technologies and treatment practices that require additional upfront costs and training. Physicians may not be willing to undergo training to adopt this novel therapy, may decide the therapy is too complex to adopt without appropriate training and may choose not to administer the therapy. Based on these and other factors, hospitals and payors may decide that the benefits of this new therapy do not or will not outweigh its costs.

The results of preclinical testing or earlier clinical studies are not necessarily predictive of future results. Our existing product candidates in clinical studies or trials, and any other product candidate we advance into clinical studies or trials, may not have favorable results in later clinical studies or trials or receive regulatory approval.

Success in preclinical studies and early clinical trials does not ensure that later clinical trials will generate adequate data to demonstrate the efficacy and safety of an investigational drug. A number of companies in the pharmaceutical and biotechnology industries, including those with greater resources and experience than us, have suffered significant setbacks in clinical trials, even after seeing promising results in earlier preclinical studies or clinical studies or trials. Despite the results reported in earlier preclinical studies or clinical studies or trials for our product candidates, we do not know whether the clinical trials we may conduct will demonstrate adequate efficacy and safety to result in regulatory approval to market PINTA 745, STM 434, EBV-CTL, CMV-CTL or WT1-CTL or any of our other product candidates in any particular jurisdiction. For example, our EBV-CTL, CMV-CTL and WT1-CTL product candidates have only been evaluated in single-center studies under investigator-sponsored INDs held by MSK, and the findings may not be reproducible in multi-center studies conducted under commercially-sponsored INDs. In addition, the Phase 2 clinical trials with EBV-CTL enrolled a heterogeneous group of patients with a variety of EBV-associated malignancies, including but not limited to EBV-LPD after HCT and EBV-LPD after SOT. These Phase 2 studies were not prospectively designed to evaluate the efficacy of EBV-CTL in the treatment of a single disease state for which we may later seek approval. Efficacy data from prospectively designed studies may differ significantly from those obtained from retrospective subgroup analyses. If later-stage clinical trials do not produce favorable results, our ability to achieve regulatory approval for any of our product candidates may be adversely impacted. Even if we believe that we have adequate data to support an application for regulatory approval to market any of our product candidates, the FDA or other regulatory authorities may not agree and may require that we conduct additional clinical trials.

Clinical drug development involves a lengthy and expensive process with an uncertain outcome.

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. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through preclinical and clinical studies and early clinical trials.

We may experience delays in our ongoing or future clinical studies or trials and we do not know whether planned clinical studies or trials will begin or enroll subjects on time, will need to be redesigned or will be completed on schedule, if at all. There can be no assurance that the FDA will not put clinical studies or trials of any of our product candidates on clinical hold in the future. Clinical studies or trials may be delayed, suspended or prematurely terminated for a variety of reasons, such as:

- delay or failure in reaching agreement with the FDA or a comparable foreign regulatory authority on a study or trial design that we are able to execute;
- delay or failure in obtaining authorization to commence a study or trial or inability to comply with conditions imposed by a regulatory authority regarding the scope or design of a study or trial;
- delay or failure in reaching agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical study or trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and study or trial sites;
- delay or failure in obtaining institutional review board, or IRB, approval or the approval of other reviewing entities, including comparable foreign regulatory authorities, to conduct a clinical study or trial at each site;
- withdrawal of clinical study or trial sites from our clinical studies or trials or the ineligibility of a site to participate in our clinical studies or trials;
- delay or failure in recruiting and enrolling suitable subjects to participate in a study or trial;
- delay or failure in subjects completing a study or trial or returning for post-treatment follow-up;
- clinical sites and investigators deviating from trial protocol, failing to conduct the study or trial in accordance with regulatory requirements, or dropping out of a study or trial;
- inability to identify and maintain a sufficient number of study or trial sites, many of which may already be engaged in other clinical study or trial programs, including some that may be for the same indication;
- failure of our third-party clinical study or trial managers to satisfy their contractual duties, meet expected deadlines or return trustworthy data;
- delay or failure in adding new study or trial sites;
- interim results or data that are ambiguous or negative or are inconsistent with earlier results or data;

- feedback from the FDA, the IRB, data safety monitoring boards or a comparable foreign regulatory authority, or results from earlier stage or concurrent preclinical and clinical studies, that might require modification to the protocol for a study or trial;
- a decision by the FDA, the IRB, a comparable foreign regulatory authority, or us, or a recommendation by a data safety monitoring board or comparable foreign regulatory authority, to suspend or terminate clinical studies or trials at any time for safety issues or for any other reason;
- unacceptable risk-benefit profile, unforeseen safety issues or adverse side effects;
- failure to demonstrate a benefit from using a drug;
- difficulties in manufacturing or obtaining from third parties sufficient quantities of a product candidate for use in studies or trials;
- lack of adequate funding to continue a study or trial, including the incurrence of unforeseen costs due to enrollment delays, requirements to conduct additional studies or increased expenses associated with the services of our CROs and other third parties; or
- changes in governmental regulations or administrative actions or lack of adequate funding to continue a clinical study or trial.

Patient enrollment, a significant factor in the timing of clinical studies or trials, is affected by many factors including the size and nature of the patient population, the severity of the disease under investigation, the proximity of subjects to clinical sites, the patient referral practices of physicians, the eligibility criteria for the study or trial, the design of the clinical study or trial, ability to obtain and maintain patient consents, risk that enrolled subjects will drop out before completion, competing clinical studies or trials and clinicians' and patients' perceptions as to the potential advantages and risks of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating. We may not be able to initiate or continue to support clinical trials of PINTA 745, EBV-CTL or CMV-CTL or clinical studies for STM 434 or WT1-CTL or any future product candidates if we are unable to locate and enroll a sufficient number of eligible participants in these studies or trials as required by the FDA or other regulatory authorities. Even if we are able to enroll a sufficient number of patients in our clinical studies or trials, if the pace of enrollment is slower than we expect, the development costs for our product candidates may increase and the completion of our studies may be delayed or our studies or trials could become too expensive to complete. We rely on CROs, other vendors and clinical study or trial sites to ensure the proper and timely conduct of our clinical studies and trials, and while we have agreements governing their committed activities, we have limited influence over their actual performance.

If we experience delays in the completion or termination of any clinical study or trial of our product candidates, the commercial prospects of such product candidate will be harmed, and our ability to generate product revenues from such product candidate will be delayed. In addition, any delays in completing our clinical studies or 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. Any delays in completing our clinical studies or trials for the product candidates we have licensed from Amgen or MSK may also decrease the period of commercial exclusivity under our corresponding product candidate license from Amgen or MSK. In addition, many of the factors that could cause a delay in the commencement or completion of clinical studies or trials may also ultimately lead to the denial of regulatory approval of our product candidates.

Our product candidates, the methods used to deliver them or their dosage levels may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial profile of an approved label or result in significant negative consequences following any regulatory approval.

Undesirable side effects caused by our product candidates, their delivery methods or dosage levels could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign regulatory authority. As a result of safety or toxicity issues that we may experience in our clinical studies or trials in the future, we may not receive approval to market any product candidates, which could prevent us from ever generating revenues or achieving profitability. Results of our studies or trials could reveal an unacceptably high severity and prevalence of side effects. In such an event, our studies or trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of or deny approval of our product candidates for any or all targeted indications. The drug-related side effects could affect patient recruitment or the ability of enrolled subjects to complete the trial or result in potential product liability claims. Any of these occurrences may have a material adverse effect on our business, results of operations, financial condition, cash flows and future prospects.

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

- we may be forced to suspend marketing of such product;
- regulatory authorities may withdraw their approvals of such product;
- regulatory authorities may require additional warnings on the label that could diminish the usage or otherwise limit the commercial success of such products;
- we may be required to conduct post-market studies;
- we may be required to change the way the product is administered;
- we could be sued and held liable for harm caused to subjects or 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.

We may not be able to obtain orphan drug exclusivity for our product candidates.

Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals annually in the United States. We have applied for orphan drug status for STM 434 for ovarian cancer and for EBV-CTL for rituximab-refractory EBV-LPD after HCT. In addition, we may seek orphan drug status for EBV-CTL in EBV-LPD after SOT, for CMV-CTL in refractory CMV infection after HCT and for WT1-CTL in AML and multiple myeloma.

Generally, if a product with an orphan drug designation subsequently receives the first regulatory approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the European Medicines Agency, or EMA, or the FDA from approving another marketing application for the same drug for that time period. The applicable period is seven years in the United States and ten years in Europe. The European exclusivity period can be reduced to six years if a drug no longer meets the criteria for orphan drug designation or if the drug is sufficiently profitable so that market exclusivity is no longer justified. Orphan drug exclusivity may be lost if the FDA or EMA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition.

Even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs can be approved for the same condition. Even after an orphan drug is approved, the FDA can subsequently approve a new drug for the same condition if the FDA concludes that the later drug is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care.

Failure to obtain regulatory approval in international jurisdictions would prevent our product candidates from being marketed abroad.

In addition to regulations in the United States, to market and sell our products in the European Union, many Asian countries and other jurisdictions, we must obtain separate regulatory approvals and comply with numerous and varying regulatory requirements. We have had no significant interactions with foreign regulatory authorities to date. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. Clinical trials accepted in one country may not be accepted by regulatory authorities in other countries. In addition, many countries outside the United States require that a product be approved for reimbursement before it can be approved for sale in that country. We may not be able to obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. We may not be able to file for regulatory approvals and may not receive necessary approvals to commercialize our products in any market. If we are unable to obtain approval of any of our product candidates by regulatory authorities in the European Union, Asia or elsewhere, the commercial prospects of that product candidate may be significantly diminished, our business prospects could decline and this could materially adversely affect our business, results of operations and financial condition.

Even if our product candidates receive regulatory approval, they may still face future development and regulatory difficulties.

Even if we obtain regulatory approval for a product candidate, it would be subject to ongoing requirements by the FDA and comparable foreign regulatory authorities governing the manufacture, quality control, further development, labeling, packaging, storage, distribution, adverse event reporting, safety surveillance, import, export, advertising, promotion, recordkeeping and reporting of safety and other post-market information. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance by our contract manufacturing organizations, or CMOs, and CROs for any post-approval clinical trials that we conduct. For example, if labeling is ultimately approved for PINTA 745, it will likely include restrictions on use due to the specific patient population and manner of use in which the product candidate was evaluated and the safety and efficacy data obtained in those evaluations. In addition, PINTA 745 may be required to include a boxed warning, or "black box," regarding PINTA 745 being teratogenic, or causing fetal or embryotic malformations, in animal studies. The safety profile of any product will continue to be closely monitored by the FDA and comparable foreign regulatory authorities after approval. If the FDA or comparable foreign regulatory authorities become aware of new safety information after approval of any of our product candidates, they may require labeling changes or establishment of a risk evaluation and mitigation strategy, impose significant restrictions on a product's indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies or post-market surveillance.

In addition, manufacturers of drug products and their facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with current good manufacturing practices, or cGMP, current Good Clinical Practices, or GCP, current good tissue practices, or GTPs, and other regulations. If we or a regulatory agency discover previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions on that product, the manufacturing facility or us, including requiring recall or withdrawal of the product from the market or suspension of manufacturing. If we, our product candidates or the manufacturing facilities for our product candidates fail to comply with applicable regulatory requirements, a regulatory agency may:

- issue warning letters or untitled letters;
- mandate modifications to promotional materials or require us to provide corrective information to healthcare practitioners;
- require us to enter into a consent decree, which can include imposition of various fines, reimbursements for inspection costs, required due dates for specific actions and penalties for noncompliance;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw regulatory approval;
- suspend any ongoing clinical studies;
- refuse to approve pending applications or supplements to applications filed by us;
- suspend or impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products, refuse to permit the import or export of products, or require us to initiate a product recall.

The occurrence of any event or penalty described above may inhibit our ability to commercialize our products and generate revenues.

Advertising and promotion of any product candidate that obtains approval in the United States will be heavily scrutinized by the FDA, the Department of Justice, or the DOJ, the Office of Inspector General of the Department of Health and Human Services, or HHS, state attorneys general, members of Congress and the public. Additionally, advertising and promotion of any product candidate that obtains approval outside of the United States will be heavily scrutinized by comparable foreign regulatory authorities. For example, in the event PINTA 745 obtains regulatory approval, we believe these authorities will closely monitor the use of this product candidate to determine whether it is being used impermissibly as a muscle-builder by athletes and others. Violations, including actual or alleged promotion of our products for unapproved or off-label uses, are subject to enforcement letters, inquiries and investigations, and civil and criminal sanctions by the FDA. Any actual or alleged failure to comply with labeling and promotion requirements may have a negative impact on our business.

In the United States, engaging in impermissible promotion of our products for off-label uses can also subject us to false claims litigation under federal and state statutes, which can lead to civil and criminal penalties and fines and agreements that would materially restrict the manner in which we promote or distribute our drug products. These false claims statutes include the federal False Claims Act, which allows any individual to bring a lawsuit against a pharmaceutical company on behalf of the federal government alleging submission of false or fraudulent claims, or causing to present such false or fraudulent claims, for payment by a federal program such as Medicare or Medicaid. If the government prevails in the lawsuit, the individual will share in any fines or settlement funds. Since 2004, these False Claims Act lawsuits against pharmaceutical companies have increased significantly in volume and breadth, leading to several substantial civil and criminal settlements based on certain sales practices promoting off-label drug uses. This growth in litigation has increased the risk that a pharmaceutical company will have to defend a false claim action, pay settlement fines or restitution, agree to comply with burdensome reporting and compliance obligations, and be excluded from the Medicare, Medicaid and other federal and state healthcare programs. If we do not lawfully promote our approved products, we may become subject to such litigation and, if we are not successful in defending against such actions, those actions could compromise our ability to become profitable or adversely affect our ability to operate our business.

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

Concurrent with the license of our existing product candidates, we acquired manufacturing process know-how and certain intermediates, as well as certain supplies intended for clinical use, from Amgen and MSK. We are in the process of planning for the manufacture of additional drug substance and drug product for our preclinical and clinical studies using the know-how and supplies we received from Amgen and MSK. Our CMOs will need to conduct significant development work to prepare each of our product candidates for studies, trials and commercial readiness.

The processes by which our product candidates are manufactured were initially developed by Amgen and MSK for clinical purposes. We intend to evolve these existing processes for more advanced clinical trials or commercialization. Developing commercially viable manufacturing processes is a difficult and uncertain task, and there are risks associated with scaling to the level required for advanced clinical trials or commercialization, including cost overruns, potential problems with process scale-out, process reproducibility, stability issues, lost consistency and timely availability of reagents or raw materials. The manufacturing facilities in which our product candidates will be made could be adversely affected by earthquakes and other natural disasters, equipment failures, labor shortages, power failures, and numerous other factors.

Additionally, the process of manufacturing biologics and cellular therapies is complex, highly regulated and subject to several risks, including but not limited to:

- the process of manufacturing biologics and cellular therapies is extremely susceptible to product loss due to contamination, equipment failure or improper installation or operation of equipment, or vendor or operator error. Even minor deviations from normal manufacturing processes for any of our product candidates could result in reduced production yields, product defects, and other supply disruptions. Product defects can also occur unexpectedly. For example, in April 2014, we encountered a small number of cracked vials in certain STM 434 drug product lots. If microbial, viral, or other contaminations are discovered in our product candidates or in the manufacturing facilities in which our product candidates are made, such manufacturing facilities may need to be closed for an extended period of time to allow us to investigate and remedy the contamination; and
- because EBV-CTL, CMV-CTL and WT1-CTL are manufactured from the blood of third-party donors, the process of developing products that can be commercialized may be particularly challenging, even if they otherwise prove to be safe and effective. The manufacture of these product candidates involves complex processes. Some of these processes require specialized equipment and highly skilled and trained personnel. The process of manufacturing these product candidates will be susceptible to additional risks, given the need to maintain aseptic conditions throughout the manufacturing process. Contamination in the donor material or ingress of microbiological material at any point in the process may result in contaminated and unusable product. Furthermore, the product ultimately consists of many individual cell lines, each with a different HLA profile. As a result, the selection and distribution of the appropriate cell line for therapeutic use in a patient will require close coordination between clinical and manufacturing personnel.

Any adverse developments affecting manufacturing operations for our product candidates may result in shipment 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 our products could damage our reputation and the reputation of our products among physicians, healthcare payors, patients or the medical community, including major operators of dialysis and cancer clinics, which could adversely affect our ability to operate our business and our results of operations.

We may not successfully identify, acquire, develop or commercialize new potential product candidates.

Part of our business strategy is to expand our product candidate pipeline by identifying and validating new product candidates, which we may develop ourselves, in-license or otherwise acquire from others. In addition, in the event that our existing product candidates do not receive regulatory approval or are not successfully commercialized, then the success of our business will depend on our ability to expand our product pipeline through in-licensing or other acquisitions. We may be unable to identify relevant product candidates. If we do identify such product candidates, we may be unable to reach acceptable terms with any third party from which we desire to in-license or acquire them.

We may not realize the benefits of strategic alliances that we may form in the future.

We may form strategic alliances, create joint ventures or collaborations or enter into licensing arrangements with third parties that we believe will complement or augment our existing business. These relationships, or those like them, may require us to incur nonrecurring and other charges, increase our near- and long-term expenditures, issue securities that dilute our existing stockholders or disrupt our management and business. In addition, we face significant competition in seeking appropriate strategic alliances and the negotiation process is time-consuming and complex. Moreover, we may not be successful in our efforts to establish a strategic alliance or other alternative arrangements for any future product candidates and programs because our research and development pipeline may be insufficient, our product candidates and programs may be deemed to be at too early a stage of development for collaborative effort and third parties may not view our product candidates and programs as having the requisite potential to demonstrate safety and efficacy. If we license products or acquire businesses, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture. We cannot be certain that, following a strategic transaction or license, we will achieve the revenues or specific net income that justifies such transaction. Any delays in entering into new strategic alliances agreements related to our product candidates could also delay the development and commercialization of our product candidates and reduce their competitiveness even if they reach the market.

Risks Related to Our Dependence on Third Parties

We rely on third parties to conduct our preclinical and clinical studies and clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, or if we lose any of our CROs, we may not be able to obtain regulatory approval for or commercialize our product candidates on a timely basis, if at all.

We have relied upon and plan to continue to rely upon third-party CROs and contractors to monitor and manage data for our ongoing preclinical and clinical programs. For example, our collaborating investigators at MSK manage the conduct of the ongoing clinical studies and trials of EBV-CTL, CMV-CTL and WT1-CTL as well as perform the analysis, publication and presentation of data and results related to these programs. We are also relying on CROs to perform similar services for our ongoing clinical trial of PINTA 745 and clinical study of STM 434. We have also relied on studies previously conducted by Amgen and MSK. We rely on these parties for the execution of our preclinical and clinical trials, and we control only some aspects of their activities. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol and legal, regulatory and scientific standards, and our reliance on the CROs does not relieve us of our regulatory responsibilities. We also rely on third parties to assist in conducting our preclinical studies in accordance with Good Laboratory Practices, or GLP, and the Animal Welfare Act requirements. We and our CROs are required to comply with federal regulations, GCP, which are international standards meant to protect the rights and health of patients that are enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area and comparable foreign regulatory authorities for all of our products in clinical development, and cGTP, which are standards designed to ensure that cell and tissue based products are manufactured in a manner designed to prevent the introduction, transmission and spread of communicable diseases. Regulatory authorities enforce GCP and cGTP through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of our CROs fail to comply with applicable GCP or cGTP, 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 regulatory applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials comply with GCP or cGTP requirements. In addition, our clinical trials must be conducted with product produced under cGMP requirements. We are also required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, clinicaltrials.gov, within a specified timeframe. Failure to comply with these regulations may require us to repeat preclinical and clinical trials, which would delay the regulatory approval process and result in adverse publicity.

Our CROs are not our employees, and except for remedies available to us under our agreements with such CROs, we cannot control whether or not they devote sufficient time and resources, including experienced staff, to our ongoing clinical, nonclinical and preclinical programs. They may also have relationships with other entities, some of which may be our competitors. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. For example, there was an error in the randomization of patients and inventory distribution to our clinical sites for our Phase 2 clinical trial for PINTA 745, resulting in the unblinding of the initial six patients and a restart of the trial. CRO or contractor errors could cause our results of operations and the commercial prospects for our product candidates to be harmed, our costs to increase and our ability to generate revenues to be delayed.

Our internal capacity for clinical trial execution and management is limited and therefore we have relied on third parties. Outsourcing these functions involves risk that third parties may not perform to our standards, may not produce results or data in a timely manner or may fail to perform at all. For example, in July 2014, we became aware of a draft report for a preclinical study conducted with STM 217, a compound similar to STM 434 that we also licensed from Amgen. Results from this study led to the amendment of our planned clinical trial for STM 434. Other data from studies previously conducted by Amgen or MSK may emerge in the future. In addition, the use of third-party service providers requires us to disclose our proprietary information to these parties, which could increase the risk that this information will be misappropriated. We currently have a small number of employees, which limits the internal resources we have available to identify and monitor our third-party providers. To the extent we are unable to identify and successfully manage the performance of third-party service providers in the future, our business may be adversely affected. Though we carefully manage our relationships with our CROs, there can be no assurance that we will not encounter challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition and prospects.

Our CROs have the right to terminate their agreements with us in the event of an uncured material breach. In addition, some of our CROs have an ability to terminate their respective agreements with us if it can be reasonably demonstrated that the safety of the subjects participating in our clinical trials warrants such termination, if we make a general assignment for the benefit of our creditors or if we are liquidated. Identifying, qualifying and managing performance of third-party service providers can be difficult, time consuming and cause delays in our development programs. In addition, there is a natural transition period when a new CRO commences work and the new CRO may not provide the same type or level of services as the original provider. If any of our relationships with our third-party CROs terminate, we may not be able to enter into arrangements with alternative CROs or to do so on commercially reasonable terms.

We have no experience manufacturing our product candidates on a clinical or commercial scale and have no manufacturing f acility. We are dependent on third parties for the manufacturing of our product candidates and our supply chain, and if we experience problems with any of these third parties, the manufacturing of our product candidates could be delayed.

We do not own or operate facilities for the manufacturing of our product candidates. We currently have no commitments to build our own clinical or commercial scale manufacturing capabilities. We currently rely on single source CMOs for the production of the product candidates we have licensed from Amgen and on single source suppliers of some of the materials incorporated in these product candidates. In the case of EBV-CTL, CMV-CTL and WT1-CTL, we rely on MSK for the production of these product candidates and acquisition of the materials incorporated in these product candidates. To meet our projected needs for clinical supplies to support our activities through regulatory approval and commercial manufacturing of PINTA 745, STM 434 and the other product candidates we have licensed from Amgen, the CMOs with whom we currently work will need to increase the scale of production and demonstrate comparability of the material produced by these CMOs to the material that was previously produced by Amgen. To meet our projected needs for clinical and commercial materials to support our activities through regulatory approval and commercial manufacturing of EBV-CTL, CMV-CTL and WT1-CTL, we will need to transition the manufacturing of such materials to a CMO or our own facility, and such CMOs or we will need develop relationships with suppliers of critical starting materials, increase the scale of production and demonstrate comparability of the material produced at these facilities to the material that was previously produced by MSK. Moreover, we will need to transfer the manufacturing know-how developed by and housed at MSK. If we are not able to successfully transfer this know-how our ability to manufacture EBV-CMV, CMV-CTL and WT1-CTL may be negatively impacted. We need to identify CMOs for the production of EBV-CTL, CMV-CTL and WT1-CTL and may need to identify additional CMOs for continued production of supply for all of our product candidates. In addition, given the manufacturing process for our T-cell product candidates, the number of CMOs who possess the requisite skill and capability to manufacture our T-cell product candidates is limited. We have not yet identified alternate suppliers in the event the current CMOs that we utilize are unable to scale production, or if we otherwise experience any problems with them. Manufacturing biologic drugs is complicated and tightly regulated by the FDA and comparable regulatory authorities around the world, and although alternative third-party suppliers with the necessary manufacturing and regulatory expertise and facilities exist, it could be expensive and take a significant amount of time to arrange for alternative suppliers, transfer manufacturing procedures to these alternative suppliers, and demonstrate comparability of material produced by such new suppliers. New manufacturers of any product would be required to qualify under applicable regulatory requirements. These manufacturers may not be able to manufacture our compounds at costs, or in quantities, or in a timely manner necessary to complete development of our product candidates or make commercially successful products. If we are unable to arrange for alternative third-party manufacturing sources, or to do so on commercially reasonable terms or in a timely manner, we may not be able to complete development of our product candidates, or market or distribute them. In addition, should the FDA not agree with our physical quality specifications and comparability assessments for these materials, further clinical development of our product candidate could be substantially delayed and we would incur substantial additional expenses.

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured product candidates ourselves, including reliance on the third party for regulatory compliance and quality assurance, the possibility that the third-party manufacturer does not maintain the financial resources to meet its obligations under the manufacturing agreement, the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control, including a failure to synthesize and manufacture our product candidates or any products we may eventually commercialize in accordance with our specifications, misappropriation of our proprietary information, including our trade secrets and know-how, and the possibility of termination or nonrenewal of the agreement by the third party, based on its own business priorities, at a time that is costly or damaging to us. In addition, the FDA and other regulatory authorities require that our product candidates and any products that we may eventually commercialize be manufactured according to GMP, and GTP-and similar foreign standards. These requirements include, among other things, quality control, quality assurance and the maintenance of records and documentation. The FDA or similar foreign regulatory agencies may also implement new standards at any time, or change their interpretations and enforcement of existing standards for manufacture, packaging or testing of products. We have little control over our manufacturers' compliance with these regulations and standards. Any failure by our third-party manufacturers to comply with GMP or failure to scale up manufacturing processes, including any failure to deliver sufficient quantities of product candidates in a timely manner, could lead to a delay in, or failure to obtain, regulatory approval of any of our product candidates. In addition, such failure could be the basis for the FDA to issue a warning letter, withdraw approvals for product candidates previously granted to us, or take other regulatory or legal action, including recall or seizure of outside supplies of the product candidate, total or partial suspension of production, suspension of ongoing clinical trials, refusal to approve pending applications or supplemental applications, detention or product, refusal to permit the import or export of products, injunction or imposing civil and criminal penalties.

Any significant disruption in our supplier relationships could harm our business. Any significant delay in the supply of a product candidate or its key materials for an ongoing clinical study could considerably delay completion of our clinical studies, product testing and potential regulatory approval of our product candidates. If our manufacturers or we are unable to purchase these key materials after regulatory approval has been obtained for our product candidates, the commercial launch of our product candidates could be delayed or there could be a shortage in supply, which could impair our ability to generate revenues from the sale of our product candidates.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain sufficient intellectual property protection for our product candidates, or if the scope of the intellectual property protection is not sufficiently broad, our ability to commercialize our product candidates successfully and to compete effectively may be adversely affected.

We rely upon a combination of patents, trade secrets and confidentiality agreements to protect the intellectual property related to our technology and product candidates. For our two most advanced molecularly targeted product candidates, PINTA 745 and STM 434, we own or license a number of issued patents and pending patent applications covering the product candidates' compositions of matter and methods of use. For PINTA 745, the expected expiration dates range from 2026 to 2035 for US patents and patent applications, if issued, and from 2023 to 2035 for patents and patent applications, if issued, in jurisdictions outside the United States, exclusive of possible patent term extensions. For STM 434, the expected expiration dates range from 2027 through 2035 for US patents and patent applications, if issued, and from 2026 through 2035 for patents and patent applications, if issued, in jurisdictions outside the United States, exclusive of possible patent term extensions. The T-cell product candidates and platform technology we have licensed from MSK are protected primarily as confidential know-how and trade secrets. If we do not adequately protect our intellectual property, competitors may be able to use our technologies and erode or negate any competitive advantage we may have, which could harm our business and ability to achieve profitability. The patentability of inventions and the validity, enforceability and scope of patents in the biotechnology field is generally uncertain because it involves complex legal, scientific and factual considerations, and it has in recent years been the subject of significant litigation. Moreover, the standards applied by the US Patent and Trademark Office, or USPTO, and non-US patent offices in granting patents are not always applied uniformly or predictably. For example, there is no uniform worldwide policy regarding patentable subject matter or the scope of claims allowable in biotechnology patents.

Consequently, the patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates in the United States or in other countries for many reasons. There is no assurance that all potentially relevant prior art relating to our patents and patent applications has been found. We may be unaware of prior art that could be used to invalidate an issued patent or prevent our pending patent applications from issuing as patents. There also may be prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim of one of our patents or patent applications, which may, nonetheless, ultimately be found to affect the validity or enforceability of such claim.

Even if patents have issued or do successfully issue from patent applications, and even if such patents cover our product candidates, third parties may challenge the validity, enforceability or scope thereof, which may result in such patents being narrowed, invalidated or held to be unenforceable. No assurance can be given that if challenged, our patents would be declared by a court to be valid or enforceable. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property, provide exclusivity for our product candidates or prevent others from designing around our claims. The possibility exists that others will develop products on an independent basis which have the same effect as our product candidates and which do not infringe our patents or other intellectual property rights, or that others will design around the claims of patents that we have had issued that cover our product candidates. If the breadth or strength of protection provided by the patents and patent applications we hold, license or pursue with respect to our product candidates is threatened, it could threaten our ability to commercialize our product candidates. In addition, 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. Any of these outcomes could have an adverse impact on our business.

If patent applications that we hold or in-license with respect to our technology or product candidates fail to issue, if their breadth or strength of protection is threatened, or if they fail to provide meaningful exclusivity for our product candidates, it could dissuade companies from collaborating with us. We have recently filed several patent applications covering our product candidates. We cannot offer any assurances about which, if any, patents will be issued with respect to these pending patent applications, the breadth of any such patents, whether any issued patents will be found invalid and unenforceable or will be threatened by third parties. Any successful challenge to these patents or any other patents owned by or exclusively licensed to us could deprive us of rights necessary for the successful commercialization of any product candidate that we or our collaborators may develop. Because patent applications in the United States and most other countries are confidential for a period of time after filing, and some remain so until issued, we cannot be certain that we were the first to file any patent application related to a product candidate. Furthermore, if third parties have filed such patent applications, an interference proceeding in the United States can be initiated by the USPTO or a third party to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. Similarly, we could become involved in derivation proceedings before the USPTO to determine inventorship with respect to our patent applications. We may also become involved in similar opposition proceedings in the European Patent Office or counterpart offices in other jurisdictions regarding our intellectual property rights. In addition, patents have a limited lifespan. In the United States, the natural expiration of a patent generally occurs 20 years after it is filed. Although various extensions may be available if certain conditions are met, the life of a patent and the protection it affords is limited. If we encounter delays in our clinical trials or in obtaining regulatory approvals, the period of time during which we could exclusively market any of our product candidates under patent protection, if approved, could be reduced. Even if patents covering our product candidates are obtained, once the patent life has expired for a product, we may be vulnerable to competition from biosimilar products. Any loss of patent protection could have a material adverse impact on our business. We may be unable to prevent competitors from entering the market with a product that is similar or identical to our product candidates, which could harm our business and ability to achieve profitability.

Furthermore, the research resulting in certain of our licensed patent rights and technology was funded by the US government. As a result, the government may have certain rights, or march-in rights, to such patent rights and technology. When new technologies are developed with government funding, the government generally obtains certain rights in any resulting patents, including a non-exclusive license authorizing the government to use the invention for non-commercial purposes. These rights may permit the government to disclose our confidential information to third parties and to exercise march-in rights to use or allow third parties to use our licensed technology. The government can exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of the government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations or to give preference to US industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any exercise by the government of such rights could harm our competitive position, business, results of operations, financial condition and future prospects.

If we are sued for infringing the intellectual property rights of third parties, such litigation could be costly and time-consuming and could prevent or delay our development and commercialization efforts.

Our commercial success depends, in part, on us and our collaborators not infringing the patents and proprietary rights of third parties. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interference or derivation proceedings, oppositions, *inter partes* reexamination and review proceedings before the USPTO and corresponding non-US patent offices. Numerous US and non-US issued patents and pending patent applications owned by third parties exist in the fields in which we are developing and may develop our product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may be subject to claims of infringement of third parties' patent rights as it may not always be clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform or predictable.

Third parties may assert infringement claims against us based on existing or future intellectual property rights, alleging that we are employing their proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacturing of our product candidates that we failed to identify. For example, applications filed before November 29, 2000, and certain applications filed after that date that will not be filed outside the United States, remain confidential until issued as patents. Except for the preceding exceptions, patent applications in the United States and elsewhere are generally published only after a waiting period of approximately 18 months after the earliest filing date. Therefore, patent applications covering our product candidates could have been filed by others without our knowledge. In addition, pending patent applications that have been published, including some of which we are aware, could be later amended in a manner that could cover our product candidates or their use or manufacture. We may analyze patents or patent applications of our competitors that we believe are relevant to our activities and believe that we are free to operate in relation to any of our product candidates, but our competitors may obtain issued claims, including in patents we consider to be unrelated, which may block our efforts or potentially result in any of our product candidates or our activities infringing such claims. If we are sued for patent infringement, we would need to demonstrate that our product candidates, products and methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid, and we may not be able to do this. Proving that a patent is invalid is difficult. For example, in the United States, proving invalidity requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents. Even if we are successful in these proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted, which could have a material adverse effect on us. If any issued third-party patents were held by a court of competent jurisdiction to cover aspects of our materials, formulations, methods of manufacture or methods for treatment, we could be forced, including by court order, to cease developing, manufacturing or commercializing the relevant product candidate until such patent expired. Alternatively, we may be required to obtain a license from such third party in order to use the infringing technology and to continue developing, manufacturing or marketing the infringing product candidate. However, we may not be able to obtain any required license on commercially reasonably terms, or at all. Even if we were able to obtain a license, the rights may be nonexclusive, which could result in our competitors gaining access to the same intellectual property licensed to us. Ultimately, we could be prevented from commercializing a product candidate, or be forced to cease some aspect of our business operations, if, as a result of actual or threatened patent infringement claims, we are unable to enter into licenses on acceptable terms. This could harm our business significantly.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize one or more of our product candidates. Defending against claims of patent infringement or misappropriation of trade secrets could be costly and time consuming, regardless of the outcome. Thus, even if we were to ultimately prevail, or to settle at an early stage, such litigation could burden us with substantial unanticipated costs. In addition, litigation or threatened litigation could result in significant demands on the time and attention of our management team, distracting them from the pursuit of other company business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent, or to redesign our infringing product candidates which may be impossible or require substantial time and monetary expenditure. We may also elect to enter into license agreements in order to settle patent infringement claims prior to litigation, and any such license agreement may require us to pay royalties and other fees that could be significant.

We may face claims that we misappropriated the confidential information or trade secrets of a third party. If we are found to have misappropriated a third party's trade secrets, we may be prevented from further using such trade secrets, which could limit our ability to develop our product candidates. We are not aware of any material threatened or pending claims related to these matters, but in the future 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. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management. During the course of any patent or other intellectual property litigation, there could be public announcements of the results of hearings, rulings on motions, and other interim proceedings in the litigation. If securities analysts or investors regard these announcements as negative, the perceived value of our product candidates, programs or intellectual property could be diminished. Accordingly, the market price of our common stock may decline.

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

Filing, prosecuting, enforcing and defending patents on all of our product candidates in all countries throughout the world would be prohibitively expensive. Our or our licensors' intellectual property rights in certain countries outside the United States may be less extensive than those in the United States. In addition, the laws of certain foreign countries do not protect intellectual property rights to the same extent as 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 countries outside the United States, or from selling or importing infringing products made using our and our licensors' inventions in and into the United States or other jurisdictions. Competitors may use our and our licensors' technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we and our licensors have patent protection but where enforcement is not as strong as that in the United States. These infringing products may compete with our product candidates in jurisdictions where we or our licensors have no issued patents and our patent claims and 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 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 and our licensors to stop the infringement of our and our licensors' patents or marketing of competing products in violation of our and our licensors' proprietary rights generally. Proceedings to enforce our and our licensors' patent rights in foreign jurisdictions could result in substantial costs and divert our attention from other aspects of our business, could put our and our licensors' patents at risk of being invalidated or interpreted narrowly, could put 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 even if we or our licensors are successful the damages or other remedies awarded, if any, may not be commercially meaningful.

We have in-licensed a significant portion of our intellectual property from Amgen and MSK. If we breach any of our license agreements with Amgen or MSK, we could lose the ability to continue the development and potential commercialization of one or more of our product candidates.

We hold rights under a number of license agreements with Amgen and MSK that are important to our business. Our discovery and development platform is built, in part, around patent rights exclusively in-licensed from Amgen and MSK. The Amgen agreements generally grant us an exclusive (except as to the licenses to Amgen know-how, which are non-exclusive and limited as to their field of use), worldwide (except with regard to PINTA 745 in Japan, which was previously licensed to Takeda Pharmaceutical Company Limited) license to research, develop, improve, make, use, offer for sale, sell, import, export or otherwise exploit several classes of novel compounds, including PINTA 745 and STM 434. The MSK agreement generally grants us an exclusive license to research, develop, make, use, offer for sale, sell and import, EBV-CTL, CMV-CTL and WT1-CTL. Under our existing Amgen and MSK license agreements, we are subject to various obligations, including diligence obligations with respect to development and commercialization activities, payment obligations upon achievement of certain milestones and royalties on product sales, as well as other material obligations. If there is any conflict, dispute, disagreement or issue of nonperformance between us and Amgen or MSK regarding our rights or obligations under the license agreements, including any such conflict, dispute or disagreement arising from our failure to satisfy diligence or payment obligations under any such agreement, we may be liable to pay damages and Amgen or MSK may have a right to terminate the affected license. The loss of any or all of our license agreements with Amgen or our license agreement with MSK could materially adversely affect our ability to proceed to utilize the affected intellectual property in our drug discovery and development efforts, our ability to enter into future collaboration, licensing and/or marketing agreements for one or more affected product candidates and our ability to commercialize the affected product candidates. The risks described elsewhere pertaining to our patents and other intellectual property rights also apply to the intellectual property rights that we license, and any failure by us or our licensors to obtain, maintain and enforce these rights could have a material adverse effect on our business.

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 adverse effect on the success of our business and on our stock price.

Third parties may infringe our patents, the patents of our licensors, or misappropriate or otherwise violate our or our licensors' intellectual property rights. Our and our licensors' patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications, and then only to the extent the issued claims cover the technology. In the future, we or our licensors may elect to initiate legal proceedings to enforce or defend our or our licensors' intellectual property rights, to protect our or our licensors' trade secrets or to determine the validity or scope of intellectual property rights we own or control. Any claims that we assert against perceived infringers could also provoke these parties to assert counterclaims against us alleging that we infringe their intellectual property rights. In addition, 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. The proceedings can be expensive and time-consuming. Many of our or our licensors' adversaries in these proceedings may have the ability to dedicate substantially greater resources to prosecuting these legal actions than we or our licensors can. Accordingly, despite our or our licensors' efforts, we or our licensors may not be able to prevent third parties from infringing upon or misappropriating intellectual property rights we own or control, particularly in countries where the laws may not protect our rights as fully as in the United States. 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, in whole or in part, or may refuse to stop the other party from using the technology at issue on the grounds that our or our licensors' patents do not cover the technology in question. An adverse result in any litigation proceeding could put one or more of our or our licensors' patents at risk of being invalidated, held unenforceable or interpreted narrowly.

Interference or derivation proceedings provoked by third parties, brought by us or our licensors or collaborators, or brought by the USPTO or any non-US patent authority may be necessary to determine the priority of inventions or other matters of inventorship with respect to our patents or patent applications. We may also become involved in other proceedings, such as reexamination or opposition proceedings, *inter partes* review or other preissuance or post-grant proceedings in the USPTO or its foreign counterparts relating to our intellectual property or the intellectual property rights of others. An unfavorable outcome in any such proceeding could require us or our licensors to cease using the related technology and commercializing our product candidates, or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us or our licensors a license on commercially reasonable terms if any license is offered at all. Even if we or our licensors obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us or our licensors. In addition, if the breadth or strength of protection provided by our or our licensors' patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates. Even if we successfully defend such litigation or proceeding, we may incur substantial costs and it may distract our management and other employees. We could be found liable for monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed a patent.

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. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of shares of our common stock.

Changes in patent law could diminish the value of patents in general, thereby impairing our ability to protect our product candidates.

As is the case with other biotechnology and pharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involves both technological and legal complexity, and obtaining and enforcing biopharmaceutical patents is costly, time-consuming, and inherently uncertain. The 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 future decisions by the US Congress, or Congress, the federal courts and the USPTO, the laws and regulations governing patents could change in unpredictable ways that may weaken our and our licensors' ability to obtain new patents or to enforce existing patents and patents we and our licensors or collaborators 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. On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to US patent law. These include provisions that affect the way patent applications are prosecuted and may also affect patent litigation. The USPTO recently developed new regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and in particular, the first to file provisions, only became effective on March 16, 2013. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our or our licensors' patent applications and the enforcement or defense of our or our licensors' issued patents, all of which could have a material adverse effect on our business and financial condition.

If we are unable to protect the confidentiality of our trade secrets and other proprietary information, the value of our technology could be materially adversely affected and our business could be harmed.

In addition to seeking the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce, and other elements of our technology, discovery and development processes that involve proprietary know-how, information or technology that is not covered by patents. The T-cell product candidates and platform technology we have licensed from MSK are protected primarily as confidential know-how and trade secrets. Any disclosure to or misappropriation by third parties of our confidential proprietary information could enable competitors to quickly duplicate or surpass our technological achievements, including by enabling them to develop and commercialize products substantially similar to or competitive with our EBV-CTL, CMV-CTL or WT1 product candidates, thus eroding our competitive position in the market. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements and invention assignment agreements with our employees, consultants, and outside scientific advisors, contractors and collaborators. These agreements are designed to protect our proprietary information. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, or outside scientific advisors might intentionally or inadvertently disclose our trade secrets or confidential, proprietary information to competitors. In addition, competitors may otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. If any of our confidential proprietary information were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such competitor from using that technology or information to compete with us, which could harm our competitive position.

Enforcing a claim that a third party illegally obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, the laws of certain foreign countries do not protect proprietary rights such as trade secrets to the same extent or in the same manner as the laws of the United States. Misappropriation or unauthorized disclosure of our trade secrets to third parties could impair our competitive advantage in the market and could materially adversely affect our business, results of operations and financial condition.

Risks Related to Commercialization of Our Product Candidates

Our commercial success depends upon attaining significant market acceptance of our product candidates, if approved, among physicians, patients, healthcare payors and major operators of dialysis and cancer clinics.

Even if we obtain regulatory approval for any of our product candidates that we may develop or acquire in the future, the product may not gain market acceptance among physicians, healthcare payors, patients or the medical community, including major operators of dialysis and cancer clinics. Market acceptance of any of our product candidates for which we receive approval depends on a number of factors, including:

- the efficacy and safety of such product candidates as demonstrated in clinical trials;
- the clinical indications for which the product candidate is approved;
- acceptance by physicians, major operators of cancer and dialysis clinics and patients of the drug as a safe and effective treatment;
- the adoption of novel cellular therapies by physicians, hospitals and third-party payors;
- the potential and perceived advantages of product candidates over alternative treatments;
- the safety of product candidates seen in a broader patient group, including its use outside the approved indications;
- any restrictions on use together with other medications;
- the prevalence and severity of any side effects;

- product labeling or product insert requirements of the FDA or other regulatory authorities;
- the timing of market introduction of our products as well as competitive products;
- the development of manufacturing and distribution processes for our novel T-cell product candidates;
- the cost of treatment in relation to alternative treatments;
- the availability of coverage and adequate reimbursement and pricing by third-party payors and government authorities;
- relative convenience and ease of administration; and
- the effectiveness of our sales and marketing efforts and those of our collaborators.

If any of our product candidates are approved but fail to achieve market acceptance among physicians, patients, healthcare payors or major operators of dialysis and cancer clinics, we will not be able to generate significant revenues, which would compromise our ability to become profitable. In particular, the dialysis industry is dominated by two companies, DaVita Healthcare Partners and Fresenius. In the event PINTA 745 fails to be accepted by either of these companies, our ability to generate revenues from PINTA 745 and become profitable could be adversely affected.

Even if we are able to commercialize our product candidates, the products may not receive coverage and adequate reimbursement from third-party payors in the United States and in other countries in which we seek to commercialize our products, which could harm our business.

Our ability to commercialize any product successfully will depend, in part, on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations.

Government authorities and third-party payors, such as private health insurers and health maintenance organizations, determine which medications they will cover and establish reimbursement levels. A primary trend in the healthcare industry is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. Third-party payors may also seek additional clinical evidence, beyond the data required to obtain regulatory approval, demonstrating clinical benefits and value in specific patient populations before covering our products for those patients. We cannot be sure that coverage and adequate reimbursement will be available for any product that we commercialize and, if reimbursement is available, what the level of reimbursement will be. Coverage and reimbursement may impact the demand for, or the price of, any product candidate for which we obtain regulatory approval. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize any product candidate for which we obtain regulatory approval.

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

Recently enacted and future legislation, including potentially unfavorable pricing regulations or other healthcare reform initiatives, may increase the difficulty and cost for us to obtain regulatory approval of and commercialize our product candidates and affect the prices we may obtain.

The regulations that govern, among other things, regulatory approvals, coverage, pricing and reimbursement for new drug products vary widely from country to country. In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay regulatory approval of our product candidates, restrict or regulate post-approval activities and affect our ability to successfully sell any product candidates for which we obtain regulatory approval.

In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or Medicare Modernization Act, changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for physician- administered drugs. In particular, all Medicare payments for dialysis treatments to ESRD patients are now made under a single bundled payment rate that provides a fixed payment rate to encompass all goods and services provided during the dialysis treatment, including pharmaceuticals that were historically separately reimbursed to the dialysis providers, irrespective of the level of pharmaceuticals administered or additional services performed. Most lab services that used to be paid directly to laboratories are also included in the bundled payment. Unless we are able to secure an exemption, PINTA 745 may be subject to the bundled payment system. In recent years, Congress has considered further reductions in Medicare reimbursement for drugs administered by physicians. The Center for Medicare and Medicaid Services, or CMS, the agency that runs the Medicare program, also has the authority to revise reimbursement rates, including under the bundled payment system, and to implement coverage restrictions for some drugs. Cost reduction initiatives and changes in coverage implemented through legislation or regulation could decrease utilization of and reimbursement for any approved products, which in turn would affect the price we can receive for those products. While the Medicare Modernization Act and Medicare regulations apply only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in reimbursement that results from federal legislation or regulation may result in a similar reduction in payments from private payors.

In March 2010, President Obama signed into law the Patient Protection and Affordable Care Act and the Health Care and Education Affordability Reconciliation Act of 2010, or the Affordable Care Act, a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for healthcare and health insurance industries, impose new taxes and fees on pharmaceutical and medical device manufacturers and impose additional health policy reforms. The Affordable Care Act expanded manufacturers' rebate liability to include covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations, increased the minimum rebate due for innovator drugs from 15.1% of average manufacturer price, or AMP, to 23.1% of AMP, and capped the total rebate amount for innovator drugs at 100% of AMP. The Affordable Care Act and subsequent legislation also changed the definition of AMP. Furthermore, the Affordable Care Act imposes a significant annual, nondeductible fee on companies that manufacture or import certain branded prescription drug products. Substantial new provisions affecting compliance have also been enacted, which may affect our business practices with healthcare practitioners, and a significant number of provisions are not yet, or have only recently become, effective. Although it is too early to determine the effect of the Affordable Care Act, it appears likely to continue the pressure on pharmaceutical pricing, especially under the Medicare program, and may also increase our regulatory burdens and operating costs.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. More recently, in August 2011, the President signed into law the Budget Control Act of 2011, which, among other things, creates the Joint Select Committee on Deficit Reduction to recommend to Congress proposals in spending reductions. The Joint Select Committee did not achieve a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, starting in 2013. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. In March 2013, the President signed an executive order implementing sequestration, and in April 2013, the 2% Medicare reductions went into effect. These new laws may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on our customers and accordingly, our financial operations. 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 the 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 the United States, the European Union and other potentially significant markets for our product candidates, government authorities and third-party payors are increasingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and therapies, which has resulted in lower average selling prices. Furthermore, the increased emphasis on managed healthcare in the United States and on country and regional pricing and reimbursement controls in the European Union will put additional pressure on product pricing, reimbursement and usage, which may adversely affect our future product sales and results of operations. These pressures can arise from rules and practices of managed care groups, judicial decisions and governmental laws and regulations related to Medicare, Medicaid and healthcare reform, pharmaceutical reimbursement policies and pricing in general.

Price controls may be imposed in foreign markets, which may adversely affect our future profitability.

In some countries, particularly member states of the European Union, the pricing of prescription drugs is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after receipt of regulatory approval for a product. In addition, there can be considerable pressure by governments and other stakeholders on prices and reimbursement levels, including as part of cost containment measures. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various European Union member states and parallel distribution, or arbitrage between low-priced and high-priced member states, can further reduce prices. In some countries, we or our collaborators may be required to conduct a clinical trial or other studies that compare the cost-effectiveness of our product candidates to other available therapies in order to obtain or maintain reimbursement or pricing approval. Publication of discounts by third-party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. 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 adversely affected.

We face substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than we do.

We face competition from numerous pharmaceutical and biotechnology enterprises, as well as from academic institutions, government agencies and private and public research institutions for our current product candidates. Our commercial opportunities will be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer side effects or are less expensive than any products that we may develop. Competition could result in reduced sales and pricing pressure on our product candidates, if approved, which in turn would reduce our ability to generate meaningful revenues and have a negative impact on our results of operations. In addition, significant delays in the development of our product candidates could allow our competitors to bring products to market before us and impair any ability to commercialize our product candidates.

Products are currently marketed or used off-label for the muscle wasting-related indications for which the products in our pipeline are being developed, and a number of companies are or may be developing new treatments for muscle wasting indications. These products, as well as promotional efforts by competitors and clinical trial results of competitive products, could significantly diminish any ability to market and sell PINTA 745 and other product candidates focused on muscle wasting-related indications. Today's treatment for protein-energy wasting and cancer cachexia often involves the administration of readily available nutritional supplements and appetite stimulants including, in some jurisdictions, medical marijuana. In addition, there are two commercially available steroids, nandrolone and oxandrolone, that are sometimes prescribed off-label for the treatment of weight loss in cancer patients. A number of companies are developing drug candidates for muscle wasting applications, including, but not limited to: Eli Lilly & Co., which is conducting Phase 1 clinical studies and Phase 2 clinical trials for LY2495655, and Pfizer Inc., which is conducting Phase 1 clinical studies for PF-06252616, both of which are myostatin antibodies, to evaluate their ability to increase and improve muscle mass in various patient populations; Novartis Corporation, which is conducting Phase 1 clinical studies and Phase 2 clinical trials for BYM338, an ActR2B antibody, to evaluate its ability to build muscle in patients with various muscle-wasting conditions; Ligand Pharmaceuticals, which is developing LGD-4033, a selective androgen receptor modulator, for muscle wasting; Regeneron Pharmaceuticals, Inc., which is developing REGN1033, a myostatin antibody, in collaboration with Sanofi-Aventis for sarcopenia; Acceleron Pharma, Inc., which is developing ACE-083, a modified cysteine knot ligand trap of the TGF-ß superfamily, for diseases in which improved muscle strength may provide a clinical benefit, such as inclusion body myositis and certain forms of muscular dystrophy; and GTx, Inc., which is developing ostarine, a selective androgen receptor modulator for cachexia.

There are numerous approved products and therapies for ovarian cancer, and a number of companies are or may be developing new treatments for ovarian cancer and other solid tumors. These therapies, as well as promotional efforts by competitors and clinical trial results of competitive products, could significantly diminish any ability to market and sell STM 434. Approved drug therapies for ovarian cancer include: chemotherapy with platinum compounds such as cisplatin or carboplatin and taxane compounds such as paclitaxel or docetaxel; bevacizumab in combination with a chemotherapy compound such as liposomal doxorubicin, paclitaxel or topotecan; olaparib in patients with deleterious or suspected deleterious germline breast cancer susceptibility gene, known as BRCA, mutated advanced ovarian cancer who have been treated with three or more prior lines of chemotherapy; and hormone therapies including goserelin, leuprolide, tamoxifen, letrozole, anastrozole and exemestane. A number of companies are developing drug candidates for ovarian cancer and other solid tumors, including, but not limited to Genentech/Roche, which is developing bevacizumab (Avastin) and other potential drug therapies.

There currently are no FDA or EMA approved products for the treatment of EBV-LPD. However, some approved products and therapies are used off-label in the treatment of EBV-LPD, such as rituximab and combination chemotherapy regimens. In addition, a number of companies and academic institutions are developing drug candidates for EBV-LPD and other EBV associated diseases including: Cell Medica Ltd., or Cell Medica, which is conducting Phase 2 clinical studies for Cytorex EBV, an autologous EBV specific T-cell therapy in NK/T-cell lymphoma; Adcyte LLC, or Adcyte, which has licensed multi-virus specific T-cells from Baylor University that are currently in clinical trials sponsored by Baylor and ViraCyte, which has licensed virus specific T-cells from Baylor University that are currently in clinical trials sponsored by Baylor.

Drug therapies approved or commonly used for CMV infection include antiviral compounds such as ganciclovir, valganciclovir, cidofovir and foscarnet. In addition, a number of companies and academic institutions are developing drug candidates for CMV infection and other CMV-associated diseases, including: Shire Plc, or Shire, which is conducting Phase 2 clinical trials of maribavir, a UL97 protein kinase inhibitor; Merck & Co. Inc., or Merck, which is conducting Phase 3 clinical trials of letermovir, a CMV terminase inhibitor; Chimerix, Inc., or Chimerix, which is conducting Phase 3 clinical trials for brincidofovir, a lipid conjugated nucleotide analogue of cidofovir; Cell Medica, which is conducting Phase 3 clinical trials for Cytovir CMV, a CMV-specific cell therapy product derived from primary HCT transplant donors; Adcyte, which has licensed multi-virus specific T-cells from Baylor University that are currently in clinical trials sponsored by Baylor and ViraCyte, which has licensed virus specific T-cells from Baylor University that are currently in clinical trials sponsored by Baylor.

Many of the approved or commonly used drugs and therapies for muscle wasting, ovarian cancer, EBV-LPD and CMV are well-established and are widely accepted by physicians, patients and third-party payors. Some of these drugs are branded and subject to patent protection, and other drugs and nutritional supplements are available on a generic basis. Insurers and other third-party payors may encourage the use of generic products or specific branded products. We expect that, if any of these product candidates is approved, it will be priced at a significant premium over competitive generic products. This pricing premium may make it difficult for us to differentiate these products from currently approved or commonly used therapies and impede adoption of our product, which may adversely impact our business. In addition, many companies are developing new therapeutics, and we cannot predict what the standard of care will become as our products continue in clinical development.

Many of our competitors or potential competitors have significantly greater established presence in the market, financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do, and as a result may have a competitive advantage over us. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies and technology licenses complementary to our programs or advantageous to our business.

As a result of these factors, these competitors may obtain regulatory approval of their products before we are able to obtain patent protection or other intellectual property rights, which will limit our ability to develop or commercialize our product candidates. Our competitors may also develop drugs that are safer, more effective, more widely used and cheaper than ours, and may also be more successful than us in manufacturing and marketing their products. These appreciable advantages could render our product candidates obsolete or noncompetitive before we can recover the expenses of development and commercialization.

Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller and other early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific, management and commercial personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our product candidates, we may be unable to generate any revenue.

We do not currently have an organization for the sale, marketing and distribution of pharmaceutical products and the cost of establishing and maintaining such an organization may exceed the cost-effectiveness of doing so. In order to market any products that may be approved by the FDA and comparable foreign regulatory authorities, we must build our sales, marketing, managerial and other non-technical capabilities or make arrangements with third parties to perform these services. There are significant risks involved in building and managing a sales organization, including our ability to hire, retain and incentivize qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel and effectively manage a geographically dispersed sales and marketing team. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of these products. If we are unable to establish adequate sales, marketing and distribution capabilities, whether independently or with third parties, we may not be able to generate product revenues and may not become profitable. We will be competing with many companies that currently have extensive and well-funded sales and marketing operations. Without an internal commercial organization or the support of a third party to perform sales and marketing functions, we may be unable to compete successfully against these more established companies. If we are not successful in commercializing our current or future product candidates either on our own or through collaborations with one or more third parties, our future product revenue will suffer and we would incur significant additional losses.

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

As of June 30, 2015, we had 31 employees. We need to grow the size of our organization in order to support our continued development and potential commercialization of our product candidates. In particular, we will need to add substantial numbers of additional personnel and other resources to support our development and potential commercialization of EBV-CTL, CMV-CTL and WT1-CTL as a result of our recent exercise of our option to license these programs from MSK. As our development and commercialization plans and strategies continue to develop, or as a result of any future acquisitions, our need for additional managerial, operational, manufacturing, sales, marketing, financial and other resources will increase. Our management, personnel and systems currently in place may not be adequate to support this future growth. Future growth would impose significant added responsibilities on members of management, including:

- managing our clinical studies and trials effectively;
- identifying, recruiting, maintaining, motivating and integrating additional employees;
- managing our internal development efforts effectively while complying with our contractual obligations to licensors, licensees, contractors and other third parties;
- improving our managerial, development, operational, information technology, and finance systems; and
- expanding our facilities.

As our operations expand, we will also need to manage additional relationships with various strategic partners, suppliers and other third parties. Our future financial performance and our ability to commercialize our product candidates and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we must be able to manage our development efforts and clinical studies and trials effectively and hire, train and integrate additional management, research and development, manufacturing, administrative and sales and marketing personnel. Our failure to accomplish any of these tasks could prevent us from successfully growing our company.

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

We are highly dependent upon our personnel, including Isaac E. Ciechanover, M.D., our President, Chief Executive Officer and founder, and Christopher Haqq, Ph.D., M.D., our Chief Medical Officer. Our employment agreements with Drs. Ciechanover and Haqq are at-will and do not prevent them from terminating their employment with us at any time. The loss of the services of either of them could impede the achievement of our research, development and commercialization objectives.

Our future growth and success depend on our ability to recruit, retain, manage and motivate our employees. The loss of any member of our senior management team or the inability to hire or retain experienced management personnel could compromise our ability to execute our business plan and harm our operating results. Because of the specialized scientific and managerial nature of our business, we rely heavily on our ability to attract and retain qualified scientific, technical and managerial personnel. The competition for qualified personnel in the pharmaceutical field is intense and as a result, we may be unable to continue to attract and retain qualified personnel necessary for the development of our business.

Our relationships with customers and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers, physicians and third-party payors will play a primary role in the recommendation and prescription of any product candidates for which we obtain regulatory approval. Our future arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we would market, sell and distribute our products. As a pharmaceutical company, even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights are and will be applicable to our business. Restrictions under applicable federal and state healthcare laws and regulations that may affect our ability to operate include the following:

- the federal healthcare Anti-Kickback Statute will constrain our marketing practices, educational programs, pricing policies, and relationships with healthcare providers or other entities, by prohibiting, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under a federal healthcare program such as Medicare and Medicaid;

- federal civil and criminal false claims laws and civil monetary penalty laws impose criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, including the Medicare and Medicaid programs, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program and also created federal criminal laws that prohibit knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statements in connection with the delivery of or payment for healthcare benefits, items or services;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- the federal physician sunshine requirements under the Affordable Care Act requires manufacturers of drugs, devices, biologics and medical supplies to report annually to HHS information related to payments and other transfers of value to physicians, other healthcare providers, and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members and applicable group purchasing organizations; and
- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and may require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or
- marketing expenditures; and state and foreign laws govern the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any physicians or other healthcare providers or entities with whom we expect to do business are found to not be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could cause significant liability for us and harm our reputation.

We are exposed to the risk of employee fraud or other misconduct, including intentional failures to comply with FDA regulations or similar regulations of comparable foreign regulatory authorities, provide accurate information to the FDA or comparable foreign regulatory authorities, comply with manufacturing standards we have established, comply with federal and state healthcare fraud and abuse laws and regulations and similar laws and regulations established and enforced by comparable foreign regulatory authorities, report financial information or data accurately or disclose unauthorized activities to us. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and results of operations, including the imposition of significant fines or other sanctions.

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

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if we commercially sell any products that we may develop. Product liability claims may be brought against us by subjects enrolled in our clinical trials, patients, healthcare providers or others using, administering or selling our products. If we cannot successfully defend ourselves against claims that our product candidates or products caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or products that we may develop;
- termination of clinical trial sites or entire trial programs;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial subjects or patients;
- loss of revenue;
- diversion of management and scientific resources from our business operations; and
- the inability to commercialize any products that we may develop.

We currently hold $5.0 million in product liability insurance coverage in the aggregate, which we believe is 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 insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise. We intend to expand our insurance coverage for products to include the sale of commercial products if we obtain regulatory approval for our product candidates in development, but we may be unable to obtain commercially reasonable product liability insurance for any products that receive regulatory approval. Large judgments have been awarded in class action lawsuits based on drugs that had unanticipated side effects. A successful product liability claim or series of claims brought against us, particularly if judgments exceed our insurance coverage, could decrease our cash and adversely affect our business.

If we and our third-party manufacturers fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

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

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

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

Our business and operations would suffer in the event of computer system failures or security breaches.

Our internal computer systems, and those of MSK, our CROs and other business vendors on which we rely, are vulnerable to damage from computer viruses, unauthorized access, natural disasters, fire, terrorism, war and telecommunication and electrical failures. We exercise little or no control over these third parties, which increases our vulnerability to problems with their systems. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our drug development programs. For example, the loss of clinical trial data from completed, ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, the further development of our product candidates could be delayed and our business could be otherwise adversely affected.

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

Our operations could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics and other natural or manmade 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 our product candidates. Our ability to obtain clinical supplies of product candidates could be disrupted, if the operations of these suppliers are affected by a man-made or natural disaster or other business interruption. The ultimate impact on us, our significant suppliers and our general infrastructure is unknown, but our operations and financial condition could suffer in the event of a major earthquake, fire or other natural disaster.

Risks Related to Ownership of Our Common Stock

Our stock price has been and will likely continue to be volatile and may decline regardless of our operating performance.

Our stock price has fluctuated in the past and can be expected to be volatile in the future. From October 16, 2014, the first date of trading of our common stock, through July 31, 2015, the reported sale price of our common stock has fluctuated between $9.66 and $65.56 per share. The stock market in general and the market for biotechnology companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, investors may experience losses on their investment in our common stock. The market price of our common stock may be influenced by many factors, including the following:

- the success of competitive products or technologies;
- regulatory actions with respect to our product candidates or products or our competitors' product candidates or products;
- actual or anticipated changes in our growth rate relative to our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, collaborations or capital commitments;
- results of clinical trials of our product candidates or those of our competitors;
- regulatory or legal developments in the United States and other countries;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to any of our product candidates or clinical development programs;
- the results of our efforts to in-license or acquire additional product candidates or products;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- variations in our financial results or those of companies that are perceived to be similar to us;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- inconsistent trading volume levels of our shares;
- announcement or expectation of additional financing efforts;
- sales of our common stock by us, our insiders or our other stockholders;

- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry and market conditions; and
- the other risks described in this "Risk Factors" section.

We may be subject to securities litigation, which is expensive and could divert management attention.

The market price of our common stock has been volatile, and in the past companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

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

As of June 30, 2015, our executive officers, directors, holders of 5% or more of our capital stock and their respective affiliates together owned more than [70%] of our outstanding voting stock, assuming no exercise of outstanding options. These stockholders may be able to determine the outcome of all matters requiring stockholder approval. For example, these stockholders may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may feel are in your best interest as one of our stockholders. The interests of this group of stockholders may not always coincide with your interests or the interests of other stockholders and they may act in a manner that advances their best interests and not necessarily those of other stockholders, including seeking a premium value for their common stock, and might affect the prevailing market price for our common stock.

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

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. As of July 31, 2015, we have 28,512,957 shares of common stock outstanding. Moreover, certain shares of our common stock will be restricted as a result of lock-up agreements and certain holders of shares of our common stock will 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. We have registered and intend to continue to register all shares of common stock that we may issue under our equity compensation plans. Once we register these shares, they can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates and the lock-up agreements.

We are an "emerging growth company" and are taking advantage of reduced disclosure and governance requirements applicable to emerging growth companies, which could result in our common stock being less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act, and we are taking advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company, which in certain circumstances could be for up to five years. We will cease to be an "emerging growth company" upon the earliest of: (1) December 31, 2019; (2) the last day of the first fiscal year in which our annual gross revenues are $1 billion or more; (3) the date on which we have, during the previous rolling three-year period, issued more than $1 billion in non-convertible debt securities; and (4) the date on which we are deemed to be a "large accelerated filer" as defined in the Exchange Act.

Our status as an "emerging growth company" under the JOBS Act may make it more difficult to raise capital as and when we need it.

Because of the exemptions from various reporting requirements provided to us as an "emerging growth company" we may be less attractive to investors and it may be difficult for us to raise additional capital as and when we need it. Investors may be unable to compare our business with other companies in our industry if they believe that our financial accounting is not as transparent as other companies in our industry. If we are unable to raise additional capital as and when we need it, our financial condition and results of operations may be materially and adversely affected.

We have incurred and will continue to incur increased costs as a result of being a public company and our management expects to devote substantial time to public company compliance programs.

As a public company, we have incurred and will continue to incur significant legal, accounting and other expenses. We are subject to the reporting requirements of the Exchange Act, which require, among other things, that we file with the SEC annual, quarterly and current reports with respect to our business and financial condition. In addition, the Sarbanes-Oxley Act, as well as rules subsequently adopted by the SEC and The Nasdaq Stock Market to implement provisions of the Sarbanes-Oxley Act, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the SEC has adopted and will adopt additional rules and regulations, such as mandatory "say on pay" voting requirements, that will apply to us when we cease to be an emerging growth company. Stockholder activism, the current political environment and the potential for future regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

The rules and regulations applicable to public companies have substantially increased our legal and financial compliance costs and make some activities more time-consuming and costly. To the extent these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition and results of operations. The increased costs will decrease our net income or increase our net loss, and may require us to reduce costs in other areas of our business or increase the prices of our products or services. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to incur substantial costs to maintain the same or similar coverage. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers.

We previously identified and remediated a material weakness in our internal control over financial reporting. We may identify additional material weaknesses in the future that may cause us to fail to meet our reporting obligations or result in material misstatements of our financial statements. If we fail to remediate any material weaknesses or if we fail to establish and maintain effective control over financial reporting, our ability to accurately and timely report our financial results could be adversely affected.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with US generally accepted accounting principles. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of annual or interim financial statements will not be prevented or detected on a timely basis.

Prior to the completion of our initial public offering, we were a private company with limited accounting personnel and other resources to address our internal control over financial reporting. During the course of preparing for our initial public offering, we determined that we had a material weakness in our internal control over financial reporting as of December 31, 2013 relating to the design and operation of our closing and financial reporting processes.

While we have remediated this weakness, if we are unable to successfully maintain effective control over financial reporting, and if we are unable to produce accurate and timely financial statements, our stock price may be adversely affected and we may be unable to maintain compliance with applicable listing requirements of The Nasdaq Stock Market.

Because we do not anticipate paying any cash dividends on our capital stock in the foreseeable future, capital appreciation, if any, will be your sole source of potential gain.

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. In addition, the terms of any future debt agreements may preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plans, 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 will be needed in the future to continue our planned operations. To raise capital, we may sell substantial amounts of common stock or securities convertible into or exchangeable for common stock. These future issuances of common stock or common stock-related securities, together with the exercise of outstanding options and any additional shares issued in connection with acquisitions or in-licenses, if any, may result in material dilution to our investors. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights, preferences and privileges senior to those of holders of our common stock, including the shares of common stock sold in this offering.

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 RSUs, 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.

Some provisions of our charter documents and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our amended and restated certificate of incorporation, or certificate of incorporation, and amended and restated bylaws, or bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us or increase the cost of acquiring us, even if doing so would benefit our stockholders, or remove our current management. These include provisions that will:

- permit our board of directors to issue up to 20,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate;
- provide that all vacancies on our board of directors, including as a result of newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide advance notice in writing, and also specify requirements as to the form and content of a stockholder's notice;
- not provide for cumulative voting rights, thereby allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election; and
- provide that special meetings of our stockholders may be called only by the board of directors or by such person or persons requested by a majority of the board of directors to call such meetings.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, who are responsible for appointing the members of our management. Because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which may discourage, delay or prevent someone from acquiring us or merging with us whether or not it is desired by or beneficial to our stockholders. Under Delaware law, a corporation may not, in general, engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other things, the board of directors has approved the transaction. Any provision of our amended and restated certificate of incorporation or amended and restated bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

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

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us or our business. In the event securities or industry analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

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

Use of Proceeds

In October 2014, we completed our initial public offering in which 5,750,000 shares of our common stock (including 750,000 shares from the full exercise by the underwriters of their option to purchase additional shares) were sold at a price to the public of $11.00 per share, resulting in net proceeds of $55.8 million to the Company. All of the shares issued and sold in the offering were registered under the Securities Act pursuant to a Registration Statement on Form S-1 (File No.333-196936), which was declared effective by the SEC on October 15, 2014. There has been no material change in the planned use of proceeds from our initial public offering as described in the final prospectus dated October 15, 2014 and filed with the SEC on October 16, 2014. As of June 30, 2015, we had used approximately $22.3 million of the proceeds from our initial public offering.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

Exhibit No.	Description of Exhibit	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation of Atara Biotherapeutics, Inc.	S-1	333-196936	3.2	6/20/2014	
3.2	Amended and Restated Bylaws of Atara Biotherapeutics, Inc.	S-1	333-196936	3.4	6/20/2014	
4.1	Form of Atara Biotherapeutics, Inc. Common Stock Certificate.	S-1/A	333-196936	4.1	7/10/2014	
4.2	Investor Rights Agreement of Atara Biotherapeutics, Inc., dated March 31, 2014.	S-1	333-196936	4.2	6/20/2014	
10.30†	Exclusive License Agreement, by and between Atara Biotherapeutics, Inc. and Memorial Sloan Kettering Cancer Center, dated June 12, 2015	S-1	333-205347	10.30	06/29/2015	
10.31+	Offer letter agreement by and between Atara Biotherapeutics, Inc. and Heather D. Turner, dated June 4, 2015	S-1/A	333-205347	10.31	07/07/2015	
10.32†	Amendment Number One to the Exclusive Option Agreement, by and between Atara Biotherapeutics, Inc. and Memorial Sloan Kettering Cancer Center, dated June 12, 2015					X
31.1	Certification by Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification by Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1(1)	Certifications of Chief Executive Officer and Chief Financial Officer 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 Schema Document					X
101.CAL	XBRL Calculation Linkbase Document					X
101.LAB	XBRL Labels Linkbase Document					X
101.PRE	XBRL Presentation Linkbase Document					X
101.DEF	XBRL Definition Linkbase Document.					X
†	Confidential treatment has been granted for certain information contained in this exhibit.					
+	Indicates management contract or compensatory plan or arrangement.					

(1) 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, Atara Biotherapeutics, Inc. has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

ATARA BIOTHERAPEUTICS, INC.

Date: August 6, 2015

By: /s/ Isaac Ciechanover
Isaac Ciechanover
President and Chief Executive Officer
(Duly Authorized Officer and Principal Executive Officer)

By: /s/ John F. McGrath
John F. McGrath
Chief Financial Officer
(Duly Authorized Officer and Principal Financial and Accounting Officer)

Index to Exhibits

Exhibit No.	Description of Exhibit	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation of Atara Biotherapeutics, Inc.	S-1	333-196936	3.2	6/20/2014	
3.2	Amended and Restated Bylaws of Atara Biotherapeutics, Inc.	S-1	333-196936	3.4	6/20/2014	
4.1	Form of Atara Biotherapeutics, Inc. Common Stock Certificate.	S-1/A	333-196936	4.1	7/10/2014	
4.2	Investor Rights Agreement of Atara Biotherapeutics, Inc., dated March 31, 2014.	S-1	333-196936	4.2	6/20/2014	
10.30†	Exclusive License Agreement, by and between Atara Biotherapeutics, Inc. and Memorial Sloan Kettering Cancer Center, dated June 12, 2015	S-1	333-205347	10.30	06/29/2015	
10.31+	Offer letter agreement by and between Atara Biotherapeutics, Inc. and Heather D. Turner, dated June 4, 2015	S-1/A	333-205347	10.31	07/07/2015	
10.32†	Amendment Number One to the Exclusive Option Agreement, by and between Atara Biotherapeutics, Inc. and Memorial Sloan Kettering Cancer Center, dated June 12, 2015					X
31.1	Certification by Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification by Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1(1)	Certifications of Chief Executive Officer and Chief Financial Officer 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 Schema Document					X
101.CAL	XBRL Calculation Linkbase Document					X
101.LAB	XBRL Labels Linkbase Document					X
101.PRE	XBRL Presentation Linkbase Document					X
101.DEF	XBRL Definition Linkbase Document.					X
†	Confidential treatment has been granted for certain information contained in this exhibit.					
+	Indicates management contract or compensatory plan or arrangement.					

(1) 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.

Execution Copy

AMENDMENT NUMBER ONE
TO THE
EXCLUSIVE OPTION AGREEMENT

This Amendment Number One (the " **Amendment**") to the Exclusive Option Agreement is entered into as of the 12th day of June, 2015 (the "**Amendment Effective Date** ") by and among Memorial Sloan Kettering Cancer Center ("**MSK**") a New York membership corporation, with principal offices at 1275 York Avenue, New York, New York 10065, and Atara Biotherapeutics, Inc., corporation with offices at 701 Gateway Blvd., Suite 200, South San Francisco, California 94080 ("**Company"**).

RECITALS

WHEREAS, MSK granted an exclusive option to Company in accordance with that certain Exclusive Option Agreement dated September 19, 2014 (the "**Original Option Agreement**"); and

WHEREAS, MSK and Company now desire to amend the Option Agreement to amend and restate the form of Exclusive License Agreement attached to the Option Agreement as Exhibit B.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, MSK and Company each agrees as follows:

1. DEFINITIONS

Capitalized terms used herein and not defined elsewhere herein have the meanings set forth in the Original Option Agreement.

2. AMENDMENTS

2.1 Exhibit B of the Original Option Agreement shall be deleted and replaced in its entirety by the form of Exclusive License Agreement attached hereto.

2.2 Section 8.3 of the Original Option Agreement shall be deleted and replaced in its entirety as follow:

Upon the expiration or termination of this Agreement, all rights (including the Option) granted to and obligations of COMPANY shall terminate, and unless COMPANY exercises the Option prior to the end of the Initial Development Period, COMPANY shall (i) immediately discontinue all use of Option Products, Tangible Materials and Know-How, and Confidential Information of MSK; and (ii) within 30 days return to MSK or certify to MSK (at MSK's election) the destruction of all Option Products, Tangible Materials and Know-How, and Confidential Information of MSK. Notwithstanding the foregoing, Articles 4, 5 and 9 shall survive any expiration or termination of the Agreement.

3. **MISCELLANEOUS**

3.1 **Other Terms**. All other terms and conditions of the Original Option Agreement shall remain in full force and effect.

3.2 **Counterparts**. This Amendment may be executed in any number of counterparts, each of which will be deemed all original, and all of which together will constitute one and the same instrument.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties hereby execute this Amendment Number One to the Exclusive Option Agreement as of the date first written above.

ATARA BIOTHERAPEUTICS, INC.

By: /s/ Issac Ciechanover
Name: Issac Ciechanover
Title: CEO and President

MEMORIAL SLOAN KETTERING CANCER CENTER

By: /s/ Gregory Raskin
Name: Gregory Raskin, MD
Title: Vice President, Technology Development

EXHIBIT B
FORM OF LICENSE AGREEMENT

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

EXCLUSIVE LICENSE AGREEMENT

for MSK's technology

EBV/CMV and WT1 specific T-cells

TABLE OF CONTENTS

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

EXCLUSIVE LICENSE AGREEMENT

THIS EXCLUSIVE LICENSE AGREEMENT (the " **Agreement** "), entered into effective as of June 12, 2015 ("**Effective Date** "), is by and between **Memorial Sloan Kettering Cancer Center** (" **MSK** "), a New York not-for-profit corporation with principal offices at 1275 York Avenue, New York, NY 10065, and **Atara Biotherapeutics, Inc.** (" **Licensee** "), a corporation with offices at 701 Gateway Blvd, Suite 200, South San Francisco, CA 94080. MSK and Licensee are sometimes referred to singly as " **Party** " and collectively as " **Parties** ."

WITNESSETH

WHEREAS , MSK owns certain Licensed Rights (as later defined herein) and desires to have the Licensed Rights utilized in the public interest;

WHEREAS , Licensee and MSK previously entered into that certain Exclusive Option Agreement, dated September 19, 2014, as amended effective June 12, 2015 (the " **Option Agreement** "), under which (*inter alia*) MSK granted Licensee the exclusive option (the " **Option** ") to obtain exclusive license rights to the Licensed Rights and possibly to obtain from MSK supply of certain products covered by such license rights, pursuant to the terms of this Agreement;

WHEREAS , Licensee has exercised the Option and thus obtains the exclusive license to the Licensed Rights to commercially develop and commercialize the Licensed Rights through a commercially reasonable, diligent program of exploiting the Licensed Rights whereby public utilization shall result therefrom; and

WHEREAS , MSK is willing to grant such license to Licensee, and to supply such products, on the terms and conditions that follow;

NOW, THEREFORE , in consideration of the premises and the mutual covenants contained herein, the Parties hereto agree as follows:

ARTICLE 1 – DEFINITIONS

For the purpose of this Agreement, the following capitalized words and phrases shall have the following meanings:

1.1 " **Additional Antigens** " has the meaning ascribed to such term in the Option Agreement.

1.2 " **Affiliate** " means, with respect to a Party, any person, firm, corporation or other entity controlling, controlled by, or under common control with such Party hereto. The term "controlling" as used in this definition (with correlative meanings for the terms "controlled by" and "under common control with") means that the applicable person, firm, corporation or other entity has the actual ability (directly or indirectly) to direct and control the management and business of the applicable Party, whether through ownership, directly or indirectly, of more than fifty percent (50%) of the voting capital, or the ability to effect the election of a majority of the directors, or

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

by contract or otherwise. In any jurisdiction where 50% control is not permitted by applicable law, the “greater than 50%” threshold shall be deemed satisfied by the possession of substantially the maximum percentage allowable in such jurisdiction. With regard to MSK, “ **Affiliate** ” shall include Sloan Kettering Institute for Cancer Research and the Memorial Hospital for Cancer and Allied Diseases.

1.3 “ **Ancillary Agreement** ” means each of the Option Agreement, the Manufacturing Services Agreement, the Data Services Agreement or any clinical trial agreement or investigator sponsored trial agreement between the Parties with respect to a Licensed Product.

1.4 “ **CMV Product** ” means (a) any CMV-specific T-cells or cell line that are part of the Library, together with (b) such additional CMV-specific T-cells or cell lines that were or may be developed during the term of the Option Agreement or this Agreement in the laboratory of Dr. Richard O’Reilly or otherwise pursuant to plans approved by the PRC or the Steering Committee (but for clarity not including any Excluded Products), **[*]** .

1.5 “ **Combination Product** ” means a finished pharmaceutical product that comprises a Licensed Product and further comprises one or more other active pharmaceutical ingredients (that is, drug substances, and excluding, for clarity, excipients, formulation ingredients, adjuvants, delivery devices and the like).

1.6 “ **Commercially Reasonable Efforts** ” means, with respect to particular obligations or tasks, such level of efforts applied to carry out such obligations or tasks consistent with the efforts used in the biopharmaceutical industry by a company of comparable size in connection with the development or commercialization of biopharmaceutical products that are of similar status, to accomplish such obligations or tasks, at the same stage of development or commercialization, as applicable, for internally developed healthcare products in a similar area with similar market potential, at a similar stage of their product life taking into account the existence of third party (not Licensee’s own) competitive products in the market place or under development, the proprietary position of the product, the regulatory structure involved, the anticipated profitability of the product and other commercially-relevant factors. It is understood that such factors may change from time to time based upon changing scientific, business and marketing and return on investment considerations and that the level of efforts typically devoted by Licensee may also change, based on such changes and/or changes in development or commercial stage.

1.7 “ **Confidential Information** ” means, with respect to a Party, all confidential or proprietary information disclosed by such Party to the other Party in connection with this Agreement, which may include methods or manufacture or use, formulations, clinical data, test results, and research and development plans, whether in oral, graphic, electronic, or any other media or form.

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.8 " **Contract Quarter-Year** " means any of the three month periods ending on March 31, June 30, September 30 and December 31 of each calendar year.

1.9 " **Database** " means any database or other similar collection of data in MSK's possession that correlates or links, for the donors of cells in the Library, HLA typing (and other similar blood type data or analysis) with the cell type and the donor of the cells in MSK's possession at any time during the term of this Agreement; *provided that* **[*]** and **[*]** and **[*]** .

1.10 " **EBV Product** " means (a) any EBV-specific T-cells or cell line that are part of the Library, together with (b) such additional EBV-specific T-cells or cell lines that were or may be developed during the term of the Option Agreement or this Agreement in the laboratory of Dr. Richard O'Reilly or otherwise pursuant to plans approved by the PRC or the Steering Committee (but for clarity not including any Excluded Products), **[*]** .

1.11 " **Excluded IP** " means: (a) inventions or discoveries **[*]** , together with and patents and patent applications claiming inventions **[*]** , that are (i) **[*]** , but only so long as **[*]** , or (ii) **[*]** , but only so long as **[*]** or **[*]** ; and (b) the patents and applications listed on Exhibit D hereto. MSK covenants and warrants that the Database, Library, EBV Products, CMV Products, and WT1 Products are not within the " **Excluded IP** ."

1.12 " **Excluded Products** " means all **[*]** products (a) **[*]** , or (b) that are **[*]** . MSK covenants and warrants that the EBV Products, CMV Products, and WT1 Products are not within the " **Excluded Products** ."

1.13 " **Field of Use** " means all therapeutic, prophylactic, diagnostic and other healthcare-related uses (including research and development in the field of healthcare).

1.14 " **Follow-On Product** " means any product developed under a Sponsored Research Program (as contemplated in Section 2.10 of the Option Agreement) conducted by MSK under Licensee funding pursuant to Section 2.10(b) or 2.10(c) of the Option Agreement, for which Licensee exercised its option under such Section.

1.15 " **Library** " means the collection of T-cells and cell lines, including "donor" T-cell lines, created, isolated or developed at MSK in the laboratory of Dr. Richard O'Reilly, as existing on the Effective Date, including all such cells or cell lines identified in Exhibit A of this Agreement, and including all additions, augmentations or modifications made to the foregoing collection.

1.16 " **Licensed Know-How** " means all know-how, inventions (whether or not patentable), data, results, protocols, regulatory filings, assays and other information relating to or useful for making, propagating, improving, maintaining and/or using the Licensed Products and/or the Library, that are owned or controlled by MSK at any time during the Term of this Agreement, including the Databases, and including the information generally described in the applicable section of Exhibit A of this Agreement.

1.17 " **Licensed Patent Rights** " means:

(a) The patents and applications (if any) listed onExhibit C of this Agreement (including any patent applications added to Exhibit C pursuant to Section 7.1);

(b) U.S. and ex-U.S. patents that issue from or claim priority to any applications in (a), but not including claims in continuation-in-part applications or patents except to the extent provided in (c) below;

(c) Claims in continuation-in-part applications or patents described in (b) above to the extent that such claims are entitled to priority to patents or patent applications in (a);

(d) Any reissues or re-examinations of patents described in (a), (b), or (c) above; and

(e) Any ex-US applications and patents that are equivalent to any of the foregoing.

Excluded from Licensed Patent Rights is all Excluded IP.

1.18 " **Licensed Product** " means any T-cell product specific to CMV, EBV, or WT1 made, used, imported, offered for sale, sold, reproduced, performed, displayed,

distributed, or otherwise utilized by or on behalf of Licensee, or its sublicensees, that comprises, is based on or is made using Licensed Rights, including any EBV Product, CMV Product, WT1 Product and/or Follow-On Product. Excluded from Licensed Product are all Excluded Products.

1.19 " **Licensed Rights** " means the Licensed Patent Rights, the Licensed Tangible Materials and the Licensed Know-How (or any part of any of the foregoing).

1.20 " **Licensed Tangible Materials** " means: the Library; all improvements, additions or modifications thereto made by or on behalf of MSK during the term of this Agreement pursuant to activities conducted in accordance with this Agreement, the Option Agreement or the Manufacturing Services Agreements; and all materials (including those generally described in the Licensed Tangible Materials section of Exhibit A of this Agreement) used in sourcing, preparing, creating, or improving or maintaining the Library **[*]** .

1.21 " **Net Sales** " means the gross price billed or invoiced on sales of Licensed Products by Licensee, its Affiliates, or Sublicensees during the applicable Royalty Term(s), less:

(a) Freight and shipping expenses (actual), including insurance, to the extent billed to the customer;

(b) Cash, trade, volume, and prompt payment discounts actually granted and deducted solely on account of sales of Licensed Products;

(c) Rebates actually paid to individual or group purchasers of Licensed Products that are solely on account of the purchase of such Licensed Products;

(d) credits, reserves or allowances granted for (i) damaged, outdated, returned, rejected, withdrawn or recalled Licensed Product, (ii) wastage replacement and short-shipments; (iii) billing errors and (iv) indigent patient and similar programs (e.g., price capitation);

(e) Taxes (including sales, value added, consumption and similar taxes), duties and other governmental charges actually incurred, paid or collected and remitted to the relevant tax or other authority for the sale, export, import, transfer or use of Licensed Products;

(f) government-mandated rebates and price reductions, and chargebacks, rebates or fees granted to governmental healthcare organizations, purchasing groups, wholesalers, distributors, selling agents (excluding any sales representatives of a selling party), group purchasing organizations, Third Party payors, other contractees and managed care entities;

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

(g) retroactive price reductions actually granted to the Third Party applicable to sales of the product; and

(h) **[*]** , with respect to the sale of the Licensed Product, based on **[*]** of the **[*]** during the applicable period.

To the extent that Licensed Product **[*]** , including **[*]** then in calculating Net Sales for the sale of such Licensed Product, **[*]** such Licensed Product **[*]** may be **[*]** .

Sales of Licensed Product(s) between or among Licensee and its Affiliates and Sublicensees shall be excluded from the computation of Net Sales and no payments shall be payable on such sales, except where such Affiliates or Sublicensees are the end users of the Licensed Product sold.

If Licensee or its Affiliate or Sublicensee **[*]** and **[*]** , then **[*]** Licensee shall **[*]** and **[*]** (taking into account **[*]** or **[*]** , with the understanding that **[*]**). If **[*]** , the Affiliate or Sublicensee **[*]** . Such **[*]** (it being understood that **[*]** for purposes of this Agreement), **[*]** , **[*]** .

1.22 " **Patent Expenses** " means all actual out-of-pocket expenses (such as outside counsel fees and patent filing fees) incurred by MSK in the prosecution, filing, and maintenance hereunder of Licensed Patent Rights (including any oppositions, re-examinations, and other similar proceedings), but *excluding* for clarity any internal costs of MSK (such as research costs, overhead or internal patent costs).

1.23 " **PRC** " means the PRC committee under the Option Agreement.

1.24 " **Restricted Know-How** " means Licensed Know-How that (a) is important to the making, propagating, improving, maintaining and/or using any Licensed Product and/or the Library, and (b) is not generally applicable and useful (in a substantial manner) for other research or development activities not involving the Library or Licensed Products.

1.25 " **Royalty Term** " means, for a particular Licensed Product, on a Licensed Product-by-Licensed Product basis and country-by-country basis, the period from the Effective Date to the later of: (a) expiration of the last Licensed Patent Rights embracing such Licensed Product; (b) expiration of any market exclusivity period granted by law with respect to such Licensed Product; or (c) **[*]** from the date of first commercial sale of the Licensed Product in the applicable country.

1.26 " **Royalty Year** " means each twelve (12) month period commencing January 1 and ending December 31 during the term of this Agreement, *except that* for the first calendar year of this Agreement, the Royalty Year shall be the period of time between the Effective Date and the next following December 31.

1.27 " **Steering Committee** " means the committee of that name formed by the Parties under Section 2.8 of this Agreement.

1.28 " **Sublicensee** " means any person or business entity to which Licensee has granted a sublicense of the Licensed Rights.

1.29 " **Sublicense Income** " means all consideration (*e.g.,* upfront fees, milestone payments, and other similar license fees) received by Licensee from a Sublicensee based on the grant to such Sublicensee of a sublicense under the license rights granted to Licensee under this Agreement, *but excluding* : (a) royalty payments; (b) payments made at fully-burdened cost to fund prospectively research and development costs and expenses for Licensed Products; (c) *bona fide* loans; (d) payments to purchase capital stock of Licensee at fair market value; and (e) transfer price payments for the purchase of Licensed Product supplied by Licensee (or its Affiliate) made at prices in compliance with the rules of applicable tax authorities.

1.30 " **Term** " shall mean the term of this Agreement, which will be the period as defined in Section 17.1.

1.31 " **Territory** " shall mean worldwide.

1.32 " **WT1 Product** " means (a) any WT1-specific T-cells or cell line that are part of the Library, together with (b) such additional WT1-specific T-cells or cell lines that were or may be developed during the term of the Option Agreement or this Agreement in the laboratory of Dr. Richard O'Reilly or otherwise pursuant to plans approved by the PRC or the Steering Committee (but for clarity not including any Excluded Products), **[*] [*]**

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.33 **Additional Definitions** . Each of the following definitions is set forth in the section of this Agreement indicated below:

Agreement	Preamble
Claim	11.1
Competitive Program	2.3
Costs	11.1
Data Services Agreement	2.7(b)
Effective Date	Preamble
EMA	4.1(a)
FMV Fraction	1.21
Institution Indemnitee	11.1
IP Committee	7.1
Licensee	Preamble
Manufacturing Services Agreement	9.3
MSK	Preamble
Option	Recitals
Option Agreement	Recitals
Party and Parties	Preamble
Patent Adversarial Actions	8.2(a)
Payment Dispute	17.3
PHI	1.9
Summary Plan	4.1(c)

ARTICLE 2 – GRANT; KNOW HOW TRANSFER

2.1 License Grant . Subject to the terms of this Agreement, MSK hereby grants to Licensee the exclusive license to use and practice the Licensed Rights in the Territory in the Field of Use and to research, develop, make, use, sell, offer for sale, and import Licensed Products in the Field of Use in the Territory under all the Licensed Rights, together with the right to sublicense as provided in Article 3. Licensee shall not use the Licensed Rights for any other purpose, except no restriction is imposed on Licensee's use of any portion of Licensed Rights that are in the public domain, or that become part of the public domain without fault of Licensee.

2.2 Limitations . Licensee shall not during the term of this Agreement **[*]** , provided that Licensee may **[*]** or **[*]** , or **[*]** . MSK shall not during the term of this Agreement grant to any third party any option, licenses or other rights to T-cells specific to EBV, CMV, WT1 or Additional Antigens developed at MSK by or in the laboratory of

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Dr. Richard O'Reilly, or to any other T-cells in the Library, and without the prior written consent of Licensee shall not provide any confidential or proprietary Licensed Tangible Materials or Restricted Know-How to any third party or otherwise encumber the Licensed Tangible Materials or Restricted Know-How, provided that MSK may do so (i) **[*]** only, **[*]** (without **[*]** except **[*]**), or as otherwise approved in writing by Licensee, such consent not to be unreasonably withheld, and (ii) **[*]** that are either **[*]** or are approved by Licensee **[*]** .

2.3 Other T-Cell Products . If MSK becomes aware, at any time during the term of the Agreement **[*]** that are **[*]** (such as **[*]** , but only to the extent **[*]** or **[*]** , or **[*]**) that are **[*]** and are **[*]** , and that become available for licensing or are appropriate for being supported by a sponsored research program (each, a " **Competitive Program** "), MSK agrees to notify Licensee of the Competitive Program and shall provide reasonably detailed information about the technology. For any such technology that is available for licensing, Licensee then will have an exclusive **[*]** period from such notice and delivery of information during which it will have the right to elect to exercise an exclusive right of first negotiation for an exclusive license to such Competitive Program. If Licensee elects to obtain such license, MSK and Licensee shall negotiate exclusively and in good faith for **[*]** to seek to reach agreement on the terms of such license agreement for such Competitive Program. If at the end of such negotiation period the Parties have not reached agreement, then MSK may negotiate with other parties, and MSK may grant such license to a third party *provided that* , **[*]** . For any such technology that is available for sponsored funding as an MSK internal research program under a sponsored research agreement, Licensee then will have an exclusive **[*]** period from such notice and delivery of information and of a *bona fide* firm proposal by MSK for scope of the research and the budget to be supported, during which Licensee will have the exclusive right to enter into a sponsored research agreement to cover funding of such research program and an option to license the results thereof. If Licensee elects to enter into such a sponsored research agreement, MSK and Licensee shall negotiate in good faith for up to 45 days to

seek to reach agreement on the terms of such agreement for such Competitive Program, and if at the end of such negotiation period the Parties have not reached agreement then Licensee's option to enter into such sponsored research agreement shall terminate.

2.4 Reserved Rights . Notwithstanding anything in this Agreement to the contrary, MSK shall have the right to use the Licensed Rights for (i) **[*]** , (ii) **[*]** , provided that **[*]** , or **[*]** , that is **[*]** , (iii) **[*]** with the prior approval of Licensee, as provided below, and (iv) **[*]** or **[*]** , and provided that **[*]** agreed to by Licensee as provided below. MSK shall also have the right to (v) **[*]** as provided below, and (vi) **[*]** , solely pursuant to **[*]** agreed to by Licensee. For clarity, MSK, and **[*]** , shall not use or practice, and shall not have any right to use or practice, or permit any Third Party to use or practice, any Licensed Rights **[*]** , except as expressly permitted by Licensee in writing in advance **[*]** and in accordance with applicable law and regulations. However, Licensee acknowledges that **[*]** and shall **[*]** that are **[*]** under this Agreement. Licensee further agrees that **[*]** , and will **[*]** , or **[*]** .

2.5 U.S. Government Rights . All rights granted herein are subject to rights of the United States pursuant to 35 U.S.C. § 200 *et seq.* , and implementing regulations and agreements.

2.6 No Implied Rights; Excluded Patents . MSK reserves all its rights not expressly granted in the Agreement. The licenses granted hereunder shall not be construed to

confer any rights upon Licensee by implication, estoppel or otherwise, and it is understood that practice of the full scope of the Licensed Rights may not be possible absent the grant of a license to patents not included in the Licensed Rights. Without limiting the generality of the foregoing, no rights are granted with respect to patents and applications that are part of the Excluded IP.

2.7 Know How and Materials Transfer; Maintenance . (a) Promptly after the Effective Date, and from time to time thereafter (as reasonably requested by Licensee), MSK shall provide to Licensee samples of and disclose all Licensed Tangible Materials and Licensed Know-How to Licensee, including reasonable quantities of all separate cells or cell lines in the Library and all Databases, to the extent such materials or information have not been previously disclosed and transferred by MSK to Licensee pursuant to the Option Agreement, and including new materials added to the Library or additions to the Licensed Tangible Materials. MSK agrees to provide reasonable support and consultation regarding such transfer to support Licensee's research, development and manufacture of Licensed Products and its maintenance of the Library. Licensee can request a reasonable amount of formal meetings during the term of this Agreement, on a reasonable schedule and format that is mutually agreeable to MSK investigators and Licensee, to provide Licensee with information necessary or useful for it to carry out its obligations and/or exercise its rights under this Agreement and to determine whether to elect to manufacture Licensed Products. In addition MSK agrees that MSK investigators will make themselves reasonably available for additional telephone discussions regarding the Licensed Tangible Materials and Licensed Know-How, including the use, manufacture and maintenance thereof. Further, promptly after the Effective Date, MSK and Licensee shall amend and update Exhibit A to reflect all additions, enhancements, amendments and modifications to the Licensed Tangible Materials and the Licensed Know-How that have occurred since the date of the Option Agreement.

(b) The Parties are contemporaneously entering into (i) a Data Services Agreement to **[*]** , **[*]** and **[*]** to **[*]** as provided therein (" **Data Services Agreement** "), and (ii) the Manufacturing Services Agreement (defined in Section 9.3 below), which provides for, among other things, **[*]** as provided therein.

2.8 Steering Committee . The Parties hereby established the Steering Committee, comprised initially of the members of the PRC under the Option Agreement at the time of Licensee's exercise of the Option. Each Party may replace its members on the Steering Committee, as appropriate to conduct the activities of the Steering Committee to support the goals of this Agreement, but with the intention that the Steering Committee have continuity with the prior activities and knowledge and experience of the PRC. The Parties agree that the Steering Committee will meet by telephone conference (or in person if the Parties agree) **[*]**

[*] , or as otherwise **[*]** . The Steering Committee shall be responsible for: (a) overseeing and managing the **[*]** , and **[*]** and **[*]** ; (b) overseeing and discussing the **[*]** , in each case **[*]** ; (c) discussing and **[*]** , including **[*]** and **[*]** ; (d) reviewing and overseeing **[*]** ; (e) discussing and **[*]** under this Agreement, including **[*]** , and **[*]** ; and (f) any other duties or authority that the Parties agree in writing to add to the Steering Committee's purview. The Steering Committee also will **[*]** , and **[*]** as specified by the Steering Committee. The Steering Committee will seek in good faith and acting reasonably to reach consensus on all matters before it. For clarity, Licensee (and its Affiliates and Sublicensees, as applicable) retain the sole rights to make all decisions regarding their own research, development and commercialization of Licensed Products (but not to authorize any breach or violation of this Agreement).

2.9 Transfer of INDs; Regulatory Matters; Clinical Activities .

(a) Transfer of INDs; Regulatory Matters . On or before June 15, 2015, MSK will transfer (or cause the transfer) of MSK **[*]** to Licensee and grant Licensee the right to reference any other INDs held by MSK for Licensed Product as of the Effective Date. Upon the written request of Licensee from time to time after the Effective Date, MSK will also transfer (or cause the transfer) to Licensee of each other IND held by MSK (or foreign equivalents) for any Licensed Product as of the Effective Date in any country. MSK shall execute and deliver all documents and instruments, and take all such actions, as needed to effect each of the transfers described above, including appropriate communications with the FDA and other regulatory authorities, including as requested by Licensee. Further, MSK shall provide to Licensee, at its request, all reasonable regulatory assistance with respect to such transferred INDs (and equivalents) and the regulatory activities of Licensee relating to development of Licensed Products. Upon Licensee's request, MSK will provide Licensee and/or its designee with copies of all regulatory documentation and correspondence relating to the

Licensed Products and will cooperate with Licensee and its designees, and take all such actions that are reasonably requested to remove PHI from such regulatory documentation and correspondence. Licensee covenants and agrees that if this Agreement is terminated early pursuant to Article 17, Licensee shall transfer back to MSK the INDs (and foreign equivalents) held by MSK that were transferred by MSK to Licensee pursuant to the above provisions of this Section 2.9(a) promptly after the effective date of termination, and Licensee shall have the same obligations of cooperation and assistance as set forth above with respect to the initial transfer from MSK to Licensee.

(b) Clinical Activities. Licensee will use Commercially Reasonable Efforts to continue, or support the continuation of, the clinical activities of, or on behalf of, MSK or its Affiliate with respect to any Licensed Product that are ongoing as of the Effective Date. The Parties agree that (i) clinical study protocols #95-024 and 11-130 under **[*]** will be conducted by MSK pursuant to the Clinical Trial Agreement(s) entered into by the Parties concurrently with this Agreement, and (ii) that the clinical study protocols listed on Exhibit G will be conducted by MSK pursuant to one or more Investigator Sponsored Trial Agreement(s) entered into by the Parties concurrently with this Agreement. All data and results of all clinical trials on Licensed Products conducted by or on behalf of MSK or its Affiliate at any time prior to or during the Term are included in the Licensed Tangible Materials and Licensed Know-How and are licensed exclusively to Licensee under this Agreement.

ARTICLE 3 – SUBLICENSES

3.1 Licensee and its Affiliates may grant through multiple tiers (and may amend such sublicenses) provided that each such sublicense is consistent with and subject to the terms and conditions of this Agreement. Licensee shall provide MSK with a complete copy of each such sublicense agreement (or amendment) and any associated agreements between it (or its Affiliate) and the Sublicensee, or between an existing Sublicensee and its subsequent Sublicensee, *provided that* such agreement or amendment may be redacted to remove confidential information that does not relate to Licensed Product or Licensed Rights. Licensee shall also promptly provide MSK with full executed copies of such agreements. All such documents shall be deemed Confidential Information of Licensee.

3.2 Licensee shall remain responsible for performance of all its obligations under this Agreement, notwithstanding the grant of any sublicense. It is agreed that such obligations may be satisfied by the performance by one or more Sublicensees. Any sublicense shall by its terms require that the Sublicensee comply with the provisions of this Agreement that by their terms are required to be performed by a Sublicensee, including the restrictions, limitations, and obligations of Articles 11, 13, and 14 and Sections 6.1 and 7.6, and shall provide that MSK is a third-party

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

beneficiary with respect to such Articles and Sections. Any breach by a Sublicensee shall be considered a breach by Licensee, *provided that* MSK shall not have the right to terminate this Agreement pursuant to Section 17.4 for an uncured breach by Sublicensee if (i) such breach was not made at the direction of, or with the approval of, Licensee, (ii) **[*]** , and (iii) Licensee promptly terminates the sublicense after the end of the applicable cure period.

3.3 Licensee shall promptly provide MSK with a copy of any notice of breach, termination, or the like sent to or received from a Sublicensee, with respect to the applicable sublicense agreement hereunder.

ARTICLE 4 – DILIGENCE

4.1 (a) Licensee shall use its Commercially Reasonable Efforts to (i) bring Licensed Products to market, and (ii) thereafter continue active marketing efforts for approved Licensed Products throughout the Term.

Without limiting the foregoing, Licensee shall meet the following milestone activities:

(i) use Commercially Reasonable Efforts to **[*]** not later than **[*]** if **[*]** ; provided that (x) if **[*]** , then the above target timeframe to meet this diligence requirement shall be extended by **[*]** , and (y) if **[*]** , then this milestone will be deemed to have been achieved;

(ii) use Commercially Reasonable Efforts to **[*]** within **[*]** ; provided that if **[*]** , then the above target timeframe to meet this diligence requirement shall be extended by **[*]** , but not for more than **[*]** ;

(iii) if **[*]** , then Licensee will use Commercially Reasonable Efforts to **[*]** within **[*]** ; provided that if **[*]** , then the above target timeframe to meet this diligence requirement shall be extended by **[*]** , but not for more than **[*]** .

(b) Licensee shall give MSK written notice and evidence within **[*]** of the achievement of each of the above specific diligence milestones.

(c) Licensee shall provide to MSK, within **[*]** of the Effective Date, a reasonable summary business plan (the " **Summary Plan** ") for the development of the Licensed Rights, including, for example, **[*]** . Thereafter, Licensee shall provide update reports to MSK **[*]** to relay update and status information on Licensee's business, research and development progress with respect to development of Licensed Product(s), including projections of activity anticipated **[*]** , generally in accordance with the topic listed in the template provided in Exhibit B of this Agreement.

(d) Licensee shall be solely responsible, at its sole cost and expense, for securing any necessary governmental or regulatory approvals for development, manufacture, and sale of Licensed Products, and shall use Commercially Reasonable Efforts to obtain such approvals. Licensee shall advise MSK, **[*]** , of its program of development for obtaining said approvals.

4.2 If Licensee is the subject of a demand, notice, inquiry, or inspection report by a governmental authority or certification agency in relation to any Licensed Product that (i) by its terms directs or contemplates, or may reasonably be expected to require or relate to, suspension or cessation of manufacturing, sale, development, or marketing of Licensed Products efforts, (ii) concerns a recall or potential recall of Licensed Products, (iii) concerns a loss of life or material issue of safety, or (iv) may reasonably be expected to prevent Licensee's compliance with its diligence obligations, then Licensee shall provide a copy to MSK without delay and keep MSK reasonably apprised of its response.

ARTICLE 5 – PAYMENTS

5.1 In consideration for the rights, privileges and licenses granted hereunder, Licensee shall pay to MSK, in the manner hereinafter provided:

(a) License Fee : Licensee shall pay to MSK a license issue fee of Four Million Five Hundred Thousand US Dollars ($4,500,000), due within thirty (30) days after the Effective Date. Such fee shall be nonrefundable and non-creditable against any other obligations hereunder.

(b) Running royalties : For sales of Licensed Products occurring in each country during the Royalty Term for the applicable country and product, Licensee shall pay to MSK a royalty in an amount equal to **[*]** .

If Licensee obtains a license under patent rights of a third party that Licensee, on the advice of patent counsel, determines, in the absence of a license thereunder, would be considered to be infringed by the development, manufacture, use, sale, offer for sale, or importation of a Licensed Product, then **[*]** , provided that **[*]** .

For clarity, upon expiration of the Royalty Term for a Licensed Product being sold in a country, subsequent sales of such Licensed Product in such country shall be royalty free and shall not contribute to the calculation of

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

"Net Sales" for purposes of the above royalty obligation, and thereafter the license granted under Section 2.1 as to such Licensed Product in such country shall be fully paid, perpetual and irrevocable.

(c) Guaranteed minimum royalties : Licensee shall pay to MSK minimum annual royalties of **[*]** on the **[*]** anniversary of the Effective Date and on each subsequent anniversary until **[*]** ; provided that for as long as Licensee **[*]** , such obligation to pay such minimum annual royalties shall not be applicable. Each such minimum annual royalties payment shall be creditable against earned royalties for the same annual period actually owed by Licensee to MSK under Section 5.1(b) based on sales during such period after such payment.

(d) Milestones :

Milestone payments as follows:

The following milestone payments shall be due for a Licensed Product for the first indication only. For clarity, one set of milestone payments will be payable for an EBV Product, a second set of milestone payments will be payable for a CMV Product, and a third set of milestones payments will be payable for a WT1 Product:

(i) **[*]**

(ii) **[*]**

(iii) **[*]**

For clarity, each above milestone payment shall be made only once with respect to any EBV Product, once with respect to any CMV Product, and once with respect to any WT1 Product.

(e) Sublicensing Income :

Licensee shall pay to MSK a portion of Sublicense Income received in consideration of any sublicense granted by Licensee of the license rights

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

granted under this Agreement, other than sublicenses executed in the ordinary course of business, as follows:

(i) **[*]** of the Sublicense Income from a sublicense if **[*]** ;

(ii) **[*]** of the Sublicense Income from a sublicense if **[*]** ; provided, however, that **[*]** .

For clarity, if **[*]** , then **[*]** , and **[*]** , **[*]** .

5.2 Payment Terms : Payments owed under this Agreement shall be payable **[*]** after they are due (except as provided below for royalties), paid in United States dollars in New York, NY, or at such other place as MSK may reasonably designate consistent with the laws and regulations controlling in any foreign country and provided that such designation does not impose additional costs, fees or payment obligations on Licensee. Royalty payments are due **[*]** after the end of the Contract Quarter-Year during which such royalty obligations accrued. If any currency conversion shall be required in connection with the payment of royalties hereunder, such conversion shall be made by using the exchange rate prevailing at the JP Morgan Chase Bank on the last business day of the Contract Quarter-Year reporting period to which such royalty payments relate.

Additionally, in the event of a dispute concerning the determination of royalties or milestones, or whether royalties or milestones are owed, that arises from disagreement over whether a T-cell product sold by or on behalf of Licensee qualifies as a Licensed Product, the Parties shall agree on a reasonable procedure for the provision of necessary technical information in confidence to a qualified representative of MSK to attempt to resolve such dispute.

5.3 Interest : Licensee shall pay to MSK interest on any amounts not paid when due at the rate established by the New York CPLR for prejudgment interest in the case of breach of contract.

5.4 Tax withholding : Payments shall be made in full, without deduction or withholding for wire transfer fees or currency exchange fees. The Parties will cooperate to prevent or minimize the need for any withholding, and at the request of Licensee, MSK will provide Licensee with documents evidencing its tax status in the United

States. Any withholding or other tax that is required by law to be withheld with respect to payments owed by Licensee shall be deducted by Licensee from such payment prior to remittance, and paid over to the relevant taxing authorities when due. Licensee shall promptly furnish MSK evidence of any such taxes withheld and of payment thereof, and MSK shall seek to obtain the release of any such withheld amounts from the taxing authority. At MSK's request, Licensee shall provide MSK with reasonable assistance to release the withheld amount to MSK. If **[*]** , then **[*]** and **[*]** (or **[*]**).

ARTICLE 6 – REPORTS AND RECORDS

6.1 Licensee shall keep, and shall require its Affiliates and Sublicensees to keep, full, true and accurate books of account containing all particulars that may be necessary for the purpose of showing the amounts payable to MSK hereunder. Said books and records shall include the data and information maintained by the applicable party, which may include: Invoice registers and original invoices, product sales analysis reports, accounting general ledgers, sub-license and distributor agreements, price lists, contracts for the sale of Licensed Products, product catalogs and marketing materials, audited financial statements (as to Licensed Product sales), inventory and production records, and shipping documents. Said books and records shall be maintained for a period of no less than four (4) years following the period to which they pertain. Such records shall include original data files used to prepare the submitted royalty reports. For the term of this Agreement, and at least annually, MSK or its agents shall have the right upon reasonable written notice to inspect such books and records for the purpose of verifying Licensee's royalty statement or other payments under this Agreement. Such inspections shall be during normal working hours of Licensee, on reasonable prior notice and shall not occur more than once for any particular royalty period, or more than once per year. Should such inspection lead to the discovery of a discrepancy in MSK's favor of greater than **[*]** of the total payments made during the audited period, or**[*]** , in reporting to MSK's detriment, for**[*]** , Licensee shall pay the reasonable cost of such audit, plus interest on the discrepancy as provided for late payments.

6.2 Commercialization Reports :

Commencing upon first commercial sale of a Licensed Product, Licensee, within**[*]** of the end of each Contract Quarter-Year thereafter, shall deliver to MSK a summary report (which shall be, to Licensee's knowledge at the time, true and accurate), giving the following particulars of the Licensed Product business

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

conducted by Licensee and its Sublicensees during such Contract Quarter-Year, to be itemized per Licensed Product by country of sales origin:

(a) Product number

(b) Units sold

(c) Net Sales based on units sold

(d) Royalty rate applicable

(e) Royalty dollars due

(f) country of sale;

(g) foreign currency conversion rate; and

(h) any Sublicense Income received in the prior quarter.

Licensee shall also provide copies of royalty reports received from its Sublicensees for the corresponding period, to the extent such reports relate to sales of Licensed Products by the Sublicensee. All such information shall be maintained in confidence by MSK.

6.3 With each such report submitted under Section 6.2, Licensee shall pay to MSK the royalties due and payable under this Agreement for such Contract Quarter-Year. If no royalties shall be due, Licensee shall so report.

6.4 Milestone payments shall be reported and paid when due.

ARTICLE 7 – PATENT PROSECUTION; THE LICENSED PATENTS

7.1 Promptly after the Effective Date, MSK and Licensee shall form an "**IP Committee** ," **[*]** , each having reasonable experience and expertise in managing intellectual property matters (which may be the representatives in the " **IP Committee** " formed under the Option Agreement). The IP Committee shall be responsible for discussing and establishing the patent prosecution strategy for the Licensed Patent Rights including any additional patent applications covering any potentially patentable inventions within the Licensed Tangible Materials and/or Licensed Know-How, and for reviewing and managing the prosecution of any Licensed Patent Rights including such additional patent applications that are determined by the IP Committee to be filed covering any such inventions. Promptly after the Effective Date, Licensee shall add to Exhibit C of this Agreement all Licensed Patent Rights existing as of the Effective Date hereof, and each additional Licensed Patent Right filed by MSK hereunder (including filed as continuing applications based on the further prosecution of such Licensed Patent Rights) shall be listed by the Parties on Exhibit C of this Agreement, and the Parties shall update such Exhibit C list to reflect all additional Licensed Patent Rights filed or issued, and updates in the prosecution thereof.

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

7.2 MSK shall undertake, at Licensee's expense (as provided below) and using Commercially Reasonable Efforts, and as directed by the IP Committee, to prosecute and maintain the Licensed Patent Rights owned solely by MSK in the United States and in such countries as are determined by MSK upon consultation with Licensee, using counsel of MSK's choice reasonably acceptable to Licensee. Licensee shall reimburse MSK for the actual Patent Expenses incurred in such prosecution and maintenance of the Licensed Patent Rights, pursuant to invoices showing the actual Patent Expenses incurred which shall include copies of the documentation demonstrating the out-of-pocket expenses. If Licensee advises that it does not wish to pursue or maintain a patent or application, MSK may continue to prosecute and maintain it at its own expense, and such patent or application shall be excluded from the license granted hereunder if MSK does so.

7.3 MSK shall keep Licensee reasonably informed of the progress of its prosecution efforts, by providing Licensee with copies of all material patent prosecution documentation so that Licensee may be informed and advise MSK on the continuing prosecution, and MSK agrees to consider in good faith all such reasonable comments. Licensee shall keep this documentation confidential.

7.4 Licensee shall, at Licensee's expense and using Commercially Reasonable Efforts, and as directed by the IP Committee, to prosecute and maintain the Licensed Patent Rights owned jointly by Licensee and MSK, in the United States and in such countries as are determined by Licensee upon consultation with the IP Committee, using counsel of Licensee's choice. If Licensee advises that it does not wish to pursue or maintain a patent or application in such joint Licensed Patent Rights, MSK may continue to prosecute and maintain it at its own expense, and such patent or application shall be excluded from the license granted hereunder if MSK does so, *provided that* Licensee will retain its ownership interests therein. Licensee shall control, at its sole discretion, prosecution of any patents covering inventions owned solely by Licensee.

7.5 The Parties agree that they share a common legal interest in obtaining valid, enforceable patents and that Licensee, and MSK will maintain confidential all information received pursuant to this Article 7.

7.6 Licensee shall not challenge the validity or enforceability of any claim within the Licensed Patents Rights and shall cause its Affiliates to refrain from doing so. In addition to all other rights and remedies available to MSK for any breach of this provision by Licensee or its Affiliates, in the event that any such challenge is not successful then Licensee shall reimburse MSK for all costs and expenses, including but limited to attorneys fees, incurred by MSK as a result of defending against such challenge.

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

ARTICLE 8 – INFRINGEMENT

8.1 Monitoring . Licensee shall use commercially reasonable efforts to monitor third party infringement of the Licensed Patent Rights in the Field of Use. Licensee shall keep MSK timely informed of any activities by Licensee in regard hereto.

8.2 Actions . This Section sets forth each of the Party's right of enforcement and defense in relation to the Licensed Patent Rights.

(a) First Right . Licensee shall have the first right, but not the obligation, for the initiation, defense, and management of any adversarial legal proceeding relating to the Licensed Patent Rights in the Field of Use and Territory, including without limitation any declaratory judgment action, patent infringement action or opposition (collectively, " **Patent Adversarial Actions** ") during the Term, and will be responsible for all expenses related thereto. MSK shall provide Licensee with all reasonable assistance and cooperation in conducting and/or defending against any such Patent Adversarial Action, including joining in any such Patent Adversarial Action, at Licensee's request and expense, provided that in any case Licensee shall at all times have the full control of conducting and/or defending such Patent Adversarial Action. For clarity, Licensee may delegate the foregoing rights to its Sublicensee, in the territory where such Sublicensee has sublicense rights hereunder.

(b) Secondary Right . If Licensee determines, as to any particular third party activity that constitutes a material infringement of the Licensed Patent Rights or a declaratory judgment action involving the Licensed Patent Rights, that Licensee shall not exercise its rights to conduct a Patent Adversarial Action as to such activity, then Licensee shall provide MSK with written notice that Licensee declines such right as to such activity, and after receiving such notice, MSK shall have the secondary right to undertake such infringement action or defend against such challenge, provided that MSK shall keep Licensee fully informed of all its activities with respect thereto and shall not take any action, or omit to take any action or position, that causes or likely will cause a material adverse impact on Licensee or its Sublicensee or on the Licensed Patent Rights.

8.3 Cooperation; Settlement . To the extent that a Party conducts any legal proceedings in relation to the enforcement or defense of Licensed Patent Rights in the Field of Use and Territory as contemplated above, it shall keep the other Party reasonably informed of such proceedings. At such Party's request, the other Party shall reasonably cooperate, at the expense of the requesting Party, in such proceedings. In any action conducted by MSK, Licensee will join as may be requested by MSK, and in any action conducted by Licensee, Licensee may affect joinder of MSK if MSK is an indispensible or necessary party under the applicable law. Notwithstanding anything in this Agreement to the contrary, no settlement, consent

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

judgment, or other voluntary final disposition of any action by Licensee that admits the invalidity or unenforceability of the Licensed Patent Rights may be entered into without the prior written consent of MSK.

8.4 Costs and Recoveries . All costs of any action by a Party to enforce, or to defend against a challenge to, the Licensed Patent Rights shall be borne by such Party, and such Party shall keep any sums recovered or obtained in connection therewith (whether as damages, reasonable royalties, license fees, or otherwise in judgment or settlement derived therefrom), except that in the case of actions commenced by Licensee, the excess of such sums over all such costs and expenses shall be treated as Net Sales subject to MSK's rights under this Agreement to collect royalties thereon. For the avoidance of doubt, Licensee may not deduct, from Net Sales any portion of Licensee's costs or expenses related to any investigation, enforcement, defense, judgment or settlement of any such actions, *provided that* if Licensee is the enforcing Party, it may deduct from Net Sales the costs and expenses of MSK, incurred in connection with MSK providing cooperation in such enforcement, that are reimbursed or paid by Licensee pursuant to Section 8.3.

8.5 Third Party Patents . In the event Licensee is sued for patent infringement or, threatened with such suit, it shall promptly notify MSK. In any such action, Licensee shall be fully responsible for all its costs, including expenses, judgments and settlements (but subject to Section 5.1(b)).

ARTICLE 9 – MANUFACTURE AND SUPPLY

9.1 **[** Intentionally omitted **]** .

9.2 Manufacturing Transfer . Commencing on **[*]** , MSK will conduct and complete a full manufacturing transfer to Licensee (and/or its designated contract manufacturing organization(s)) of all existing MSK technology and manufacturing know-how and methods and materials relating to Licensed Product manufacturing, such technology transfer to be conducted on a reasonable, diligent time frame so as to enable completion of the transfer promptly and on a timely basis (taking into account Licensee's product development schedule and needs). In connection therewith, MSK agrees to make reasonably available its personnel to assist Licensee with transfer of manufacturing operations to a new facility, including assistance with understanding all the transferred technology and manufacturing information, at no FTE expense to the Licensee. For clarity, the assistance to be provided by MSK does not include transferring equipment, but does include full transfer of all manufacturing SOPs and the identity of the and source of the equipment used in MSK's manufacturing of Licensed Products.

9.3 Licensed Product Supply . The terms of the Parties' agreement governing MSK's manufacture and supply of Licensed Products to Licensee of its (and its Affiliates' and Sublicensees') requirements for Licensed Products for use in clinical trials during development, are set forth in the Manufacturing Services Agreement entered into by the Parties concurrent with this Agreement (" **Manufacturing Services Agreement** ").

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

9.4 Library . The terms of the Parties' agreement governing the maintenance, improvement and augmentation of the Library and Databases, and the transfer of the Library and Databases to Licensee and its designee(s), are set forth in the Manufacturing Services Agreement.

ARTICLE 10 – CONFIDENTIALITY

Each Party agrees that Confidential Information of the other Party disclosed to it or to its employees under this Agreement shall for **[*]** after the end of the Term:

(a) be used only in connection with the legitimate purposes of, including exercise by such Party of its rights under, this Agreement;

(b) be disclosed only to those who have a need to know it in connection with the Agreement; and

(c) be safeguarded with the same care normally afforded confidential information in the possession, custody or control of the party holding the Confidential Information but no less than reasonable;

(d) not be disclosed, divulged or otherwise communicated except with the express written consent of the disclosing Party, or as otherwise expressly permitted in this Agreement.

The foregoing shall not apply with respect to particular Confidential Information that:

(i) can be demonstrated to have been in the public domain prior to the date of the disclosure; or

(ii) enters the public domain through no fault of the receiving Party; or

(iii) was already known to the receiving Party at the time of disclosure as evidenced by written records in the possession of the receiving Party prior to such time; or

(iv) is subsequently received by the receiving Party from a third party without breaching any confidential obligation between the third party and the disclosing Party; or

(v) was independently developed, as established by tangible evidence, by the receiving Party without reference to the Confidential Information of the disclosing Party.

Notwithstanding the foregoing, a receiving Party may disclose particular Confidential Information of the disclosing Party to the extent such information is required to be

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

disclosed in order to comply with court orders, statutes or regulations,*provided that* prior to any such disclosure, to the extent reasonably practicable, the Party from whom disclosure is sought shall promptly notify the other Party and shall afford such other party the opportunity to challenge or otherwise lawfully seek limits upon such disclosure of Confidential Information, and that the disclosing Party only discloses such Confidential Information as is legally required to be disclosed, taking into account any protective or other order limiting or quashing the disclosure obligation.

Further, notwithstanding the foregoing, Licensee (or its Affiliate or Sublicensee) may disclose Confidential Information of MSK: (a) as reasonably needed to prosecute or enforce Licensed Patent Rights; (b) to regulatory authorities as reasonably needed to develop and/or obtain or maintain regulatory approvals of Licensed Products; (c) in confidence to its Affiliates and Sublicensees as reasonably needed to research, develop and/or commercialize Licensed Products; (d) in confidence to prospective sublicensee, strategic partners, merger partners or acquirers, and their respective professional advisors, in connection with evaluation and/or negotiation of possible sublicense, corporate partnering, merger, asset purchase or other similar transactions; (e) as required in order to comply with applicable law or regulations, including securities laws and securities exchange requirements; (f) in confidence to its existing investors and professional advisors and to potential investors and their professional advisors; and (g) as reasonably needed to conduct or defend any litigation relating to this Agreement, the Licensed Products or Licensee's rights hereunder.

ARTICLE 11 – INDEMNIFICATION, PRODUCT LIABILITY

11.1 Licensee shall indemnify, defend and hold harmless MSK and its trustees, directors, officers, medical and professional staff, employees, students, and agents and their respective successors, heirs, and assigns (each an " **Institution Indemnitee** "), against all costs, liabilities and expenses (including legal expenses and reasonable attorney's fees) (" **Costs** ") resulting directly from a third party claim, proceeding, or demand against an Institution Indemnitee (a " **Claim** ") to the extent arising directly out of: (a) the death of or injury to any person or persons, or any damage to property, resulting from the development or commercialization of a Licensed Product by Licensee or its Affiliate or Sublicensee under this Agreement; (b) production, manufacture, sale, use, lease, consumption, or advertisement of Licensed Products hereunder by Licensee or its Affiliate or Sublicensee, or (c) the breach by Licensee of any of its representations, warranties or obligations under this Agreement or any Ancillary Agreement, provided however, that Licensee will not be obligated to indemnify, defend and hold harmless any Institution Indemnitee against any Cost or Claim to the extent it arises out of, results from, or is increased by (w) MSK's or an Institution Indemnitee's breach of its representations or warranties under this Agreement or the Manufacturing Services Agreement, (x) MSK's or an Institution Indemnitee's willful misconduct or gross negligence, or (y) MSK's supplying to Licensee a Licensed Product manufactured by (or on behalf of) MSK that does not conform to the specifications therefor or to FDA manufacturing requirements or guidance, or has otherwise not been manufactured

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

in accordance with the requirements of the Manufacturing Services Agreement), or (z) any clinical trials conducted by, or other use of any Licensed Product by, MSK or its Affiliate at any time, other than under authority of Licensee.

11.2 The Institution Indemnitee will promptly give notice to Licensee of any covered Claims for which it seeks indemnification hereunder, and Licensee will have the right to defend the same, including selection of counsel reasonably acceptable to MSK, and to control of all the proceedings; *provided* that Licensee will not, without the written consent of the Institution Indemnitee, settle such Claim or consent to the entry of any judgment to the extent that such settlement or judgment: (i) does not release the Institution Indemnitee from all liability with respect to such third party Claim, or (ii) likely will materially adversely affect the Institution Indemnitee or under which the Institution Indemnitee would incur any material obligation or liability. MSK and each applicable Institution Indemnitee agrees to cooperate and provide all reasonable assistance to the defense of any such Claim, at Licensee's expense. MSK at all times reserves the right to select and retain counsel of its own at its own expense to defend MSK's interests, *provided* that MSK shall be responsible for any Costs incurred or resulting from any actions of such counsel that are contrary to Licensee's control or conduct of the defense.

11.3 Licensee shall obtain and carry in full force and effect general liability insurance in amounts reasonably consistent with industry standards in regard to potential liability, conduct, and events covered by Section 11.1 above. Such insurance shall be written by a reputable insurance company, and shall be endorsed to include liability coverage. The limits of such insurance shall not be less than **[*]** per occurrence with an annual aggregate of**[*]** . Licensee shall provide MSK with Certificates of Insurance evidencing the same and provide MSK with prior written notice of any material change in or cancellation of such insurance.

ARTICLE 12 – REPRESENTATIONS, WARRANTIES AND DISCLAIMERS

12.1 Representations and Warranties of Licensee.

(a) Licensee hereby represents and warrants to MSK that as of the Effective Date, to its knowledge, the execution and performance of Licensee's obligations under this Agreement does not conflict with, cause a default under, or violate any existing contractual obligation that may be owed by Licensee to any third party.

(b) Licensee hereby represents and warrants to MSK that it is a corporation duly organized, validly existing and in good standing and has all requisite corporate power and authority to execute and deliver this Agreement.

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

12.2 Representations and Warranties of MSK.

(a) MSK hereby represents and warrants to Licensee that, as of the Effective Date, to the best of MSK's knowledge, the execution and performance of MSK's obligations under this Agreement do not conflict with, cause a default under, or violate any existing contractual obligation that may be owed by MSK to any third party.

(b) MSK hereby represents and warrants to Licensee that it is a corporation duly organized, validly existing and in good standing and has all requisite corporate power and authority to execute and deliver this Agreement, and that it has the lawful right to grant the license and other rights granted to Licensee in the License Agreement.

(c) MSK hereby represents and warrants to Licensee that: (i) **[*]**; (ii) **[*]**, including **[*]**; (iii) **[*]** and **[*]** in this Agreement, subject to **[*]**.

(d) MSK hereby represents and warrants to Licensee that all clinical trials of Licensed Products containing or based on cells in the Library and conducted by or on behalf of MSK have been conducted pursuant to standard forms of informed consent.

(e) MSK hereby represents and warrants to Licensee that its manufacturing of all cells and cell lines used in clinical trials (through the Effective Date) has been, and will continue to be under this Agreement (to the extent such cells or cell lines are supplied to Licensee, or to itself or third parties on Licensee's behalf hereunder), in accordance with governing protocols, methods and procedures as required by the FDA for MSK's manufacturing of Licensed Product for use in clinical trials.

(f) MSK hereby represents and warrants to Licensee that, as of the Effective Date, (i) **[*]**, (ii) **[*]**; (iii) **[*]**; (iv) **[*] [*]**; (v) **[*]**; (vi) **[*]**; and (vii) **[*]**.

12.3 Disclaimer of Warranties .

OTHER THAN THE WARRANTIES SET FORTH IN SECTION 12.2, MSK MAKES NO OTHER REPRESENTATIONS AND EXTENDS NO OTHER WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, VALIDITY OF PATENT RIGHTS, ISSUED OR PENDING, OR THAT THE LICENSED PRODUCTS OR RIGHTS GRANTED DO NOT INFRINGE THE PATENT RIGHTS OF OTHERS. ANY AND ALL SUCH OTHER WARRANTIES ARE HEREBY DISCLAIMED.

12.4 Limitation of Damages .

IN NO EVENT SHALL EITHER PARTY BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, SPECIAL, INCIDENTAL, OR PUNITIVE DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT, INCLUDING BUT NOT LIMITED TO LOST PROFITS, FROM ITS PERFORMANCE OR NONPERFORMANCE OF ITS OBLIGATIONS UNDER THIS AGREEMENT.

ARTICLE 13 – COMPLIANCE WITH LAW

13.1 It is understood that MSK is subject to United States laws and regulations controlling the export of technical data, computer software, laboratory prototypes and other commodities (including the Arms Export Control Act, as amended and the Export Administration Act of 1979), and that its obligations hereunder are contingent on compliance with applicable United States export laws and

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

regulations. The transfer of certain technical data and commodities may require a license from the cognizant agency of the United States Government and/or written assurances by Licensee that Licensee shall not export data or commodities to certain foreign countries without prior approval of such agency. MSK neither represents that a license shall not be required nor that, if required, it shall be issued.

13.2 Licensee shall in all respects conduct its activities under this Agreement, and shall cause its Affiliates, and shall use reasonable efforts to cause its Sublicensees, to conduct their activities under this Agreement, in full compliance with all applicable laws and regulations. Without limiting the generality of the foregoing, Licensee shall use Commercially Reasonable Efforts to cause Licensed Products be manufactured in all material respects in accordance with applicable federal, state and local laws, rules and regulations, including, without limitation, in all material respects in accordance with all applicable rules and regulations of the FDA.

13.3 Licensee shall to the extent required by law substantially manufacture in the United States any Licensed Product to be sold in the United States, except if an exception to such requirement is obtained.

13.4 To the extent required by law, or if the failure to mark would reduce the rights of MSK or Licensee to enforce the Licensed Patent Rights against infringers, Licensee shall mark, and shall cause its Affiliates and Sublicensees to mark, any Licensed Products (or the packaging thereof) with the appropriate Licensed Patent Rights.

ARTICLE 14 – NON-USE OF MSK'S NAME

Licensee shall not use the names of MKSCC, including Memorial Sloan Kettering Cancer Center, Sloan Kettering Institute for Cancer Research, and Memorial Hospital for Cancer and Allied Diseases, nor any of their employees, nor any adaptation thereof, in any public announcements, publicity or advertising without prior written consent obtained from MSK in each case, except as otherwise expressly permitted in this Agreement. MSK agrees that Licensee may issue a press release regarding this Agreement in the form attached as Exhibit E . In acknowledgement that Licensee may need to use the name of MSK or the MSK investigators in furtherance of the Licensee's efforts to obtain financing, in connection with strategic or licensing discussions, and in other legitimate business matters of the Licensee, MSK agrees that Licensee may disclose in confidence to such parties (and their professional advisors) the terms of this Agreement, and for any additional disclosures regarding MSK or MSK investigators that Licensee requests to make so such parties, MSK shall use good faith efforts to secure prior written consent for such use in a timely manner in line with its business practices following receipt of a written request for such use by Licensee. For clarity, Licensee may request MSK pre-approve documents which make use the name of MSK for use in non-public and/or confidential venues in furtherance of the Licensee's efforts to obtain financing, negotiate licenses, and secure personnel: upon receipt of such written pre-approval, Licensee may use the name of MSK in such non-public and/or confidential venues without prior written consent in each case to the extent such use does not deviate significantly from the pre-approved documents. Notwithstanding the foregoing, Licensee may disclose in confidence that Licensee has the Agreement and license rights granted hereunder

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

from MSK, and the general terms of the Agreement. Further, Licensee shall be free to continue to publish or disclose specific information about MSK or this Agreement that MSK has previously consented, pursuant to the above, may be publicly disclosed by Licensee, but only in the form, manner, and extent of MSK's prior approval. Further, MSK agrees that Licensee may disclose in SEC and other similar regulatory filings the existence and general terms of this Agreement and the names of the parties to the Agreement, and material developments under this Agreement to the extent such disclosures must be made to comply with applicable laws, regulations and/or securities exchange rules.

ARTICLE 15 – PUBLICATION

Licensee recognizes and accepts that under MSK's mission as an academic medical center, MSK and its investigators must have a meaningful right to publish without Licensee's prior approval or editorial control, but subject to reasonable prior review and comment. Subject to the following, MSK reserves the right to publish the scientific findings from research and clinical trials (to the extent permitted by Licensee as provided below) related to Licensed Rights and Licensed Products. Prior to making any proposed publication (e.g., manuscript, abstract or other public disclosure), of data and results relating to the Licensed Tangible Materials and/or Licensed Know-How and/or Licensed Products, and/or that contains Confidential Information of Licensee or its Affiliates, MSK will submit the abstract or manuscript to Licensee and to the IP Committee at least **[*]** before public submission or disclosure thereof. The IP Committee shall immediately review such proposed publication or submission to determine if there are any impacts on potentially patentable inventions and shall inform the Parties of its determinations. Licensee shall have the right to review and comment upon the proposed public disclosure in order to protect such Confidential Information and the patentability of any inventions disclosed therein, and may request that certain results, data or information not be disclosed if such disclosure likely would negatively impact the development or commercialization of any Licensed Product, and MSK will reasonably consider all such requests. Further, upon Licensee's request, public disclosure shall be delayed **[*]** to enable MSK to secure adequate intellectual property protection of any patentable or trade secret subject matter contained therein that would otherwise be negatively affected by the publication. For clarity, publication of clinical data from permitted clinical trials by MSK on Licensed Products shall be pursuant to the terms of the applicable clinical trial agreement, investigator sponsored trial agreement or other agreement with Licensee.

ARTICLE 16 – ASSIGNMENT

A Party may not assign or delegate its rights or obligations under this Agreement or any Ancillary Agreement, or transfer or assign this Agreement or any Ancillary Agreement, without the prior written consent of the other Party, such consent not to be unreasonably withheld, except that (a) Licensee shall have the right to assign any of its rights, delegate any of its obligations, or transfer this Agreement or any Ancillary Agreement without such consent (i) to its Affiliate or (ii) as part of a merger or acquisition, and (b) MSK may without consent of Licensee freely assign all or any portion of the payments due under this Agreement to a Third Party, *provided that* **[*]** and **[*]**

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

[*] . Any assignment by Licensee shall bind its assignee to all provisions of this Agreement (or the applicable Ancillary Agreement, as the case may be), including without limitation those concerning dispute resolution (choice of law, choice of forum, and consent to jurisdiction in New York). Any assignment, delegation or transfer by any party without the consent of the other party shall be void and of no effect. For clarity, nothing in the foregoing shall limit Licensee's (or its Affiliate's or Sublicensee's) ability to grant sublicenses or to engage contractors to perform obligations on behalf of any such party.

ARTICLE 17 – TERMINATION

17.1 Term . The term of this Agreement (the "**Term** ") commences on the Effective Date and continues until expiration upon the end of all Royalty Terms, or until the earlier termination of the Agreement pursuant to the below termination provisions. Upon expiration of the Agreement at the end of all Royalty Terms and payment of all amounts owed hereunder, the license rights granted to Licensee under Section 2.1 shall survive as non-exclusive, royalty-free, fully-paid, perpetual, irrevocable licenses.

17.2 Bankruptcy or Cessation/Enjoinder of Business . MSK may terminate this Agreement upon written notice to Licensee if: (a) a petition in bankruptcy is filed against Licensee and is consented to or acquiesced in by Licensee, or remains undismissed for **[*]** ; (b) Licensee makes a general assignment for the benefit of creditors, or a receiver is appointed for Licensee over all or substantially all of Licensee assets, and Licensee does not return to solvency before the expiration of a **[*]** period; or (c) Licensee ceases to do business.

17.3 Nonpayment . If Licensee fails to pay MSK fees, royalties, ongoing patent expenses or other amounts payable hereunder, and such payments remain past due for more than **[*]** , MSK shall have the right to give Licensee written notice of such past due amount and may terminate this Agreement on a subsequent written notice, unless Licensee pays to MSK within **[*]** after giving such notice all such past due fees, royalties and patent expenses, except that MSK shall not terminate during the pendency of the following dispute resolution procedures if initiated by Licensee: Licensee shall **[*]** provide MSK with a written notice of the basis of such dispute and the factual basis for its disputing the payment obligation (such dispute, a " **Payment Dispute** "). The Parties shall promptly engage in nonbinding evaluative mediation in an attempt to resolve the dispute. If the mediation fails to resolve the dispute, the Parties shall request the mediator to provide his written evaluation of the merits of the dispute and either Party then may commence litigation to resolve the dispute, and MSK agrees that **[*]** and **[*]** . So long as **[*]** , MSK shall have no right to terminate the Agreement **[*]** . If **[*]** , under the terms of

the Agreement, **[*]** , then **[*]** . For clarity, MSK's right to terminate for breach for nonpayment **[*]** during the dispute resolution process. For further clarity, and notwithstanding anything in the above, it is agreed by the Parties that Licensee may **[*]** , or **[*]** , and **[*]** .

17.4 Material Breach . In addition to any other applicable termination right specified in this Agreement, but subject to Sections 17.5, 17.8, and 17.9, if Licensee materially breaches this Agreement, then MSK may give licensee written notice specifying in reasonable detail the breach and its intention to terminate this Agreement if such breach is not timely cured. In the case of such material breach and such notice is given, if Licensee does not cure such breach prior to the expiration of the **[*]** period after receipt of such notice, then MSK may terminate the Agreement on written notice, *provided that* (a) If such breach is not curable, then MSK may terminate the Agreement immediately on written notice, and (b) if such breach is not curable within such **[*]** cure period, but is likely curable, using diligent efforts, within **[*]** after such notice, then MSK may not terminate the Agreement so long as Licensee is using diligent efforts to cure such breach, and cures the breach prior to the end of such **[*]** period.

17.5 Effect on Sublicensees . All sublicenses, and rights of Affiliates and Sublicensees, will terminate as of the effective date of termination of this Agreement, provided, however, that if at the effective date of termination any Sublicensee is in good standing with regard to its obligations under its sublicense and agrees to assume the applicable obligations of Licensee hereunder (provided that such obligations shall not include economic obligations under Article 5, which shall be replaced by the economic obligations under the sublicense agreement), then, at the request of the Sublicensee, such sublicense shall survive such termination or expiration of this Agreement and be assigned to MSK, and MSK shall accept such assignment; *except that* , in such case the obligations of MSK to Sublicensee shall not exceed the obligations of MSK to Licensee under this Agreement.

17.6 Termination by Licensee . Licensee has the right to terminate this Agreement on written notice to MSK, in the event that **[*]** . In the event of such termination by Licensee under this Section 17.6, it shall at MSK's request (i) reassign to MSK at no cost all INDs that were assigned by MSK to Licensee under this Agreement or the Option Agreement, and (ii) negotiate reasonably and in good faith for the assignment to MSK or its designee Licensee's regulatory applications, filings, dossiers, and the like for Licensed Products, including the business terms for such assignment.

17.7 Discontinuation of use of Licensed Rights in the Event of Termination. If this Agreement is terminated under Section 17.4 for uncured material breach by Licensee, all rights of Licensee and its Affiliates to use the Licensed Rights or to sell Licensed Products shall terminate; and Licensee and its Affiliates shall make no further use of the Licensed Rights (*except that* the foregoing shall not apply to any Licensed Rights that are, or thereafter become, in the public domain, other than through the fault of Licensee, its Affiliates, or Sublicensees). If this Agreement is terminated at Licensee's election pursuant to Section 17.6, all rights of Licensee, its Affiliates, and Sublicensees to use the Licensed Rights or to sell Licensed Products shall terminate; and Licensee, its Affiliates, and Sublicensees shall make no further use of the Licensed Rights (*except that* the foregoing shall not apply to any Licensed Rights that are, or thereafter become, in the public domain, other than through the fault of Licensee, its Affiliates, or Sublicensees).

17.8 Survival . Upon any expiration or termination of this Agreement, the following shall survive:

(a) any provision expressly indicated to survive;

(b) any liability which any Party has already incurred to another Party prior to expiration or termination;

(c) Licensee's reporting and payment obligations for activities occurring prior to expiration or termination, and MSK's audit rights;

(d) in the case of termination by Licensee under Section 17.6, Sections 5.1(b), 5.1(d), and 5.1(e), until all activities by Licensee, its Affiliates, and Sublicensees that would otherwise create an obligation of payment by Licensee under those sections are discontinued, and

(e) Articles 10, 11, 18, and 19, and Sections 7.5 and 12.4.

17.9 MSK's remedies for breach by Licensee of the last sentence of Section 2.1 shall not include any right to terminate this Agreement, but shall otherwise include all remedies and relief as may be available under governing law, including to the extent applicable an award of damages, an injunction against continued breach, equitable relief, and such other remedies as may be available.

ARTICLE 18 – NOTICES AND OTHER COMMUNICATIONS

Except for payments, each notice or other communication pursuant to this Agreement shall be sufficiently made or given when delivered by courier or other means providing proof of delivery to such party at its address below or as it shall designate by written notice given to the other party:

In the case of MSK:	Memorial Sloan Kettering Cancer Center Office of Technology Development
If by mail:	1275 York Ave., Box 524 New York, NY 10065
If by courier:	600 Third Avenue, 16th floor New York, NY 10016 Attn: Vice President, Technology Development Tel: 1-212-639-6181 (not for notice) Fax: 1-212-888-1120 (not for notice)
With copies to:	Memorial Sloan Kettering Cancer Center Office of General Counsel
If by mail:	1275 York Ave. New York, NY 10065
If by courier:	1275 York Ave. New York, NY 10065 Attn: General Counsel Tel: 1-212-639-5800 (not for notice) Fax: 1- 212-717-3517 (not for notice)
In the case of Licensee:	Atara Biotherapeutics, Inc. 701 Gateway Blvd. Suite 200 South San Francisco, CA 94080 Attn: CEO

ARTICLE 19– MISCELLANEOUS PROVISIONS

19.1 Governing Law . This Agreement shall be construed, governed, interpreted and applied in accordance with the laws of the State of New York, without giving effect to any choice/conflict of law principles, except that questions affecting the construction and effect of any patent shall be determined by the law of the country in which the patent was filed or granted.

19.2 Jurisdiction . The state and federal courts located in New York County, New York, shall have exclusive jurisdiction of any claims or actions between or among the parties arising out of or relating to this Agreement or any aspect of the parties' relationship, and each party consents to venue and personal jurisdiction of those courts for the purpose of resolving any such disputes.

19.3 Severability . Except to the extent a provision is stated to be essential, or otherwise to the contrary, or such provision is material and essential to the main purpose and intent of the Agreement, the provisions of this Agreement are severable, and in the event that any provisions of this Agreement shall be determined to be invalid or

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

unenforceable under any controlling body of the law, such invalidity or unenforceability shall not in any way affect the validity or enforceability of the remaining provisions hereof, *provided that* the Parties will endeavor in good faith to agree on a replacement, valid provision, to add to this Agreement in the stead of such invalid provision, that comes closest to achieving the intent of the Parties in such provision.

19.4 Waiver . The failure of either party to assert a right hereunder or to insist upon compliance with any term or condition of this Agreement shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition by the other party.

19.5 Counterparts . This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be an original and all such counterparts shall together constitute but one and the same agreement.

19.6 Force Majeure . A Party shall not lose any rights hereunder or be liable to the other Party for damages or losses (except for payment obligations) on account of a delay or failure of performance by the such party to the extent such the delay or failure is occasioned or caused by war, strike, fire, Act of God, tornado, hurricane, earthquake, fire, flood, lockout, embargo, governmental acts or orders or restrictions (except if imposed due to or resulting from the party's violation of law or regulations), failure of suppliers, or any other circumstance or reason where the delay or failure to perform is beyond the reasonable control of such Party (a " **Force Majeure** "), and *provided that* such failure is not caused by the gross negligence or intentional misconduct of the Party and the Party has exerted reasonable efforts to avoid or remedy the effects of such Force Majeure; However, if a Force Majeure event causes a material failure of performance by a Party for a period of more than six months, then the other Party may terminate this Agreement on written notice. For clarity, a failure to obtain funding shall not constitute a force majeure event.

19.7 Entire Agreement . This Agreement, including its attachments and exhibits (which attachments and exhibits are incorporated herein by reference), constitutes the entire understanding among and between the parties with respect to the subject matter hereof, and supersedes all prior agreements and communications, whether written, oral or otherwise. This Agreement may only be modified or supplemented in a writing expressly stated for such purpose and signed by the parties to this Agreement.

19.8 Relationship between the Parties . The relationship between the parties under this Agreement is that of independent contractors. Nothing contained in this Agreement shall be construed to create a partnership, joint venture or agency relationship between any of the parties. No party is a legal representative of any other party, and no party can assume or create any obligation, liability, representation, warranty or guarantee, express or implied, on behalf of another party for any purpose whatsoever.

19.9 Construction and Interpretation . Words (including defined terms) denoting the singular shall include the plural and vice versa. The words “hereof”, “herein”, “hereunder” and words of the like import when used in this Agreement shall refer to this Agreement as a whole, and not to any particular provision of this Agreement. The term “including” (and any variant thereof), and the giving of examples, shall not be construed as terms of limitation and shall be deemed to mean “including without limitation”. The headings in this Agreement shall not affect its interpretation. Except as expressly provided herein, the rights and remedies herein provided shall be cumulative and not exclusive of any other rights or remedies provided by law or otherwise. Each of the parties has had an opportunity to consult with counsel of its choice. Each provision of this Agreement shall be construed without regard to the principle of contra proferentem. If any provision of this Agreement is held to be invalid or unenforceable the validity of the remaining provisions shall not be affected. The parties shall replace the invalid or unenforceable provision by a valid and enforceable provision closest to the intention of the parties when signing this Agreement. This Agreement was negotiated, and shall be construed and interpreted, exclusively in the English language.

[Signature Page Follows]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

IN WITNESS WHEREOF , authorized representatives of the Parties have executed this Agreement below.

ATARA BIOTHERAPEUTICS, INC.

By: /s/ Isaac Ciechanover
Name: Isaac Ciechanover
Title: CEO

MEMORIAL SLOAN KETTERING CANCER CENTER

By: /s/ Gregory Raskin, MD
Name: Gregory Raskin, MD
Title: Vice President
Technology Development

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit A

Licensed Tangible Materials and Licensed Know How

Licensed Tangible Materials .

[*]

Licensed Know-How .

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit B

Form of Diligence Report

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit C

Licensed Patent Rights

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit D

Excluded Patents

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit E

Form of Press Release

Atara Biotherapeutics Exercises Exclusive License to T-Cell Technology from Memorial Sloan Kettering Cancer Center

Activated T-cell Technology Designed to Harness Immune System to Fight Cancer and Infectious Disease

South San Francisco, Calif., June 15, 2015 – Atara Biotherapeutics, Inc. (Nasdaq: ATRA) today announced that it has exercised its exclusive option with Memorial Sloan Kettering Cancer Center (MSK) to license certain clinical stage, allogeneic T-cell therapies for the treatment of cancers and persistent viral infections. In connection with the exercise of the option, the Atara Bio license agreement with MSK grants Atara Bio exclusive worldwide rights to the following three allogeneic T-cell therapies:

- T-cells activated against Epstein Barr Virus, or EBV (Phase 2);
- T-cells activated against Cytomegalovirus, or CMV (Phase 2); and
- T-cells activated against Wilms Tumor 1, or WT1 (Phase 1)

These three programs share a common technology, under which third-party donor-derived whole blood is collected and enriched for T lymphocytes, or T-cells. The T-cells are then exposed to certain antigens, and the resulting activated T-cells are characterized and stored for future therapeutic use. Using a proprietary algorithm, patients are treated with a partially human leukocyte antigen, or HLA, matched cell line, providing an “off-the-shelf,” allogeneic, cellular therapeutic option for patients. These T-cell products are intended to work by targeting the abnormal cells expressing the applicable target antigen and killing them.

Atara Bio announced earlier this year that its collaborating investigator at MSK received breakthrough therapy designation from the U.S. Food and Drug Administration for its cytotoxic T lymphocytes (CTL) activated against Epstein-Barr Virus (EBV-CTL) in the treatment of patients with rituximab-refractory, EBV-associated lymphoproliferative disease (EBV-LPD).

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Clinical data have been presented as follows:

- EBV-CTL in the treatment of patients with EBV-LPD after solid organ transplantation at the 2015 American Society of Clinical Oncology Annual Meeting.
- EBV-CTL in the treatment of patients with EBV-LPD after allogeneic hematopoietic cell transplantation (HCT) at a Clinical Trial Plenary Session at American Association for Cancer Research Annual Meeting 2015
- CMV-CTL in the treatment of patients with anti-viral resistant CMV after HCT including viremia only and CMV disease at the American Society of Hematology Annual Meeting 2014.

“Licensing these programs more than doubles the clinical stage programs active at Atara Bio and provides a potential platform technology that can be directed at other targets,” said Isaac Ciechanover, MD, Chief Executive Officer and President of Atara Bio. “Our T-cell programs use third party donor cells, and, if approved by regulatory authorities, will be available as “off-the-shelf” therapies for patients in need.”

Richard O’Reilly, MD, Chair of the Department of Pediatrics and Chief of the Pediatric Bone Marrow Transplant Service at MSK, notes that “We are delighted that Atara will continue to develop our existing T-cell technologies that have shown promising clinical benefit in patients. We also look forward to expanding the platform to treat patients with other types of cancer through our sponsored research efforts with Atara.” Dr. O’Reilly will join Atara Bio’s Scientific Advisory Board.

In connection with the exercise of the option and entry into the exclusive license agreement, MSK received an upfront license fee and will be eligible to receive additional payments based on the achievement of certain development, regulatory and sales-related milestones, as well as royalty payments. Atara Bio and MSK have agreed to collaborate on further research to develop additional cellular therapies, which may include T-cell therapies targeted against other antigens and/or chimeric antigen receptor-modified T-cells, known as CAR-T.

About Atara Biotherapeutics, Inc.

Atara Biotherapeutics, Inc. is a biopharmaceutical company focused on developing innovative therapies for patients with debilitating diseases. Atara Bio’s programs include molecularly-targeted product candidates and T-cell product candidates. The molecularly-targeted product candidates include PINTA 745, STM 434 and ATA

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

842, targeting myostatin and activin, members of the TGF-beta family of proteins that have demonstrated the potential to have therapeutic benefit in a number of clinical indications. T-cell product candidates include EBV-CTL, CMV-CTL and WT1-CTL.

Forward-Looking Statements

This press release contains or may imply “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Because such statements deal with future events and are based on Atara Bio’s current expectations, they are subject to various risks and uncertainties and actual results, performance or achievements of Atara Bio could differ materially from those described in or implied by the statements in this press release. For example, forward-looking statements include statements regarding the clinical development of product candidates and Atara Bio’s collaboration with MSK. These forward-looking statements are subject to other risks and uncertainties, including those discussed under the heading “Risk Factors” in Atara Bio’s quarterly report on Form 10-Q for the quarter ended March 31, 2015 and subsequent filings with the Securities and Exchange Commission. Except as otherwise required by law, Atara Bio disclaims any intention or obligation to update or revise any forward-looking statements, which speak only as of the date hereof, whether as a result of new information, future events or circumstances or otherwise.

INVESTOR & MEDIA CONTACT:
Tina Gullotta, Atara Biotherapeutics, Inc.
650-741-1613
tgullotta@atarabio.com

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit F

Form of Material Transfer Agreement

FORM OF MATERIAL TRANSFER AGREEMENT

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

AGREEMENT FOR INTER-INSTITUTIONAL
TRANSFER OF MATERIAL
Between
ACADEMIC COLLEAGUES
("Agreement")

1. Memorial Sloan Kettering Cancer Center ("MSK") and INSERT NAME ("INSTITUTION") agree that MSK will provide INSTITUTION with [INSERT DESCRIPTION OF MATERIAL] ("MATERIAL"), subject to all the terms of this Agreement.

2. MATERIAL and any related confidential information, including but not limited to, all non-public, confidential or proprietary information that MSK designated or otherwise marked as "Confidential" ("INFORMATION") will be sent by Dr. _____ of MSK ("INVESTIGATOR") to INSTITUTION.

3. INSTITUTION shall use MATERIAL and INFORMATION solely for the following purpose: [INSERT PURPOSE] ("STUDY") as described in Exhibit A. INSTITUTION shall not use or permit the use of the MATERIAL and/or INFORMATION for any use or purpose other than conducting the STUDY.

4. MSK retains exclusive ownership of MATERIAL and INFORMATION and may distribute MATERIAL and INFORMATION to other commercial or non-commercial entities.

5. INSTITUTION will NOT use MATERIAL in humans.

6. INSTITUTION shall not transfer MATERIAL or INFORMATION to any non-INSTITUTION person or entity without prior written consent from MSK.

7. INSTITUTION represents that its use of MATERIAL and INFORMATION will be in compliance with all applicable laws and regulations.

8. INSTITUTION agrees to hold in confidence for a period of **[*]** , all INFORMATION received from MSK under this Agreement, except for information which:

    a) was lawfully in INSTITUTION's possession or control prior to the date of disclosure as evidenced by written records; or

    b) was in the public domain or enters into the public domain through no improper act on INSTITUTION's part or on the part of any of INSTITUTION's employees;

    c) is rightfully given to INSTITUTION from sources independent of MSK; or

    d) is independently developed by INSTITUTION, as evidenced by written records; or

    e) must be disclosed for minimum lawful compliance with court orders, regulations and statutes.

9. INSTITUTION will report all STUDY results to INVESTIGATOR. MSK and INSTITUTION may use STUDY results for any internal non-commercial research or educational purpose. INSTITUTION may publish such results, *provided that* prior to any submission for such publication, INSTITUTION shall provide the draft publication to MSK at least **[*]** prior to the submission, so that MSK may review such publication for any potentially patentable information, and at MSK's request, INSTITUTION will delay such submission for up to **[*]** to permit MSK to prepare and file patent applications covering such information. MSK may disclose the STUDY results to its commercial licensee of the MATERIAL, and such licensee may use the results for all its internal business purposes.

    If INSTITUTION creates or discovers any inventions or intellectual property relating in any way to the MATERIAL (including improvements or enhancements of or uses of MATERIAL or products based

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

thereon) based on or as a result of conducting the STUDY (the "STUDY IP"), INSTITUTION shall report all such STUDY IP to MSK and provide a detailed description thereof. INSTITUTION grants to MSK a non-exclusive, perpetual, worldwide, royalty-free, fully-paid license under any such STUDY IP for all purposes relating to the MATERIAL and the use, improvement or development thereof (including in products), and MSK may disclose and sublicense (on a non-exclusive basis) such STUDY IP to its commercial licensee of the MATERIAL, for all commercial and business purposes. Further, INSTITUTION agrees that such commercial licensee of the MATERIAL shall have the exclusive option to obtain an exclusive, royalty-bearing license to any such STUDY IP. Such option shall expire **[*]** from the date of the disclosure of the STUDY IP to the commercial licensee. If the licensee exercises such option the INSTITUTION shall negotiate in good faith the commercially reasonable terms of an exclusive, worldwide, royalty-bearing, transferable and sublicensable license to the STUDY IP with commercial licensee.

10. INSTITUTION shall not use the name of Memorial Sloan Kettering Cancer Center, Memorial Hospital for Cancer and Allied Diseases or Sloan-Kettering Institute for Cancer Research, or a variant of any of the foregoing in any advertising or publicity matter without the prior written approval of MSK.

11. MATERIAL is being provided by MSK **"** AS IS" WITHOUT ANY WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. MSK MAKES NO REPRESENTATION THAT THE USE OF THE MATERIAL WILL NOT INFRINGE ANY PATENT, COPYRIGHT, TRADEMARK OR OTHER PROPRIETARY RIGHT.

12. In no event shall MSK be liable for any use by INSTITUTION of MATERIAL or for any loss, claim, damage, or liability, of any kind or nature that may arise from or in connection with this Agreement or the use, handling, or storage of MATERIAL. INSTITUTION agrees to assume all liability for damages that arise from its use, storage or disposal of MATERIAL, except to the extent such liability is due to MSK's gross negligence or willful misconduct.

13. INSTITUTION will reimburse MSK $_____ for costs associated with shipping MATERIAL.

14. The Agreement will terminate on the earlier of **[*]** or upon **[*]** prior written notice of one party to the other, in which case INSTITUTION will discontinue within **[*]** its use of MATERIAL. INSTITUTION agrees, upon direction of INVESTIGATOR, to return or destroy MATERIAL upon termination of this Agreement.

15. This Agreement may not be assigned by INSTITUTION without the prior written consent of MSK.

16. Articles 2, 5, 6, 9 and 11 will survive the termination of this Agreement.

17. An authorized representative of each party must sign this Agreement. The Agreement is effective the date of the last signature below ("Effective Date").

Send/fax/email one fully executed Agreement to:

Office of Technology Development
Memorial Sloan Kettering Cancer Center
1275 York Avenue
New York, NY 10065
Ph: (212) 639-6181
Fax: (212) 717-3439

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

INSTITUTION		**MEMORIAL SLOAN KETTERING CANCER CENTER**	
By:	_____	By:	_____
Name:	_____	Name:	Gregory Raskin, M.D.
Title:	_____	Title:	Vice President, Technology Development
Date:	_____	Date:	_____

INSTITUTION Investigator acknowledges that she/he has read and understood her/his and the INSTITUTION's obligations under this Agreement:

Investigator's signature: _____

Name: _____

Date: _____

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit A:

Description of Study

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit G

MSK Investigator Sponsored Trial Protocols

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit 31.1

CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER

PURSUANT TO

SECURITIES EXCHANGE ACT RULES 13A-14(A) AND 15D-14(A)

I, Isaac Ciechanover, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Atara Biotherapeutics, 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)) 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) 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

   (c) 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 6, 2015

/s/ Isaac Ciechanover

Isaac Ciechanover
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF THE CHIEF FINANCIAL OFFICER

PURSUANT TO

SECURITIES EXCHANGE ACT RULES 13A-14(A) AND 15D-14(A)

I, John F. McGrath, Jr. certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Atara Biotherapeutics, 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)) 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) 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

   (c) 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 6, 2015

/s/ John F. McGrath, Jr.
John F. McGrath, Jr.
Chief Financial Officer
(Principal Financial and Accounting 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 Atara Biotherapeutics, Inc. (the "Company") on Form 10-Q for the quarter ended June 30, 2015, as filed with the Securities and Exchange Commission (the "Report"), Isaac Ciechanover, Chief Executive Officer of the Company, and John McGrath, Chief Financial Officer of the Company, respectively, do each hereby certify, 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 15(d) of the Securities Exchange Act of 1934; 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 6, 2015

/s/ Isaac Ciechanover
Isaac Ciechanover
Chief Executive Officer
(Principal Executive Officer)

/s/ John F. McGrath, Jr.
John F. McGrath, Jr.
Chief Financial Officer
(Principal Financial and Accounting Officer)