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, 2018

OR

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

For the transition period from _____ to _____

Commission file number 001-36548

ATARA BIOTHERAPEUTICS, INC.

(Exact name of Registrant as specified in its Charter)

Delaware	**46-0920988**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
611 Gateway Blvd., Suite 900 South San Francisco, CA	**94080**
(Address of principal executive offices)	**(Zip Code)**

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

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

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

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

Large accelerated filer	☐	Accelerated filer	☒
Non-accelerated filer	☐ (Do not check if a small reporting company)	Smaller reporting company	☐
Emerging growth company	☒		

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

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

The number of outstanding shares of the Registrant's Common Stock as of July 27, 2018 was 45,342,653 shares.

ATARA BIOTHERAPEUTICS, INC.

INDEX

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

	June 30, 2018	December 31, 2017
Assets		
Current assets:		
Cash and cash equivalents	$ 103,203	$ 79,223
Short-term investments	313,812	86,873
Restricted cash - short-term	194	194
Prepaid expenses and other current assets	7,861	5,900
Total current assets	425,070	172,190
Property and equipment, net	66,075	44,129
Restricted cash - long-term	1,200	1,200
Other assets	362	260
Total assets	$ 492,707	$ 217,779
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 6,545	$ 14,711
Accrued compensation	5,276	5,664
Accrued research and development expenses	6,661	4,006
Other current liabilities	8,752	3,265
Total current liabilities	27,234	27,646
Long-term liabilities	12,974	12,269
Total liabilities	40,208	39,915
Commitments and contingencies (Note 7)		
Stockholders' equity:		
Common stock—$0.0001 par value, 500,000 shares authorized as of June 30, 2018 and December 31, 2017; 45,334 and 30,730 shares issued and outstanding as of June 30, 2018 and December 31, 2017, respectively	5	3
Additional paid-in capital	841,975	474,662
Accumulated other comprehensive loss	(505)	(151)
Accumulated deficit	(388,976)	(296,650)
Total stockholders' equity	452,499	177,864
Total liabilities and stockholders' equity	$ 492,707	$ 217,779

See accompanying notes.

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Operating expenses:				
Research and development	$ 33,387	$ 18,296	$ 61,847	$ 35,837
General and administrative	19,236	9,613	33,228	18,233
Total operating expenses	52,623	27,909	95,075	54,070
Loss from operations	(52,623)	(27,909)	(95,075)	(54,070)
Interest and other income, net	1,743	481	2,752	990
Loss before provision for income taxes	(50,880)	(27,428)	(92,323)	(53,080)
Provision for income taxes	3	—	3	2
Net loss	$ (50,883)	$ (27,428)	$ (92,326)	$ (53,082)
Other comprehensive loss:				
Unrealized gain (loss) on available-for-sale securities	19	38	(354)	69
Comprehensive loss	$ (50,864)	$ (27,390)	$ (92,680)	$ (53,013)
Net loss per common share:				
Basic and diluted net loss per common share	$ (1.15)	$ (0.94)	$ (2.20)	$ (1.82)
Weighted-average shares outstanding used to calculate basic and diluted net loss per common share	44,379	29,247	42,001	29,152

See accompanying notes.

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

	Six months ended June 30,	
	2018	**2017**
Operating activities		
Net loss	$ (92,326)	$ (53,082)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	15,013	11,003
Amortization of investment premiums and discounts	(756)	459
Depreciation and amortization expense	1,064	428
Non-cash interest expense	125	—
Asset retirement obligation accretion expense	16	—
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(1,961)	(725)
Other assets	(102)	(74)
Accounts payable	(207)	253
Accrued compensation	(388)	(483)
Accrued research and development expenses	2,655	(337)
Other current liabilities	2,545	160
Long-term liabilities	66	63
Net cash used in operating activities	(74,256)	(42,335)
Investing activities		
Purchases of short-term investments	(357,647)	(112,395)
Maturities of short-term investments	51,984	115,349
Sales of short-term investments	79,126	51,711
Purchases of property and equipment	(27,257)	(4,341)
Net cash (used in) provided by investing activities	(253,794)	50,324
Financing activities		
Proceeds from sale of common stock in underwritten offerings, net	293,290	—
Proceeds from issuance of common stock from "at-the-market" facility, net	47,586	9,326
Proceeds from employee stock awards	14,857	495
Taxes paid related to net share settlement of restricted stock units	(3,431)	(341)
Principal payments on capital lease obligations	(272)	—
Net cash provided by financing activities	352,030	9,480
Increase in cash, cash equivalents and restricted cash	23,980	17,469
Cash, cash equivalents and restricted cash at beginning of period	80,617	48,162
Cash, cash equivalents and restricted cash at end of period	$ 104,597	$ 65,631
Non-cash investing and financing activities		
Property and equipment purchases included in accounts payable and other accrued liabilities	$ 5,078	$ 2,502
Facility lease financing obligations	$ 441	$ 10,870
Property & equipment acquired under capital leases	$ 191	$ —
Asset retirement cost	$ 88	$ —
Interest capitalized during construction period for build-to-suit lease transaction	$ 77	$ 95
Supplemental cash flow disclosure		
Cash paid for interest	$ 67	$ —

See accompanying notes.

1. Description of Business

Atara Biotherapeutics, Inc. ("Atara", "we", "our" or "the Company") was incorporated in August 2012 in Delaware. Atara is a T-cell immunotherapy company developing novel treatments for patients with cancer, autoimmune and viral diseases. The Company's "off-the-shelf", or allogeneic, T-cells are engineered from donors with healthy immune function and allow for rapid delivery from inventory to patients without a requirement for pretreatment. Atara's T-cell immunotherapies are designed to precisely recognize and eliminate cancerous or diseased cells without affecting normal, healthy cells.

We licensed rights to T-cell product candidates from Memorial Sloan Kettering Cancer Center ("MSK") in June 2015 and to know-how and technology from QIMR Berghofer Medical Research Institute ("QIMR Berghofer") in October 2015 and September 2016. See Note 6 for further information.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("U.S. GAAP") and follow the requirements of the Securities and Exchange Commission ("SEC") for interim reporting. As permitted under those rules, certain footnotes or other financial information that are normally required by U.S. GAAP can be condensed or omitted. These condensed consolidated financial statements have been prepared on the same basis as the Company's annual consolidated financial statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2017, except that the presentation of total cash, cash equivalents and restricted cash has been conformed to current period presentation. In the opinion of management, the condensed consolidated financial statements reflect all adjustments, consisting only of normal recurring adjustments, which are necessary for a fair statement of the Company's consolidated financial information. The results of operations for the six-month period ended June 30, 2018 are not necessarily indicative of the results to be expected for the full year or any other future period. The condensed consolidated balance sheet as of December 31, 2017 has been derived from audited consolidated financial statements at that date but does not include all of the information required by U.S. GAAP for complete consolidated financial statements.

Liquidity Risk

We have incurred significant operating losses since inception and have relied on public and private equity financings to fund our operations. As of June 30, 2018, we had an accumulated deficit of $389.0 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 our cash, cash equivalents and short-term investments will be sufficient to fund our planned operations to mid-2020.

Concentration of Credit Risk and Other Uncertainties

We place cash and cash equivalents in the custody of financial institutions that management believes are of high credit quality, the amount of which at times, may be in excess of the amount insured by the Federal Deposit Insurance Corporation. We also have short-term investments in money market funds, U.S. Treasury, government agency and corporate debt obligations, commercial paper and asset-backed securities, which can be subject to certain credit risk. However, we mitigate the risks by investing in high-grade instruments, limiting our exposure to any one issuer, and monitoring the ongoing creditworthiness of the financial institutions and issuers.

We are subject to certain risks and uncertainties and believe that changes in any of the following areas could have a material adverse effect on future financial position or results of operations: our ability to obtain future financing; regulatory approval and market acceptance of, and reimbursement for, our product candidates, if approved; performance of third-party clinical research organizations and manufacturers upon which we rely; development of sales channels; protection of our intellectual property; litigation or claims against us based on intellectual property, patent, product, regulatory or other factors; and our ability to attract and retain employees necessary to support our growth.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates, assumptions, and judgments that affect the amounts reported in the financial statements and accompanying notes. Significant estimates relied upon in preparing these financial statements include estimates related to clinical trial and other accruals, stock-based compensation expense, construction costs and income taxes. Actual results could differ materially from those estimates.

Leases

We lease office space in multiple locations. In addition, we recently constructed a manufacturing facility in Thousand Oaks, California under a non-cancelable lease agreement. The leases are reviewed for classification as operating or capital leases. For operating leases, rent is recognized on a straight-line basis over the lease period. For capital leases, we record the leased asset with a corresponding liability for principal and interest. Payments are recorded as reductions to these liabilities with interest being charged to interest expense in our statements of operations and comprehensive loss.

We analyzed the nature of the renovations and our involvement during the construction period of our manufacturing facility and determined that we are the deemed "owner" of the construction project during the construction period. As a result, we are required to capitalize the fair value of the building as well as the construction costs incurred on our condensed consolidated balance sheet along with a corresponding financing liability for landlord-paid construction costs (i.e. "build-to-suit" accounting).

Once construction is complete, the Company considers the requirements for sale-leaseback accounting treatment, including evaluating whether all risks of ownership have been transferred back to the landlord, as evidenced by a lack of continuing involvement in the leased property. If the arrangement does not qualify for sale-leaseback accounting treatment, the building asset remains on the Company's consolidated balance sheets at its historical cost, and such asset is depreciated over its estimated useful life. The Company bifurcates its lease payments into a portion allocated to the building and a portion allocated to the parcel of land on which the building has been built. The portion of the lease payments allocated to the land is treated for accounting purposes as operating lease payments, and therefore is recorded as rent expense in the consolidated statements of operations. The portion of the lease payments allocated to the building is further bifurcated into a portion allocated to interest expense and a portion allocated to reduce the build-to-suit lease obligation. The initial recording of these assets and liabilities is classified as non-cash investing and financing items, respectively, for purposes of the consolidated statements of cash flows.

Asset Retirement Obligations ("ARO")

ARO are legal obligations associated with the retirement of long-lived assets pertaining to leasehold improvements. These liabilities are initially recorded at fair value and the related asset retirement costs are capitalized by increasing the carrying amount of the related assets by the same amount as the liability. Asset retirement costs are subsequently depreciated over the useful lives of the related assets. Subsequent to initial recognition, the Company records period-to-period changes in the ARO liability resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flows. The Company derecognizes ARO liabilities when the related obligations are settled.

Recent Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-02, *Leases (Topic 842)*, which is intended to increase the transparency and comparability in the reporting of leasing arrangements by generally requiring leased assets and liabilities to be recorded on the balance sheet. The new standard is effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2018, with early adoption permitted. We have not yet determined the potential effect the new standard will have on our consolidated financial statements.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments - Credit Losses: Measurement of Credit Losses on Financial Instruments*. ASU 2016-13 requires that expected credit losses relating to financial assets measured on an amortized cost basis and available-for-sale debt securities be recorded through an allowance for credit losses. ASU 2016-13 limits the amount of credit losses to be recognized for available-for-sale debt securities to the amount by which carrying value exceeds fair value and also requires the reversal of previously recognized credit losses if fair value increases. The new standard will be effective for us on January 1, 2020. Early adoption will be available on January 1, 2019. We have not yet determined the potential effect the new standard will have on our consolidated financial statements.

In February 2018, the FASB issued ASU 2018-02, *Income Statement – Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, which allows a reclassification from accumulated other comprehensive income to retained earnings for adjustments to tax effects that were originally recorded in other comprehensive income due to changes in the U.S. federal corporate income tax rate resulting from the enactment of the U.S. tax reform legislation, commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The new standard is effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2018, with early adoption permitted. We have not yet determined the potential effect the new standard will have on our consolidated financial statements.

In March 2018, the FASB issued ASU 2018-05, *Income Taxes (Topic 740) Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118*, to insert the SEC's interpretive guidance from Staff Accounting Bulletin No. 118 into the income tax accounting codification under U.S. GAAP. The ASU permits companies to use provisional amounts for certain income tax effects of the Tax Act during a one-year measurement period. The provisional accounting impacts for the Company may change in future reporting periods until the accounting analysis is finalized, which we expect to complete within the measurement period in accordance with SAB 118.

Adoption of New Accounting Pronouncements

On January 1, 2018, the Company adopted two new accounting standards issued by the FASB that clarify presentation and classification in the statement of cash flows on a retrospective basis. As a result of adoption, amounts generally described as restricted cash and restricted cash equivalents are now presented with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. As a result of adoption, cash, cash equivalents and restricted cash reported on the condensed consolidated statements of cash flows now includes restricted cash of $1.4 million, $1.4 million, and $0.2 million as of December 31, 2017, June 30, 2017, and December 31, 2016, respectively, as well as previously reported cash and cash equivalents.

3. Net Loss per Common Share

Basic net loss per common share is calculated by dividing net loss by the weighted-average number of shares of common stock outstanding during the period, without consideration of common share equivalents. Diluted net loss per common share is computed by dividing 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.

Potential dilutive securities, which include, unvested restricted stock units (“RSUs”), vested and unvested options to purchase common stock and shares to be issued under our employee stock purchase plan (“ESPP”) have been excluded from the computation of diluted net loss per share as the effect is 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 table represents the potential common shares issuable pursuant to outstanding securities as of the related period end dates that were excluded from the computation of diluted net loss per common share as their inclusion would have an antidilutive effect:

	As of June 30,	
	2018	2017
Unvested RSUs	1,797,702	1,801,397
Vested and unvested options	5,718,914	4,482,620
ESPP share purchase rights	9,366	11,562
Total	7,525,982	6,295,579

4. Financial Instruments

Our financial assets are measured at fair value on a recurring basis using the following hierarchy to prioritize valuation inputs, in accordance with applicable GAAP:

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 have been no transfers between Level 1, Level 2 and Level 3 in any periods presented.

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. U.S. Treasury, government agency and corporate debt obligations, commercial paper and asset-backed securities 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 or liabilities.

The following tables summarize the estimated fair value and related valuation input hierarchy of our available-for-sale securities as of each period end:

As of June 30, 2018:	Input Level	Total Amortized Cost	Total Unrealized Gain	Total Unrealized Loss	Total Estimated Fair Value
		(in thousands)			
Money market funds	Level 1	$ 58,908	$ —	$ —	$ 58,908
U.S. Treasury obligations	Level 2	170,458	5	(146)	170,317
Government agency obligations	Level 2	16,868	—	(33)	16,835
Corporate debt obligations	Level 2	133,960	9	(308)	133,661
Commercial paper	Level 2	17,463	—	—	17,463
Asset-backed securities	Level 2	13,661	1	(33)	13,629
Certificate of deposit	Level 2	1,500	—	—	1,500
Total available-for-sale securities		412,818	15	(520)	412,313
Less amounts classified as cash equivalents		(98,499)	(2)	—	(98,501)
Amounts classified as short-term investments		$ 314,319	$ 13	$ (520)	$ 313,812

As of December 31, 2017:	Input Level	Total Amortized Cost	Total Unrealized Gain	Total Unrealized Loss	Total Estimated Fair Value
		(in thousands)			
Money market funds	Level 1	$ 68,730	$ —	$ —	$ 68,730
U.S. Treasury obligations	Level 2	39,068	—	(28)	39,040
Government agency obligations	Level 2	4,749	—	(21)	4,728
Corporate debt obligations	Level 2	46,532	2	(98)	46,436
Commercial paper	Level 2	1,592	—	—	1,592
Asset-backed securities	Level 2	4,122	—	(6)	4,116
Total available-for-sale securities		164,793	2	(153)	164,642
Less amounts classified as cash equivalents		(77,769)	—	—	(77,769)
Amounts classified as short-term investments		$ 87,024	$ 2	$ (153)	$ 86,873

The amortized cost and fair value of our available-for-sale securities by contractual maturity were as follows:

	As of June 30, 2018		As of December 31, 2017	
	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value
	(in thousands)		(in thousands)	
Maturing within one year	$ 339,803	$ 339,500	$ 151,938	$ 151,852
Maturing in one to five years	73,015	72,813	12,855	12,790
Total available-for-sale securities	$ 412,818	$ 412,313	$ 164,793	$ 164,642

As of June 30, 2018, certain available-for-sale securities had been in a continuous unrealized loss position, each for less than twelve months. As of this date, no significant facts or circumstances were present to indicate a deterioration in the creditworthiness of the respective issuers, and the Company has no requirement or intention to sell these securities before maturity or recovery of their amortized cost basis. During the three and six months ended June 30, 2018 and 2017, we did not recognize any other-than-temporary impairment losses.

In addition, restricted cash collateralized by money market funds is a financial asset measured at fair value and is a Level 1 financial instrument under the fair value hierarchy. As of June 30, 2018 and December 31, 2017, restricted cash totaled $1.4 million and $1.4 million, respectively.

The following table provides a reconciliation of cash, cash equivalents and restricted cash within the condensed consolidated balance sheets that sum to the total of the same such amounts in the condensed consolidated statement of cash flows:

	June 30, 2018	December 31, 2017
	(in thousands)	
Cash and cash equivalents	103,203	79,223
Restricted cash - short term	194	194
Restricted cash - long term	1,200	1,200
Total cash, cash equivalents and restricted cash	$ 104,597	$ 80,617

5. Property and Equipment

Property and equipment consisted of the following as of each period end:

	June 30, 2018	December 31, 2017
	(in thousands)	
Leasehold improvements	$ 32,309	$ 623
Construction in progress	19,192	40,797
Build-to-suit asset (see Note 7)	10,686	—
Lab equipment	2,751	2,156
Machinery equipment	1,120	885
Furniture and fixtures	1,628	536
Computer equipment and software	798	477
	68,484	45,474
Less accumulated depreciation and amortization	(2,409)	(1,345)
Property and equipment, net	$ 66,075	$ 44,129

Construction in progress represents capitalized costs for our manufacturing facility in Thousand Oaks, California and capitalizable costs incurred for development of internal use software. Depreciation and amortization expense was $0.7 million and $0.2 million for the three months ended June 30, 2018 and 2017, respectively and $1.1 million and $0.4 million for the six months ended June 30, 2018 and 2017, respectively.

6. License, Collaboration and Manufacturing Agreements

MSK Agreements – In September 2014, the Company entered into an exclusive option agreement with MSK under which it had the right to acquire the exclusive worldwide license rights to three clinical stage T-cell therapies from MSK. In June 2015, we exercised an option to enter into an exclusive license agreement with MSK for three clinical stage T-cell therapies. In connection with the execution of the license agreement, the Company paid $4.5 million in cash to MSK, which was recorded as research and development expense in our condensed consolidated statement of operations and comprehensive loss.

We are required to make additional payments of up to $33.0 million to MSK based on achievement of specified regulatory and sales-related milestones, as well as mid-single-digit percentage tiered royalty payments based on future sales of products resulting from the development of the licensed product candidates, if any. In addition, under certain circumstances, we are required to make certain minimum annual royalty payments to MSK, which are creditable against earned royalties owed for the same annual period. We are also required to pay a low double-digit percentage of any 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.

QIMR Berghofer Agreements – In October 2015, we entered into an exclusive license agreement and a research and development collaboration agreement with QIMR Berghofer.

Under the terms of the license agreement, we obtained an exclusive, worldwide license to develop and commercialize allogeneic cytotoxic T-lymphocyte ("CTL") therapy programs utilizing technology and know-how developed by QIMR Berghofer. In consideration for the exclusive license, we paid $3.0 million in cash to QIMR Berghofer, which was recorded as research and development expense in our statement of operations and comprehensive loss in the fourth quarter of 2015. In September 2016, the exclusive license agreement and research and development collaboration agreement were amended and restated. Under the amended and restated agreements, we obtained an exclusive, worldwide license to develop and commercialize additional CTL programs as well as the option to license additional technology in exchange for $3.3 million in cash, which was recorded as research and development expense in our statement of operations and comprehensive loss in the third quarter of 2016. We exercised this option in June 2018. The amended and restated license agreement also provides for various milestone and royalty payments to QIMR Berghofer based on future product sales, if any.

Under the terms of the amended and restated research and development collaboration agreement, we are also required to reimburse the cost of agreed-upon development activities related to programs developed under the collaboration. These payments are expensed on a straight-line basis over the related development periods resulting in research and development expense of $1.3 million and $0.7 million for the three months ended June 30, 2018 and 2017, respectively and $2.4 million and $1.3 million for the six months ended June 30, 2018 and 2017, respectively. The agreement also provides for various milestone payments to QIMR Berghofer based on achievement of certain developmental and regulatory milestones.

Milestones and royalties under each of the above agreements are contingent upon future events and will be recorded as expense when it is probable that the milestones will be achieved or royalties are due. As of June 30, 2018 and December 31, 2017, there were no outstanding obligations for milestones and royalties to MSK and QIMR Berghofer.

Cognate Agreement - In August 2015, Atara entered into a Development and Manufacturing Services Agreement (the "Manufacturing Agreement") with Cognate Bioservices, Inc. ("Cognate"). The Manufacturing Agreement was amended in December 2017 to provide for additional rights for Atara in relation to the conduct of the services and amended again in May 2018 to modify certain financial provisions with respect to manufacturing services. Pursuant to the Manufacturing Agreement, Cognate provides process development and manufacturing services for certain Atara product candidates. Atara may terminate the Manufacturing Agreement for convenience on 6 months written notice to Cognate, or immediately if Cognate is unable to perform the Services or fails to obtain or maintain certain necessary approvals. The Manufacturing Agreement includes standard mutual termination rights for uncured breach or insolvency, or a force majeure event preventing the performance of Services for at least ninety days. The Manufacturing Agreement also includes standard provisions in the case of termination or cancellation of any specific manufacturing services.

7. Commitments and Contingencies

License and Collaboration Agreements

Potential payments related to our license and collaboration agreements, including milestone and royalty payments, are detailed in Note 6.

Other Research and Development Agreements

We may enter into contracts in the normal course of business with clinical research organizations for clinical trials, with contract manufacturing organizations for clinical supplies, and with other vendors for pre-clinical studies, supplies and other services for our operating purposes. These contracts generally provide for termination on notice. As of June 30, 2018 and December 31, 2017, there were no amounts accrued related to termination charges for minimum purchase volumes not being met.

Operating and Capital Leases

We lease our corporate headquarters in South San Francisco, California under a non-cancellable lease agreement that expires in April 2021. In connection with the lease, we are required to maintain a letter of credit in the amount of $0.2 million to the landlord, which expires and is renewed every 12 months, and is classified as restricted cash in our condensed consolidated balance sheet. We also lease office space in Westlake Village, California under a lease agreement that expires in April 2019. Also, in fourth quarter of 2017, we entered into multiple agreements to lease certain equipment that have been accounted for as capital leases. The terms of the lease agreements range between 2-3 years.

Rent expense was $0.5 million and $0.3 million for the three months ended June 30, 2018 and 2017, respectively and $1.0 million and $0.6 million for the six months ended June 30, 2018 and 2017, respectively.

Facility Lease Financing Obligation

In February 2017, we entered into a lease agreement for approximately 90,580 square feet of office, lab and cellular therapy manufacturing space in Thousand Oaks, California. The initial 15-year term of the lease commenced on February 15, 2018, upon the substantial completion of landlord's work as defined under the agreement. The contractual obligations during the initial term are $16.4 million in aggregate. We have the option to extend the lease for two additional periods of ten and nine years, respectively, after the initial term. In connection with the lease, we were required to issue a letter of credit in the amount of $1.2 million to the landlord, which is recorded as long-term restricted cash in our condensed consolidated balance sheet.

Based on the terms of the lease agreement and due to our involvement in certain aspects of the construction, we were deemed the owner of the building (for accounting purposes only) during the construction period in accordance with U.S. GAAP. Under this build-to-suit lease arrangement, we recognized construction in progress based on all construction costs incurred by both us and the landlord. We also recognized a financing obligation equal to all costs funded by the landlord.

As of June 30, 2018, due to completion of the construction by the landlord and having failed the criteria for sale-lease back accounting, we transferred the $10.3 million of landlord's construction costs previously capitalized as construction in progress to a build-to-suit asset, and have recognized a corresponding long-term financing obligation for the same amount in long-term liabilities in our consolidated balance sheets.

A portion of the monthly lease payment is allocated to land rent and recorded as an operating lease expense and the non-interest portion of the amortized lease payments to the landlord related to rent of the building is applied to the lease financing liability.

Asset Retirement Obligation

The Company's ARO consists of a contractual requirement to remove the tenant improvements at our manufacturing facility in Thousand Oaks, California and restore the facility to a condition specified in the lease agreement. The Company records an estimate of the fair value of its ARO in long-term liabilities in the period incurred. The fair value of the ARO is also capitalized as construction in progress. The fair value of our ARO was estimated by discounting projected cash flows over the estimated life of the related assets using our credit adjusted risk-free rate.

The following table presents the activity for our ARO liabilities:

	(in thousands)
Balance as of December 31, 2017	$ 580
Liabilities incurred during the period	88
Accretion expense	16
Balance as of June 30, 2018	$ 684

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 did not record liabilities for these agreements as of June 30, 2018 and December 31, 2017.

Contingencies

From time to time, we may be involved in legal proceedings, as well as demands, claims and threatened litigation, which arise in the normal course of our business or otherwise. The ultimate outcome of any litigation is uncertain and unfavorable outcomes could have a negative impact on our results of operations and financial condition. Regardless of outcome, litigation can have an adverse impact on us because of the defense costs, diversion of management resources and other factors. We are not currently involved in any material legal proceedings.

8. Stockholders' Equity

Equity Offerings

In January 2018, we completed an underwritten public offering of 7,675,072 shares of common stock at an offering price of $18.25 per share and received net proceeds of $131.4 million, after deducting underwriting discounts and commissions and offering expenses payable by us. Further, in March 2018, we completed an underwritten public offering of 4,928,571 shares of common stock at an offering price of $35.00 per share and received net proceeds of $161.9 million, after deducting underwriting discounts and commissions and offering expenses payable by us.

ATM Facility

In March 2017, we entered into a sales agreement (the "ATM Facility") with Cowen and Company, LLC ("Cowen") for the sale, in our sole discretion, of shares of our common stock, having an aggregate offering price of up to $75.0 million through Cowen, as our sales agent. We pay Cowen a commission of up to 3.0% of the gross sales proceeds of any common stock sold under the ATM Facility. The issuance and sale of these shares by us pursuant to the ATM Facility are deemed "at the market" offerings and are available under the Securities Act of 1933, as amended.

During the three and six months ended June 30, 2018, we sold an aggregate of 1,007,806 shares of common stock under the ATM facility, at an average price of approximately $48.52 per share, for gross proceeds of $48.9 million and net proceeds of $47.6 million, after deducting commissions and other offering expenses. As of June 30, 2018, $6.1 million of common stock remained available to be sold under this facility, subject to certain conditions as specified in the agreement.

Equity Incentive Plans

Under the terms of the 2014 Equity Incentive Plan ("2014 EIP"), we may grant options, restricted stock awards ("RSAs") and RSUs to employees, directors, consultants and other service providers. As of June 30, 2018, a total of 10,851,962 shares of common stock were reserved for issuance under the 2014 EIP, of which 3,958,128 shares were available for future grant and 6,893,834 shares were subject to outstanding options and RSUs.

In February 2018, we adopted the 2018 Inducement Plan ("2018 IP"), under which we may grant options, stock appreciation rights, RSAs and RSUs to new employees. As of June 30, 2018, 1,250,000 shares of common stock were reserved for issuance under the 2018 IP, of which 882,500 shares were available for future grant and 367,500 shares were subject to outstanding options and RSUs.

Restricted Stock Units

The following is a summary of RSU activity under our 2014 EIP and 2018 IP:

	RSUs	
	Shares	Weighted Average Grant Date Fair Value
Unvested as of December 31, 2017	1,685,000	$ 16.90
Granted	788,987	$ 36.69
Forfeited	(310,352)	$ 20.23
Vested	(365,933)	$ 15.11
Unvested as of June 30, 2018	1,797,702	$ 25.38
Vested and unreleased	3,384	
Outstanding as of June 30, 2018	1,801,086	

The fair value of RSUs is determined as the closing stock price on the date of grant. The weighted average grant date fair value of RSUs granted was $36.69 and $15.78 for the six months ended June 30, 2018 and 2017, respectively. As of June 30, 2018, there was $37.5 million of unrecognized stock-based compensation expense related to RSUs that is expected to be recognized over a weighted average period of 2.8 years. The aggregate intrinsic value of the RSUs outstanding as of June 30, 2018 was $66.2 million.

Under our RSU net settlement procedures, for most of our employees, we withhold shares at settlement to cover the minimum payroll withholding tax obligations. During the six months ended June 30, 2018, we settled 380,034 RSUs, of which 233,836 RSUs were net settled by withholding 87,954 shares. The value of the RSUs withheld was $3.4 million, based on the closing price of our common stock on the settlement date. During the six months ended June 30, 2017, we settled 253,399 RSUs, of which 49,691 RSUs were net settled by withholding 21,201 shares. The value of the RSUs withheld was $0.3 million, based on the closing price of our common stock on the settlement date. The value of RSUs withheld in each period was remitted to the appropriate taxing authorities and has been reflected as a financing activity in our condensed consolidated statements of cash flows.

Stock Options

The following is a summary of stock option activity under our 2014 EIP and 2018 IP. The table below also includes 275,000 stock options which were issued in 2017 outside of these plans:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in thousands)
Outstanding as of December 31, 2017	5,229,648	$ 21.06		
Granted	1,578,750	38.48		
Exercised	(622,982)	22.37		
Forfeited or expired	(466,502)	35.32		
Outstanding as of June 30, 2018	5,718,914	$ 24.56	5.4	$ 74,744
Vested and expected to vest as of June 30, 2018	5,718,914	$ 24.56	5.4	$ 74,744
Exercisable as of June 30, 2018	2,037,856	$ 21.89	4.3	$ 30,678

Aggregate intrinsic value represents the difference between the closing stock price of our common stock on June 30, 2018 and the exercise price of outstanding, in-the-money options. As of June 30, 2018, there was $52.8 million of unrecognized stock-based compensation expense related to stock options that is expected to be recognized over a weighted average period of 3.0 years.

Options for 622,982 shares of our common stock were exercised during the six months ended June 30, 2018, with an intrinsic value of $11.3 million. No options were exercised during the six months ended June 30, 2017. As we believe it is more likely than not that no stock option related tax benefits will be realized, we do not record any net tax benefits related to exercised options.

The fair value of each option issued was estimated at the date of grant using the Black-Scholes valuation model. The following table summarizes the weighted-average assumptions used as inputs to the Black-Scholes model, and resulting weighted-average grant date fair values of stock options granted to employees during the periods indicated:

	Six months ended June 30, 2018	Six months ended June 30, 2017
Assumptions:		
Expected term (years)	4.6	4.5
Expected volatility	73.5 %	66.0 %
Risk-free interest rate	2.6 %	1.8 %
Expected dividend yield	0.0 %	0.0 %
Fair Value:		
Weighted-average estimated grant date fair value per share	$ 22.79	$ 8.89
Options granted	1,578,750	770,900
Total estimated grant date fair value	$ 35,980,000	$ 6,853,000

The estimated fair value of stock options that vested in the six months ended June 30, 2018 and 2017 was $8.2 million and $7.4 million, respectively.

Employee Stock Purchase Plan

As of June 30, 2018, there were 943,338 shares available for purchase under the 2014 Employee Stock Purchase Plan ("2014 ESPP"). The Company recorded $0.2 million and $0.1 million of expense related to the 2014 ESPP in the six months ended June 30, 2018 and 2017, respectively. 77,100 and 43,962 shares were purchased under the 2014 ESPP during the six months ended June 30, 2018 and 2017, respectively.

Reserved Shares

The following shares of common stock were reserved for future issuance as of June 30, 2018:

	Total Shares Reserved
2014 Equity Incentive Plan	10,851,962
2018 Inducement Plan	1,250,000
2014 Employee Stock Purchase Plan	943,338
Options granted outside the equity plans	258,666
Total reserved shares of common stock	13,303,966

Stock-based Compensation Expense

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

	Three months ended June 30,		Six months ended June 30,	
	2018	2017	2018	2017
	(in thousands)		(in thousands)	
Research and development	$ 3,384	$ 1,983	$ 6,316	$ 4,124
General and administrative	4,614	3,673	8,697	6,879
Total stock-based compensation expense	$ 7,998	$ 5,656	$ 15,013	$ 11,003

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

You should read the following discussion and analysis of our financial condition and results of operations together with our unaudited condensed consolidated financial statements and related notes included elsewhere in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2018. 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

Atara Biotherapeutics is a leading T-cell immunotherapy company developing novel treatments for patients with cancer, autoimmune and viral diseases. The Company's off-the-shelf, or allogeneic, T-cells are bioengineered from donors with healthy immune function and allow for rapid delivery from inventory to patients without a requirement for pretreatment. Atara's T-cell immunotherapies are designed to precisely recognize and eliminate cancerous or diseased cells without affecting normal, healthy cells. Atara's most advanced T-cell immunotherapy in development, tabelecleucel (formerly known as ATA129), is being developed for the treatment of patients with Epstein-Barr virus, or EBV, associated post-transplant lymphoproliferative disorder, or EBV+ PTLD, who have failed rituximab, as well as other EBV associated hematologic and solid tumors, including nasopharyngeal carcinoma, or NPC. Off-the-shelf ATA188 and autologous, or patient-derived, ATA190, the Company's T-cell immunotherapies using a complementary targeted antigen recognition technology, target specific EBV antigens believed to be important for the potential treatment of multiple sclerosis, or MS. Atara's clinical pipeline also includes ATA520 targeting Wilms Tumor 1, or WT1, ATA230 directed against cytomegalovirus, or CMV, and ATA621 directed against the BK and JC viruses.

Our technology allows for rapid delivery of a T-cell immunotherapy product that has been manufactured in advance and stored in inventory, with each manufactured lot of cells providing therapy for numerous potential patients. This differs from autologous treatments, in which each patient's own cells must be extracted, modified outside the body and then delivered back to the patient. We utilize a proprietary cell selection algorithm to select the appropriate set of cells for use based on a patient's unique immune profile, and, unlike many other T-cell programs, there is neither a requirement for pre-treatment before our cells are administered nor is there extended monitoring following administration. For example, in our ongoing trials with our most advanced product candidate, tabelecleucel, patients are monitored for one to two hours following receipt of tabelecleucel. Our T-cell immunotherapy platform is applicable to a broad array of targets and diseases. With more than 200 patients treated across the platform, we have observed clinical proof of concept across both viral and non-viral targets in conditions ranging from liquid and solid tumors to infectious and autoimmune diseases. We have also observed a safety profile characterized by few treatment-related serious adverse events, or SAEs, and no evidence of cytokine release syndrome to date.

Our T-cell immunotherapy product candidates are engineered from cells donated by healthy individuals with normal immune function. Once cells are collected from a donor, they are bioengineered to expand those T-cells that recognize the antigens of interest. The resulting expanded T-cells are then characterized and held as inventory. From inventory, these cells can be selected, distributed and prepared for infusion in a partially human leukocyte antigen, or HLA, matched patient in approximately 3-5 days. Following administration, our T-cells home to their target, undergo target-controlled proliferation, eliminate diseased cells and eventually recede. Target-controlled proliferation means that our T-cells expand in number when they encounter diseased cells in a patient's body that express the antigen the cells are designed to recognize.

We have two technology platforms. One of our technology platforms was developed from more than a decade of experience at MSK. The other was developed at QIMR Berghofer, in Australia. We licensed rights to certain know-how and T-cell product candidates from MSK in June 2015. In May 2018, we entered into an agreement to expand our collaboration with MSK to the development of chimeric antigen receptor T-cell (CAR-T) immunotherapies. Our most advanced product candidate, tabelecleucel, targets EBV. Tabelecleucel received Breakthrough Therapy Designation, or BTD, from the U.S. Food and Drug Administration, or FDA, and Priority Medicines, or PRIME, designation from the European Medicines Agency, or EMA, and is currently being evaluated as monotherapy in two Phase 3 trials for the treatment of patients with EBV+ PTLD. We believe that tabelecleucel has the potential to be the first commercially available off-the-shelf T-cell immunotherapy and the first FDA and EMA approved therapy for EBV+ PTLD. With a European conditional marketing authorization application planned for the first half of 2019 and U.S. biologics licensing applications planned following the completion of one of our ongoing Phase 3 trials, we are currently developing the infrastructure to commercialize tabelecleucel globally in EBV+ PTLD. We are also evaluating the potential utility of tabelecleucel in patients with other EBV associated cancers, such as NPC, to continue its development into solid tumors. Additional product candidates derived from the collaboration with MSK are being developed to treat various cancers and severe viral infections.

In October 2015 and September 2016, we licensed rights to certain know-how and technology from QIMR Berghofer that are complementary to those we licensed from MSK. This know-how and technology uses targeted antigen recognition to create off-the-shelf T-cell immunotherapy product candidates applicable to a variety of diseases, including autoimmune conditions such as MS. We are also working with QIMR Berghofer on the development of EBV and other virally targeted T-cells. Through this technology, we are expanding the role of immunotherapy beyond oncology and viral infections to autoimmune disease. Our most advanced off-the-shelf T-cell product candidate utilizing this technology, ATA188, targets select antigens of EBV and is currently being evaluated in a Phase 1 trial in an initial cohort for the treatment of patients with progressive MS. In connection with the initial license from QIMR Berghofer, we received an option to exclusively license an autologous version of ATA188, also known as ATA190, which recently demonstrated clinical activity in a Phase 1 trial in progressive MS. We expect to broadly explore the utility of our targeted antigen recognition technology in EBV and other virally driven diseases, and additional product candidates derived from our collaboration with QIMR Berghofer are being developed.

In August 2015, we entered into a Development and Manufacturing Services Agreement (the "Manufacturing Agreement") with Cognate Bioservices, Inc. ("Cognate"). The Manufacturing Agreement was amended in December 2017 to provide for additional rights for Atara in relation to the conduct of the services and amended again in May 2018 to modify certain financial provisions with respect to manufacturing services. Pursuant to the Manufacturing Agreement, Cognate provides process development and manufacturing services for certain of our product candidates. Atara may terminate the Manufacturing Agreement for convenience on 6 months written notice to Cognate, or immediately if Cognate is unable to perform the Services or fails to obtain or maintain certain necessary approvals. The Manufacturing Agreement includes standard mutual termination rights for uncured breach or insolvency, or a force majeure event preventing the performance of Services for at least ninety days. The Manufacturing Agreement also includes standard provisions in the case of termination or cancellation of any specific manufacturing services.

We believe that Atara is a leading allogeneic T-cell immunotherapy company with a robust oncology pipeline and potentially transformative T-cell immunotherapies for MS and other viral diseases. With tabelecleucel poised to potentially become the first off-the-shelf T-cell therapy approved in the U.S. and E.U. and a robust pipeline of high potential candidates, our ambition is to be recognized as the leader in off-the-shelf T-cell immunotherapy.

Tabelecleucel for EBV+ PTLD following HCT or SOT

Since its discovery as the first human oncovirus, EBV has been implicated in the development of a wide range of diseases, including lymphomas and other cancers. EBV is widespread in human populations and persists as a lifelong, asymptomatic infection. In healthy individuals, a small percentage of T-cells are devoted to keeping EBV in check. In contrast, immunocompromised patients, such as those undergoing hematopoietic cell transplants, or HCT, or solid organ transplants, or SOT, have a reduced ability to control EBV. Left without appropriate immune surveillance, EBV transformed cells can, in some patients, proliferate and cause an aggressive, life-threatening cancer called EBV+ PTLD.

Our most advanced T-cell immunotherapy product candidate, tabelecleucel, is an allogeneic EBV-specific T-cell immunotherapy that is currently being investigated for the treatment of patients with EBV+ PTLD who have failed rituximab. In February 2015, the FDA granted tabelecleucel BTD in the treatment of patients with EBV+ PTLD after HCT who have failed rituximab. BTD is an FDA process designed to accelerate the development and review of drugs intended to treat a serious condition when early trials show that the drug may be substantially better than current treatment. In October 2016, tabelecleucel was accepted into the EMA PRIME regulatory pathway for the same indication, providing enhanced regulatory support. In addition, tabelecleucel has received orphan status in the United States and European Union for the treatment of patients with EBV+ PTLD following HCT or SOT. In December 2016, we announced that we had reached agreement with the FDA on the designs of two Phase 3 trials for tabelecleucel intended to support approval in two separate indications, the treatment of EBV+ PTLD following HCT and SOT in patients who have failed rituximab. In December 2017, following discussion with the FDA of manufacturing and comparability data generated on material manufactured by our contract manufacturing organization, we initiated these trials in the United States. We expect to expand these trials geographically to include clinical sites outside the United States.

The Phase 3 MATCH trial (EBV+ PTLD following HCT) is a multicenter, open label, single arm trial designed to enroll approximately 35 patients with EBV+ PTLD following HCT who have failed rituximab. The Phase 3 ALLELE trial (EBV+ PTLD following SOT) is a multicenter, open label trial with two non-comparative cohorts. Each cohort is designed to enroll approximately 35 patients. The first cohort will include patients who previously received rituximab monotherapy, and the second cohort will include patients who previously received rituximab plus chemotherapy. Both cohorts are enrolling concurrently. The primary endpoint of both the MATCH and ALLELE trials is confirmed best objective response rate, or ORR, defined as the percent of patients achieving either a complete or partial response to treatment with tabelecleucel confirmed after the initial tumor assessment showing a response. Secondary endpoints for both trials include duration of response, overall survival, safety, quality of life metrics, and other measures to evaluate its health economic impact. A safety committee will meet periodically to monitor for safety. Initial results from the first tabelecleucel Phase 3 study, or cohort in the case of ALLELE, are expected to be available in the first half of 2019.

We are also pursuing marketing approval of tabelecleucel in the European Union. In March 2016, the EMA issued a positive opinion for orphan drug designation for tabelecleucel for the treatment of patients with EBV+ PTLD. In October 2016, the EMA Committee for Medicinal Products for Human Use and the Committee for Advanced Therapies granted tabelecleucel access to the EMA's recently established PRIME regulatory initiative for the treatment of patients with EBV+ PTLD following HCT who have failed rituximab. PRIME provides early enhanced regulatory support to facilitate regulatory applications and accelerate the review of medicines that address a high unmet need. In January 2017, we received parallel scientific advice from the EMA's Scientific Advice Working Group and several national Health Technology Assessment agencies in the EU, including those in the United Kingdom, Germany and France. Based on these discussions, we plan to submit an application for Conditional Marketing Authorization, or CMA, of tabelecleucel in the treatment of patients with EBV+ PTLD following HCT who have failed rituximab in the first half of 2019. The CMA will be based on clinical data from Phase 1 and 2 trials conducted at MSK and supported by available data from our Phase 3 MATCH and ALLELE trials in patients with EBV+ PTLD after HCT and SOT who have failed rituximab, which will be ongoing at the time of filing.

Tabelecleucel for nasopharyngeal carcinoma, or NPC

NPC, is a type of head and neck cancer that is primarily EBV associated. Standard treatment for NPC includes radiation therapy with or without platinum-based chemotherapy. In the setting of metastatic disease after the failure of chemotherapy, median survival is approximately five to 11 months based on historical data, and there are no approved therapeutic agents available to treat this disease today. In April 2017, we entered into an agreement with Merck (known as MSD outside of the United States and Canada) to provide drug supply for a trial sponsored and conducted by us to evaluate tabelecleucel in combination with Merck's anti-PD-1 (programmed death receptor-1) therapy, KEYTRUDA ® (pembrolizumab), in patients with platinum-resistant or recurrent EBV-associated NPC. The Phase 1/2 trial will evaluate the safety, pharmacokinetics, pharmacodynamics, and preliminary efficacy of the combination and is planned for initiation in the second half of 2018.

ATA188 and ATA190 for multiple sclerosis

MS is a chronic disorder of the central nervous system, or CNS, that disrupts the myelination and normal functioning of the brain, optic nerves and spinal cord through inflammation and tissue loss. The evolution of MS results in an increasing loss of both physical and cognitive (e.g., memory) function. This has a substantial negative impact on the approximately 2.3 million people worldwide affected by MS.

There are two categories of MS: progressive MS, or PMS; and relapsing-remitting MS, or RRMS. PMS is a severe form of MS with few therapeutic options. Within PMS there are two types of MS: secondary progressive MS, or SPMS; and primary progressive MS, or PPMS. According to the National Multiple Sclerosis Society, there are approximately one million people affected by PMS. Both types of PMS are characterized by persistent progression and worsening of MS symptoms and physical disability over time. PPMS occurs when the patient has a disease course characterized by steady and progressive worsening after disease onset. SPMS initially begins as RRMS, but once patients have continuous progression of their disease, they have developed SPMS. This is distinct from RRMS, where patients have flares of the disease that are followed by periods of recovery and quiescence during which the disease does not progress.

There is a strong biologic connection between EBV and MS. EBV is present in nearly all patients with MS. For example, in an international study of patients with clinically isolated syndrome (CIS), a CNS demyelinating event isolated in time that is compatible with the possible future development of MS, only one patient out of 1,407 was seronegative for, or not infected with, EBV. In addition, in separate studies, clear differences in location and frequency of EBV infected B-cells and plasma cells were evident between the brains of MS patients and the brains of patients without MS. In these studies, the EBV infected B-cells and plasma cells were in close proximity to areas of active demyelination. Studies suggest that EBV positive B-cells and plasma cells in the CNS have the potential to catalyze an autoimmune response and the MS pathophysiology. In patients with MS, their T-cells may be unable to control EBV positive B-cells and plasma cells so that B-cells and plasma cells could then accumulate in the brain and generate antibodies that attack and destroy myelin, the protective layer that insulates nerves in the brain and spinal cord. This loss of myelin ultimately leads to MS symptoms. MS disease course has also been shown to correlate with measures of EBV activity. The role of B-cells in MS is supported by the recent approval by the FDA of ocrelizumab for PPMS which broadly targets B-cells through their expression of a cell surface marker known as CD20. Low vitamin D also suppresses T-cells and is associated with MS.

Our second T-cell immunotherapy product candidate, ATA188, is an off-the-shelf EBV-specific T-cell that utilizes a targeted antigen recognition technology that enables the T-cells we administer to selectively identify cells expressing the EBV antigens that we believe are important for the potential treatment of MS. We are also developing an autologous version of this product candidate that we call ATA190. ATA190 utilizes the same approach to targeted antigen recognition as ATA188. These product candidates are designed to selectively target only those cells which are EBV positive while sparing those that are not. We believe that eliminating only EBV positive B-cells, including plasma cells, has the potential to benefit some patients with MS through enhanced efficacy and a better side-effect profile. In October 2015, we obtained an exclusive, worldwide license to develop and commercialize allogeneic T-cell immunotherapy product candidates targeting EBV, including ATA188, utilizing technology and know-how developed by QIMR Berghofer. In connection with this license, we also received an option to exclusively license the autologous version of EBV product candidates, including ATA190, which we exercised in June 2018.

In the fourth quarter of 2017, we initiated an open label, single arm, multi-center, multi-national Phase 1 trial with allogeneic ATA188 for patients with MS and in January 2018 announced that we received clearance of our investigational new drug, or IND, application from the FDA to proceed with patient enrollment at U.S. sites. In the first quarter of 2018, we initiated this study in the U.S. The primary objective of this Phase 1 trial is to assess the safety of ATA188 in patients followed for at least one year after the first dose. Key secondary endpoints in the trial include measures of clinical improvement such as Expanded Disability Status Scale, or EDSS, and annualized relapse rate, or ARR, as well as MRI imaging. The trial is expected to enroll a total of 60 patients across the United States, Australia and Europe: 30 patients with PMS, either PPMS or SPMS, and 30 patients with RRMS. We expect to announce initial results from our ATA188 Phase 1 trial in patients with PMS in the first half of 2019.

In addition, based on the Phase 1 clinical results observed to date with ATA190, we believe the continued development of ATA190 will enhance our understanding of the potential therapeutic utility of targeting EBV in the treatment of MS and further inform and complement our development of ATA188. We plan to initiate, in 2019, a randomized clinical study of ATA190 in patients with PMS.

ATA520 for hematologic malignancies

Our third T-cell immunotherapy product candidate, ATA520, is an off-the-shelf WT1 specific T-cell immunotherapy, that targets cancers expressing the antigen WT1 and is currently in Phase 1 clinical trials. WT1 is an intracellular protein that is overexpressed in a number of cancers, including hematological malignances as well as solid tumors. Given the advances of our EBV-related pipeline programs in NPC and MS, as well as the opportunity to pursue a conditional marketing authorization in the E.U. for tabelecleucel, we expect to initiate an additional clinical trial with ATA520 following the further process development of ATA520 as well as the clinical and regulatory advancement of tabelecleucel and our MS related programs.

ATA230 for CMV viremia and disease

Our fourth T-cell immunotherapy product candidate, ATA230, is an off-the-shelf CMV specific T-cell immunotherapy, that is in Phase 2 clinical trials for refractory CMV infection that occurs in some patients who have received an HCT or SOT or are otherwise immunocompromised. Recently, the FDA granted orphan drug designation for ATA230 for the treatment of CMV viremia and disease in immunocompromised patients as well as Rare Pediatric Disease Designation for the treatment of congenital CMV infection. The EMA has also granted us orphan status for ATA230 for CMV infection in patients with impaired cell-mediated immunity. Given the opportunity to pursue a CMA in the E.U. for tabelecleucel, we have decided to prioritize our EBV related programs ahead of ATA230 at this time, and plan to further evaluate our development strategy for ATA230 later in 2018.

ATA621 for BK and JC virus associated diseases

Through our ongoing collaboration with QIMR Berghofer, we recently developed a new T-cell immunotherapy product candidate, ATA621, for BK and JC virus associated diseases. These two viruses are closely related and there are no available antiviral agents approved for use in BK or JC associated diseases. JC virus is associated with progressive multifocal leukoencephalopathy, or PML, which occurs in transplant, HIV and cancer patients as well as in patients treated with other immunosuppressive therapies, including certain therapies utilized for the treatment of MS. BK virus is associated with hemorrhagic cystitis, or BKVHC, which mainly occurs following HCT or cyclophosphamide treatment as well as BK virus associated nephropathy, or BKVAN, which is a disease most commonly associated with kidney transplant. We are currently conducting IND enabling manufacturing process development and plan to initiate a Phase 1 trial with ATA621 in 2019.

Financial Overview

We have 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 studies and clinical trials and providing general and administrative support for these operations.

We have never generated revenues and have incurred losses since inception. 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.

Our net losses were $92.3 million and $53.1 million for the six months ended June 30, 2018 and 2017, respectively. As of June 30, 2018, we had an accumulated deficit of $389.0 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. As of June 30, 2018, our cash, cash equivalents and short-term investments totaled $417.0 million, which we intend to use to fund our operations.

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 primarily of compensation and benefits for research and development employees, including stock-based compensation; 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; payments under licensing and research and development agreements; other outside services and consulting costs; and an allocation of facilities, information technology and overhead expenses. Research and development costs are expensed as incurred.

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

- continuing to initiate sites and enroll patients in our Phase 3 clinical trials of tabelecleucel for the treatment of patients with EBV+ PTLD after HCT and SOT who have failed rituximab;
- process development, testing and manufacturing of drug supply to support clinical trials and IND-enabling studies;
- continuing development of ATA190 and enrolling patients to the Phase 1 trial of ATA188 in MS;
- continuing to develop our product candidates in additional indications, including tabelecleucel for NPC and frontline PTLD;
- continuing development of ATA520 for the treatment of hematologic malignancies, including PCL, and solid tumors;
- continuing to develop other product candidates, including ATA621 for BK and JC virus associated diseases; and
- leveraging our relationships and experience to in-license or acquire additional product candidates or technologies.

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 trials 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 availability of qualified drug supply for use in our ongoing Phase 3 or other clinical trials;
- 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 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. The risks and uncertainties associated with our research and development projects are discussed more fully in the section of this report titled “1A. Risk Factors.” As a result of these risks and uncertainties, we are unable to determine with any degree of certainty the duration and completion costs of our research and development projects, or if, when, or to what extent we will generate revenues from the commercialization and sale of any of our product candidates that obtain regulatory approval. 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 compensation and benefits for general and administrative employees, including stock-based compensation; outside professional service costs, including legal, patent, human resources, audit and accounting services; other outside services and consulting costs; and allocated information technology and facilities costs. 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 the potential commercialization of one or more of our product candidates.

Interest and Other Income, net

Interest and other income, net consists primarily of interest earned on our cash, cash equivalents and short-term investments.

Critical Accounting Policies and Significant Judgments and Estimates

There have been no significant changes during the six months ended June 30, 2018 to our critical accounting policies and significant judgments and estimates as disclosed in our management's discussion and analysis of financial condition and results of operations included in our Annual Report on Form 10-K for the year ended December 31, 2017.

Income Taxes

On December 22, 2017, President Trump signed into law new tax legislation, or the Tax Act, which significantly reforms the Internal Revenue Code of 1986, as amended. As of June 30, 2018, we have made a reasonable estimate of the effects on our existing deferred taxes and related disclosures for the reduction in corporate tax rate and adjustments to the expected deductibility of executive compensation. Due to current year taxable losses and our federal valuation allowance position, we did not recognize any income tax expense or benefit as a result of enactment of the Tax Act. Due to accumulated foreign deficits the Company does not expect a current inclusion in U.S. federal taxable income for the transition tax on earnings of controlled foreign corporations.

The SEC staff has issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act (SAB 118), which allows us to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. We consider the key estimates on the deferred tax remeasurement and the impact of the changes to the deductibility of executive compensation to be provisional due to expected forthcoming guidance from federal and state tax authorities, our continuing analysis of final year-end data and tax positions, as well as further guidance expected for the associated income tax accounting. During the six months ended June 30, 2018, we did not make any adjustments to the provisional amounts included in the consolidated financial statements for the year ended December 31, 2017. We expect to complete our analysis within the measurement period in accordance with SAB 118.

Emerging Growth Company Status

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act, or 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 $1.07 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, or the Exchange Act. We will be deemed a "large accelerated filer" as of the end of the fourth quarter of 2018 as our public float as of June 29, 2018 was greater than $700 million.

Results of Operations

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

Research and development expenses

Research and development expenses consisted of the following costs, by program, in the periods presented:

	Three months ended June 30,		Increase	Six months ended June 30,		Increase
	2018	2017	(Decrease)	2018	2017	(Decrease)
	(in thousands)			(in thousands)		
Tabelecleucel	$ 8,089	$ 7,714	$ 375	$ 17,134	$ 14,898	$ 2,236
ATA188, ATA190 and other program expenses	6,855	1,712	5,143	11,179	3,880	7,299
Employee and overhead costs	18,443	8,870	9,573	33,534	17,059	16,475
Total research and development	$ 33,387	$ 18,296	$ 15,091	$ 61,847	$ 35,837	$ 26,010

Tabelecleucel costs were $8.0 million and $17.1 million in the three and six-month periods ended June 30, 2018, as compared to $7.7 million and $14.9 million in the comparative 2017 periods. The increases between the periods were primarily due to clinical trial, manufacturing and outside service costs related to the two Phase 3 clinical trials of tabelecleucel in patients with EBV+ PTLD who have failed rituximab. We anticipate that tabelecleucel costs will continue to increase in 2018 due to enrollment in the two Phase 3 clinical trials.

ATA188, ATA190 and other program costs were $6.9 million and $11.2 million in the three and six-month periods ended June 30, 2018, as compared to $1.7 million and $3.9 million in the comparative 2017 periods. The increases between the periods were primarily related to clinical trial, manufacturing and other outside service costs related to the Phase 1 clinical trial of ATA188 for patients with MS and the exercise of the option to license ATA190, the autologous version of ATA188. We anticipate that ATA188, ATA190 and other program costs will continue to increase in 2018 due to an increase in manufacturing activity, the continued development of our manufacturing processes, and the development of products obtained from our collaboration with QIMR Berghofer.

Employee and overhead costs were $18.4 million and $33.5 million in the three and six-month periods ended June 30, 2018 as compared to $8.9 million and $17.1 million in the comparative 2017 periods. The increases between the three-month periods were primarily due to a $5.4 million increase in payroll and related costs driven by increased headcount, $2.1 million increase in professional services costs, $1.8 million increase in facility related costs and a $0.3 million increase in travel and other related costs. The increases between the six-month periods were primarily due to a $9.7 million increase in payroll and related costs driven by increased headcount, $3.2 million increase in professional services costs, $2.9 million increase in facility related costs and a $0.7 million increase in travel and other related costs. The increases between the periods were primarily related to our continuing expansion of research and development activities and we anticipate that employee and overhead costs will continue to increase in future periods as we continue to expand such activities.

General and administrative expenses

	Three months ended June 30,		Increase	Six months ended June 30,		Increase
	2018	2017	(Decrease)	2018	2017	(Decrease)
	(in thousands)			(in thousands)		
General and administrative	$ 19,236	$ 9,613	$ 9,623	$ 33,228	$ 18,233	$ 14,995

General and administrative expenses increased to $19.2 million and $33.2 million in the three and six-month periods ended June 30, 2018 as compared to $9.6 million and $18.2 million in the comparative 2017 periods. The increase between the three-month periods was primarily due to a $2.6 million increase in payroll and related costs driven by increased headcount, a $6.1 million increase in professional services costs, and a $0.9 million increase in travel and facility related costs. The increases between the six-month periods was primarily due to a $8.3 million increase in professional services costs, a $5.2 million increase in payroll and related costs driven by increased headcount, and a $1.4 million increase in travel and facility related costs. The increases between the periods were primarily related to the expansion of our operations and we expect that general and administrative costs will continue to increase in 2018 as we continue to expand.

Liquidity and Capital Resources

Sources of Liquidity

Since our inception in 2012, we have funded our operations primarily through the issuance of common and preferred stock. In January 2018, we completed an underwritten public offering of 7,675,072 shares of common stock at an offering price of $18.25 per share and received net proceeds of $131.4 million, after deducting underwriting discounts and commissions and offering expenses payable by us. Further, in March 2018, we completed an underwritten public offering of 4,928,571 shares of common stock at an offering price of $35.00 per share and received net proceeds of $161.9 million, after deducting underwriting discounts and commissions and offering expenses payable by us.

In March 2017, we entered into the ATM Facility with Cowen for the sale, in our sole discretion, of shares of our common stock, having an aggregate offering price of up to $75.0 million through Cowen, as our sales agent. We pay Cowen a commission of up to 3.0% of the gross sales proceeds of any common stock sold under the ATM Facility. The issuance and sale of these shares by us pursuant to the ATM Facility are deemed "at the market" offerings and are available under the Securities Act of 1933, as amended.

During the three and six months ended June 30, 2018, we sold an aggregate of 1,007,806 shares of common stock under the ATM facility, at an average price of approximately $48.52 per share, for gross proceeds of $48.9 million and net proceeds of $47.6 million, after deducting commissions and other offering expenses. As of June 30, 2018, $6.1 million of common stock remained available to be sold under this facility, subject to certain conditions as specified in the agreement.

We have incurred losses and negative cash flows from operations in each year since inception. As of June 30, 2018, we had an accumulated deficit of $389.0 million. We do not expect to receive any revenues from any product candidates that we develop until we obtain regulatory approval and commercialize our products. As such, we anticipate that we will continue to incur losses the foreseeable future. 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, cash equivalents and short-term investments are held in bank and custodial accounts and consist of money market funds, U.S. Treasury, government agency and corporate debt obligations, commercial paper and asset-backed securities. Management expects that existing cash, cash equivalents and short-term investments as of June 30, 2018 will be sufficient to fund our planned operations to mid-2020.

Our cash, cash equivalents and short-term investments balances as of the dates indicated were as follows:

	June 30, 2018	December 31, 2017
	(in thousands)	
Cash and cash equivalents	$ 103,203	$ 79,223
Short-term investments	313,812	86,873
Total cash, cash equivalents and short-term investments	$ 417,015	$ 166,096

Cash Flows

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

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

	Six months ended June 30,	
	2018	2017
	(in thousands)	
Net cash provided by (used in):		
Operating activities	$ (74,256)	$ (42,335)
Investing activities	(253,794)	50,324
Financing activities	352,030	9,480
Net increase in cash, cash equivalents and restricted cash	$ 23,980	$ 17,469

Operating activities

Net cash used in operating activities was $74.3 million in the 2018 period as compared to $42.3 million in the 2017 period. The decrease of $31.9 million was primarily due to a $39.2 million increase in net loss and a $1.2 million decrease in the amortization of investment premiums and discounts, partially offset by a $3.8 million increase in operating assets and liabilities, a $4.0 million increase in stock-based compensation, a $0.6 million increase in depreciation expense, and a $0.1 million increase in non-cash interest expense.

Investing activities

Net cash used in investing activities in the 2018 period consisted primarily of $357.6 million used to purchase available-for-sale securities and $27.3 million in purchases of property and equipment, partially offset by $52.0 million received from maturities and $79.1 million from sales of available-for-sale securities. Net cash provided by investing activities during the 2017 period consisted primarily of $115.4 million received from maturities and $51.7 million from sales of available-for-sale securities, partially offset by $112.4 million used to purchase available-for-sale securities and $4.3 million in purchases of property and equipment.

Financing activities

Net cash provided by financing activities in the 2018 period consisted of $293.3 million of aggregate net proceeds from the underwritten public offerings in January and March 2018, $47.6 million of net proceeds from the ATM facility and $14.9 million of net proceeds from employee stock transactions, partially offset by $3.4 million of taxes paid related to the net share settlement of restricted stock and $0.3 million on principal payments on our capital lease obligations. Net cash provided by financing activities in the 2017 period consisted of $9.3 million of net proceeds from the ATM facility and $0.5 million of net proceeds from employee stock transactions, partially offset by $0.3 million of taxes paid related to the net share settlement of restricted stock.

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 anticipate that we will need to raise substantial additional funding in connection with our continuing and expected expansion of our operations.

We expect that our existing cash, cash equivalents and short-term investments will be sufficient to fund our planned operations to mid-2020. In order to complete the process of obtaining regulatory approval for our lead product candidate and to build the sales, marketing and distribution infrastructure that we believe will be necessary to commercialize our lead product candidate, 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 ongoing and planned clinical trials and preclinical studies for 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, costs associated with the commercialization of our product candidates and the amount of 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;
- the extent to which we in-license or acquire other products and technologies; and
- the timing of capital expenditures, including the completion of our own manufacturing facility.

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.

Contractual Obligations and Commitments

Future minimum payments under our operating, capital and finance leases as of June 30, 2018 was $20.1 million.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

During the six months ended June 30, 2018, there were no material changes to our interest rate risk disclosures, market risk disclosures and foreign currency exchange rate risk disclosures reported in our Annual Report on Form 10-K for the year ended December 31, 2017.

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, 2018. 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, 2018 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. In designing and evaluating our disclosure controls and procedures, management recognizes that any disclosure controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Inherent Limitations on Controls and Procedures

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures and our internal controls will prevent all error and all fraud. A control system, no matter how well designed and operated, can only provide reasonable assurances that the objectives of the control system are met. The design of a control system reflects resource constraints; the benefits of controls must be considered relative to their costs. Because there are inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been or will be detected. As these inherent limitations are known features of the financial reporting process, it is possible to design into the process safeguards to reduce, though not eliminate, these risks. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns occur because of simple error or mistake. Controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls is based in part upon certain assumptions about the likelihood of future events. While our disclosure controls and procedures are designed to provide reasonable assurance of achieving their objectives, there can be no assurance that any design will succeed in achieving its stated goals under all future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with the policies or procedures. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

We intend to review and evaluate the design and effectiveness of our disclosure controls and procedures on an ongoing basis and to improve our controls and procedures over time and to correct any deficiencies that we may discover in the future. While our Chief Executive Officer and Chief Financial Officer have concluded that, as of June 30, 2018, the design of our disclosure controls and procedures, as defined in Rule 13a-15(e) under the Exchange Act, was effective, future events affecting our business may cause us to significantly modify our disclosure controls and procedures.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting identified in connection with the evaluation required by Rules 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the six months ended June 30, 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

None.

Item 1A. 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, 2018, we reported a net loss of $92.3 million and we had an accumulated deficit of $389.0 million as of June 30, 2018.

We do not expect to generate revenues for the foreseeable future, 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, consistently 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 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, any of our quarterly or annual periods' results are not indicative 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 successfully 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 BLAs to the FDA and obtain U.S. 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 commercially viable prices for our products, if any;
- establish and maintain adequate supply with sufficient breadth to treat patients
- establish and maintain manufacturing relationships with reliable third parties or complete our own manufacturing facility and ensure adequate, legally globally compliant manufacturing of bulk drug substances and drug products to maintain that supply;
- develop manufacturing and distribution processes for our novel T-cell immunotherapy product candidates;
- develop 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 to continue the clinical development and manufacturing of our T-cell immunotherapy product candidates, and the advancement and expansion of our preclinical research pipeline. We also expect to continue to expend resources for the development and manufacturing of product candidates and the technology we have licensed or have an exclusive right to license from QIMR Berghofer, including ATA188 and ATA190, which are in development for the treatment of MS. 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 each of MSK and QIMR Berghofer, we are obligated to make payments upon the achievement of certain development, regulatory and commercial milestones. In addition, other unanticipated costs may arise. Because the design and outcome of our ongoing, 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 product candidates, and conducting preclinical studies and clinical trials;
- the timing of, and the costs involved in, obtaining regulatory approvals for our 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.

We believe that our existing cash, cash equivalents and short-term investments will be sufficient to fund our planned operations into mid-2020. As of June 30, 2018, we had total cash, cash equivalents and short-term investments of $417.0 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, entering into licensing arrangements, 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.

Risks Related to the Development of Our Product Candidates

We are very early in our development efforts and have only a small number of 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, and only a small number of our product candidates are 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;
- establishing or making arrangements with third-party manufacturers or completing our own manufacturing facility for commercial manufacturing purposes;
- developing manufacturing and distribution processes for our novel T-cell product candidates;
- manufacturing our product candidates at an acceptable cost;
- launching commercial sales of our product candidates, if approved, whether alone or in collaboration with others;
- acceptance of the product candidates, if 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 tabelecleucel, for which we recently initiated Phase 3 clinical trials in the United States, ATA188, which is in a Phase 1 clinical trial, ATA190, which is in a Phase 1 clinical trial conducted by QIMR Berghofer, and ATA230, which is in Phase 2 clinical trials. 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 studies and clinical trials, 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 our manufacturing processes or facilities of third-party manufacturers with whom we contract for clinical and commercial supplies or our own manufacturing facility; 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 immunotherapy product candidates, represent new therapeutic approaches that could result in heightened regulatory scrutiny, delays in clinical development or delays in or our inability to achieve regulatory approval or commercialization of our product candidates.

Our future success is dependent on the successful development of T-cell immunotherapies in general and our 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 limited experience with regulating the development and commercialization of T-cell immunotherapies;
- 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 a sufficient supply and breadth of 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 that are free from viruses and other pathogens that may increase the risk of adverse side effects;
- developing a manufacturing process and distribution network that can provide a stable supply 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 immunotherapy product candidates will yield a sufficient supply of satisfactory products that are safe and effective, comparable to those T-cells produced by MSK or QIMR Berghofer historically, scalable or profitable.

Moreover, actual or perceived 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 studies or earlier clinical trials are not necessarily predictive of future results. Our existing product candidates in clinical trials, and any other product candidate we advance into clinical trials, may not have favorable results in later clinical 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 trials. For example, in December 2015, we announced that our Phase 2 proof-of-concept trial of PINTA 745 did not meet its primary endpoint even though earlier clinical trials and preclinical studies had indicated that it might be effective to treat protein energy wasting in patients with end stage renal disease. Despite the results reported in earlier preclinical studies or clinical 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 tabelecleucel, ATA520, ATA188, ATA190, ATA230 or any of our other product candidates in any particular jurisdiction. Tabelecleucel has been predominantly evaluated in a single-center trial under investigator-sponsored INDs held by MSK, utilizing a different response criteria and endpoints from those we may utilize in later clinical trials. For example, the primary endpoint of both the MATCH and ALLELE trials is confirmed best objective response rate defined as the percent of patients achieving either a complete or partial response to treatment with tabelecleucel confirmed after the initial tumor assessment showing a response. In contrast, neither the prior MSK trials nor our EAP trial protocol require response confirmation. The findings may not be reproducible in late phase trials we conduct. For regulatory approvals, we plan on using independent radiologist and/or oncologist assessment of responses which may not correlate with the investigator reported assessments. In addition, the Phase 2 clinical trials with tabelecleucel enrolled a heterogeneous group of patients with a variety of EBV-associated malignancies, including but not limited to EBV+ PTLD after HCT and EBV+ PTLD after SOT. These Phase 2 trials were not prospectively designed to evaluate the efficacy of tabelecleucel in the treatment of a single disease state for which we may later seek approval. Moreover, final trial results may not be consistent with interim trial results. Efficacy data from prospectively designed trials may differ significantly from those obtained from retrospective subgroup analyses. In addition, clinical data obtained from a clinical trial with an autologous product candidate may not yield the same or better results with an allogeneic product candidate. 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 trials.

We may experience delays in our ongoing or future clinical trials and we do not know whether clinical 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 trials of any of our product candidates on clinical hold in the future. Clinical 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 trial design that we are able to execute;
- delay or failure in obtaining authorization to commence a trial or inability to comply with conditions imposed by a regulatory authority regarding the scope or design of a trial;
- delay or failure in reaching agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- 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 trial at each site;
- withdrawal of clinical trial sites from our clinical trials or the ineligibility of a site to participate in our clinical trials;
- delay or failure in recruiting and enrolling suitable subjects to participate in a trial;
- delay or failure in subjects completing a trial or returning for post-treatment follow-up;
- clinical sites and investigators deviating from trial protocol, failing to conduct the trial in accordance with regulatory requirements, or dropping out of a trial;
- inability to identify and maintain a sufficient number of trial sites, many of which may already be engaged in other clinical trial programs, including some that may be for the same indication;
- failure of our third-party clinical trial managers to satisfy their contractual duties, meet expected deadlines or return trustworthy data;
- delay or failure in adding new 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 studies and clinical trials, that might require modification to the protocol for a 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 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 product candidate;
- difficulties in manufacturing or obtaining from third parties sufficient quantities and breadth of appropriate partially HLA matched cell line from among the available T-cell lines to start or to use in clinical trials;
- lack of adequate funding to continue a 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 trial.

Patient enrollment, a significant factor in the timing of clinical 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 trial, the design of the clinical trial, ability to obtain and maintain patient consents, risk that enrolled subjects will drop out or die before completion, competition for patients from other clinical trials, risk that we do not have an appropriately matched HLA cell line, competing clinical 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 tabelecleucel, ATA188, ATA520, ATA230 or any future product candidates if we are unable to locate and enroll a sufficient number of eligible participants in these trials as required by the FDA or other regulatory authorities. Even if we are able to enroll a sufficient number of patients in our

clinical trials, if the pace of enrollment is slower than we expect, the development costs for our product candidates may increase and the completion of our trials may be delayed or our trials could become too expensive to complete. The CMA will be based on clinical data from Phase 1 and 2 trials conducted at MSK and dependent on certain available data from our Phase 3 trials in EBV+ PTLD who have failed rituximab after HCT and SOT. The Phase 3 data that will be submitted as support for the CMA will require a certain number of patients to be enrolled and evaluated in the ongoing trial prior to the time of filing. We rely on CROs, other vendors and clinical trial sites to ensure the proper and timely conduct of our clinical 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 trial of our product candidates, the approval and 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 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 trials for our product candidates may also decrease the period of commercial exclusivity. In addition, many of the factors that could cause a delay in the commencement or completion of clinical 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. For example, hypoxia has been observed in some patients receiving ATA230 for the treatment of their CMV pneumonitis. As a result of safety or toxicity issues that we may experience in our clinical trials, we may not receive approval to market any product candidates, which could prevent us from ever generating revenues or achieving profitability. Results of our trials could reveal an unacceptably high severity and incidence of side effects. In such an event, our 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 or limit access of such product to selective specialized centers with additional safety reporting and with requirements that patients be geographically close to these centers for all or part of their treatment that could diminish the usage or otherwise limit the commercial success of such products;
- we may be required to conduct post-marketing 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 or maintain 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. Both the FDA and the EMA have granted us orphan status for tabelecleucel for EBV+ PTLD after HCT or SOT. EMA has granted us orphan status for ATA230 for CMV infection in patients with impaired cell-mediated immunity and FDA has granted us orphan status for the ATA230 for the treatment of CMV viremia and disease in immunocompromised patients.

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 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 be maintained or 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. 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. A product candidate that has been approved for sale in a particular country may not receive reimbursement approval 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-marketing information. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance by us and/or our contract manufacturing organizations, or CMOs, and CROs for any post-approval clinical trials that we conduct. 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 initial and 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 cGTP, 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 trials;
- 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 successfully 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 the U.S. 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. 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.

Regulations, guidelines and recommendations published by various government agencies and organizations may affect the use of our product candidates.

Although treatment with EBV specific T-cells is recognized as a recommended treatment for persistent or progressive EBV+ PTLD as set forth in the 2017 National Comprehensive Cancer Network Guidelines, future guidelines from governmental agencies, professional societies, practice management groups, private health/science foundations and organizations involved in various diseases may relate to such matters as product usage, dosage, and route of administration and use of related or competing therapies. Changes to these recommendations or other guidelines advocating alternative therapies could result in decreased use of our product candidates, which may adversely affect 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 Manufacturing

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 MSK and QIMR Berghofer. To facilitate the manufacture of additional drug product for our Phase 3 clinical trials using the MSK manufacturing testing and process know-how, we undertook the process of transferring this know-how to our CMO. Transferring manufacturing testing and processes and know-how is complex and involves review and incorporation of both documented and undocumented processes that may have evolved over time. In addition, transferring production to different facilities may require utilization of new or different processes to meet the specific requirements of a given facility. We and our CMOs will need to conduct significant development work to transfer these processes and manufacture each of our product candidates for studies, trials and commercial launch readiness. We cannot be certain that all relevant know-how has been adequately incorporated into the manufacturing process until the completion of studies (and the related evaluations) intended to demonstrate the comparability of material previously produced by MSK with that generated by our CMO. The inability to manufacture comparable drug product by us or our CMO could delay the continued development of our product candidates. Although we believe we have manufactured material that is comparable to that previously produced by MSK, the FDA, EMA, and other comparable regulatory authorities may not agree.

The processes by which our product candidates are manufactured were initially developed by MSK or QIMR Berghofer for clinical purposes. We and our CMO 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-up, process reproducibility, stability issues, 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 cellular therapies is complex, highly regulated and subject to several risks, including but not limited to:

- the process of manufacturing 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 and distribution processes for any of our product candidates could result in reduced production yields, impact to key product quality attributes, and other supply disruptions. Product defects can also occur unexpectedly. 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 our T-cell immunotherapy product candidates are manufactured from the blood of third-party donors, the process of manufacturing is susceptible to the availability of the third-party donor material. 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 with viruses or other pathogens in either the donor material or materials utilized in the manufacturing

process or ingress of microbiological material at any point in the process may result in contaminated or unusable product. Such contaminations could result in delays in the manufacture of products which could result in delays in the development of our product candidates. Such contaminations could also increase the risk of adverse side effects. 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 product which could delay the development of our product candidates. 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 product candidates could damage our reputation and the reputation of our products among physicians, healthcare payors, patients or the medical community, and cancer treatment centers, which could adversely affect our ability to operate our business and our results of operations.

We intend to manufacture at least a portion of our product candidates ourselves. Delays in building, commissioning and receiving regulatory approvals for our manufacturing facility could delay our development plans and thereby limit our ability to generate revenues.

In February 2017, we entered into a lease to build a manufacturing facility in Thousand Oaks, California, which we intend to use to manufacture preclinical and clinical trial materials for our product candidates. This new manufacturing facility is expected to be completed to support clinical production in 2019. This project may result in unanticipated delays and cost more than expected due to a number of factors, including regulatory requirements. If the appropriate regulatory approval for the new facility is delayed, we may not be able to manufacture sufficient quantities of our drug candidates, which would limit our development activities and our opportunities for growth.

In addition to the similar manufacturing risks described in "Risks Related to Our Dependence on Third Parties," our manufacturing facility will be subject to ongoing, periodic inspection by the FDA, EMA or other comparable regulatory agencies to ensure compliance with cGMP and GTP. Our failure to follow and document our adherence to such cGMP and GTP regulations or other regulatory requirements may lead to significant delays in the availability of products for clinical or, in the future, commercial use, may result in the termination of or a hold on a clinical trial, or may delay or prevent filing or approval of marketing applications for our product candidates. We also may encounter problems with the following:

- achieving adequate or clinical-grade materials that meet FDA, EMA or other comparable regulatory agency standards or specifications with consistent and acceptable production yield and costs;
- shortages of qualified personnel, raw materials or key contractors; and
- ongoing compliance with cGMP regulations and other requirements of the FDA, EMA or other comparable regulatory agencies.

Failure to comply with applicable regulations could also result in sanctions being imposed on us, including fines, injunctions, civil penalties, a requirement to suspend or put on hold one or more of our clinical trials, failure of regulatory authorities to grant marketing approval of our drug candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of drug candidates, operating restrictions and criminal prosecutions, any of which could harm our business.

Developing advanced manufacturing techniques and process controls is required to fully utilize our facility. Advances in manufacturing techniques may render our facility and equipment inadequate or obsolete, without further investment.

In order to produce our product candidates in the quantities that we believe will be required to meet anticipated market demand of any of our drug candidates if approved, we will need to increase, or "scale up," the production process by a significant factor over the initial level of production. If we are unable to do so, are delayed, or if the cost of this scale up is not economically feasible for us or we cannot find a third-party supplier, we may not be able to produce our product candidates in a sufficient quantity to meet future demand.

If our sole clinical manufacturing facility or our CMO is damaged or destroyed or production at these facilities is otherwise interrupted, our business and prospects would be negatively affected.

If our manufacturing facility or CMO or the equipment in either is damaged or destroyed, we may not be able to quickly or inexpensively replace our manufacturing capacity or replace it at all. In the event of a temporary or protracted loss of this facility or equipment, we may not be able to transfer manufacturing to a third party. Even if we could transfer manufacturing to a third party, the shift would likely be expensive and time-consuming, particularly since the new facility would need to comply with the necessary regulatory requirements and we would need regulatory approval before selling any products manufactured at that facility. Such an event could delay our clinical trials or reduce our commercial product sales.

Currently, we maintain insurance coverage against damage to our property and to cover business interruption and research and development restoration expenses. However, our insurance coverage may not reimburse us, or may not be sufficient to reimburse us, for any expenses or losses we may suffer. We may be unable to meet our requirements for our product candidates if there were a catastrophic event or failure of our current manufacturing facility or processes.

Risks Related to Our Dependence on Third Parties

We rely on third parties to conduct our preclinical 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 trials for ATA520 as well as perform the analysis, publication and presentation of data and results related to this program and the historical phase 1/2 tabelecleucel and ATA230 programs. We also rely on studies previously conducted by MSK. Our collaborating investigators at QIMR Berghofer manage the conduct of the ongoing clinical trials for ATA190. We are utilizing a CRO for our EAP trial of tabelecleucel and for our open Phase 3 trials for EBV+ PTLD after HCT and SOT. We rely on these parties for the execution of our preclinical studies and clinical trials, and we control only some aspects of their activities. Nevertheless, we are responsible for ensuring that each of our trials 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 partners or 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 and cGTP 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 studies 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. 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. Other data from studies or trials previously conducted by MSK or QIMR Berghofer 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 timely or on commercially reasonable terms.

We have limited experience manufacturing our product candidates on a clinical scale and no experience manufacturing on a commercial scale. We are, and expect to continue to be, 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 currently operate our own facilities for the manufacturing of our product candidates. In the case of tabelecleucel, we currently rely on our CMO for the production of this product candidate and the acquisition of materials incorporated in or used in the manufacturing or testing of these product candidates. In the case of ATA230, we currently rely on MSK for the production of this product candidate and acquisition of the materials incorporated in or used in the manufacturing or testing. In the case of ATA520, we currently rely on our CMO for the production of this product candidate. In the case of ATA188 and ATA190, we currently rely on an affiliate of QIMR Berghofer for the production of these product candidates and acquisition of the materials incorporated in or used in the manufacturing or testing. Our CMOs or partners are not our employees, and except for remedies available to us under our agreements with such CMOs or partners, we cannot control whether or not they devote sufficient time and resources, including experienced staff, to the manufacturing of supply for our ongoing clinical, nonclinical and preclinical programs. To meet our projected needs for clinical and commercial materials to support our activities through regulatory approval and commercial manufacturing of ATA188, ATA190, ATA520 and ATA230, we will need to transition the manufacturing of such materials to a CMO and/or our own facility, and such CMOs or we will need to develop relationships with suppliers of critical starting or other materials, increase the scale of production and demonstrate comparability of the material produced at these facilities to the material that was previously produced. Transferring manufacturing processes and know-how is complex and involves review and incorporation of both documented and undocumented processes that may have evolved over time. In addition, transferring production to different facilities may require utilization of new or different processes to meet the specific requirements of a given facility. We would expect additional comparability work will also need to be conducted to support the transfer of certain manufacturing processes and process improvements. We cannot be certain that all relevant know-how and data has been adequately incorporated into the manufacturing process until the completion of studies (and the related evaluations) intended to demonstrate the comparability of material previously produced with that generated by our CMO. For example, we generated and evaluated data from new material manufactured by our CMO and identified certain assays that need refinement prior to initiating the Phase 3 trials. We have generated comparability data using our refined assays and cell lines produced by our CMO which data we believe supports the demonstration of comparability, and we recently initiated the Phase 3 trials in the U.S. following discussions with FDA.

If we are not able to successfully transfer this know-how and produce comparable product candidates our ability to further develop and manufacture our product candidates may be negatively impacted. We may need to identify additional CMOs for continued production of supply for all of our product candidates. In addition, given the manufacturing processes for our T-cell immunotherapy product candidates, the number of CMOs who possess the requisite skill and capability to manufacture our T-cell immunotherapy 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. In February 2017, we entered into a lease agreement to build our own cellular therapy manufacturing facility in Thousand Oaks, CA. At this facility, we intend to build the requisite quality and production systems to manufacture our product candidates for clinical or commercial use, if approved. Manufacturing cellular therapies 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 product candidates at costs, or in sufficient 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 or comparable regulatory authorities not agree with our product candidate 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 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 cGMP, cGTP and similar regulatory jurisdictional 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 limited control over our manufacturers' compliance with these regulations and standards. Any failure by our third-party manufacturers to comply with cGMP or cGTP 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 for an ongoing clinical trial could considerably delay initiation or completion of our clinical trials, product testing and potential regulatory approval of our product candidates. If we or our CMOs are unable to purchase 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, trademarks, trade secrets and confidentiality agreements to protect the intellectual property related to our technology and product candidates. The T-cell immunotherapy product candidates and platform technology we have licensed from MSK and QIMR Berghofer are protected primarily by patent or patent applications and 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 U.S. 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. There is no assurance that all potentially relevant prior art relating to our patents and patent applications is known to us or has been found in the instances where searching was done. We may be unaware of prior art that could be used to invalidate an issued patent or prevent a pending patent application from issuing as a patent. 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. There is no guarantee that we will be able to obtain a license from this other entity on commercially reasonable terms, or at all. If this entity licenses its rights elsewhere, our competitors might gain access to this intellectual property. Also, 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 jeopardize 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 filed a number of patent applications covering our product candidates or methods of using or making those 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 that have never had a claim with an effective filing date on or after March 16, 2013, an interference proceeding in the United States can be initiated by the USPTO to determine who was the first to invent any of the subject matter covered by the patent claims of our applications or patents. Similarly, we could become involved in derivation proceedings before the USPTO to determine inventorship with respect to our patent applications. We may become involved in *inter partes* review or post-grant review proceedings in the USPTO regarding our intellectual property rights. We may also become involved in 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 U.S. government. As a result, the government has certain rights, such as 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 practice the invention for or on behalf of the United States. 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 U.S. 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 and other adversarial proceedings, 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, and *inter partes* and post-grant review proceedings before the USPTO and non-U.S. patent offices. Numerous U.S. and non-U.S. 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 on or 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 in a district court proceeding requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents, and proving invalidity in an inter partes review proceeding in the USPTO requires a showing of a preponderance of the evidence. 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 or where we do not have exclusive rights under the relevant patent(s) 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 or where we do not have exclusive rights under the relevant patent(s), or 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 MSK and QIMR Berghofer. If we breach any of our license agreements with MSK or QIMR Berghofer, we could lose the ability to continue the development and potential commercialization of one or more of our product candidates.

We hold rights under license agreements with MSK and QIMR Berghofer that are important to our business. Our discovery and development platform is built, in part, around patent rights in-licensed from MSK and QIMR Berghofer. Under our existing 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 our counterparties 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 our counterparties may have a right to terminate the affected license. The loss of our license agreements 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 licensor's intellectual property rights. Our and our licensor's 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 licensor's 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 or that our intellectual property rights are invalid. 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 licensor's 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 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, post-grant review or other preissuance or post-grant proceedings in the USPTO or its foreign counterparts relating to our intellectual property or the intellectual property 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 licensor's 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 are 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 U.S. Congress, the federal courts and/or 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.

Patent reform legislation that has occurred 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.

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 immunotherapy product candidates and platform technology we have licensed from MSK and QIMR Berghofer 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 product candidates, thus eroding our competitive position in the market. 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 cancer treatment centers.

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 cancer treatment centers. 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 and patient populations for which the product candidate is approved;
- acceptance by physicians, major cancer treatment centers 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 immunotherapy 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 cancer treatment centers, we will not be able to generate significant revenues, which would compromise our ability to become profitable.

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 particular, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively, the Affordable Care Act, was enacted, which substantially changes the way health care is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The Affordable Care Act and its implementing regulations, among other things, addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics, including our product candidates, that are inhaled, infused, instilled, implanted or injected, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program, extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations, subjected manufacturers to new annual fees and taxes for certain branded prescription drugs, provided incentives to programs that increase the federal government's comparative effectiveness research and established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% (and 70% starting January 1, 2019) point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D.

Other legislative changes have been proposed and adopted in the United States since the Affordable Care Act was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by the U.S. Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013, and, due to subsequent legislative amendments, will remain in effect through 2027 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, or the ATRA, which, among other things, further reduced Medicare payments to several providers, including hospitals and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. We cannot predict the initiatives that may be adopted in the future. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- the demand for our product candidates, if we obtain regulatory approval;
- our ability to set a price that we believe is fair for our products;
- our ability to generate revenue and achieve or maintain profitability;
- the level of taxes that we are required to pay; and
- the availability of capital.

Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors, which may adversely affect our future profitability. Since its enactment, there have been judicial and Congressional challenges to numerous provisions of the Affordable Care Act, as well as recent efforts by the Trump administration to repeal or replace certain aspects of the Affordable Care Act. Since January 2017, President Trump has signed two Executive Orders designed to delay the implementation of certain provisions of the Affordable Care Act or otherwise circumvent some of the requirements for health insurance mandated by the Affordable Care Act. Concurrently, the U.S. Congress has considered legislation that would repeal or repeal and replace all or part of the Affordable Care Act. While the U.S. Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the Affordable Care Act have been enacted. The Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the Affordable Care Act on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". Additionally, on January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain mandated fees under the Affordable Care Act, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018, among other things, amends the Affordable Care Act, effective January 1, 2019, to increase from 50 percent to 70 percent the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole". The U.S. Congress may consider other legislation to repeal and replace elements of the Affordable Care Act. Any repeal and replace legislation may have the effect of limiting the amounts that government agencies will pay for healthcare products and services, which could result in reduced demand for our products or additional pricing pressure, or may lead to significant deregulation, which could make the introduction of competing products and technologies much easier. Policy changes, including potential modification or repeal of all or parts of the Affordable Care Act or the implementation of new health care legislation could result in significant changes to the health care system, which could have a material adverse effect on our business, results of operations and financial condition.

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. For example, in the United States, there have been several recent Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. At the federal level, the Trump administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. While any proposed measures will require authorization through additional legislation to become effective, the U.S. Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, to encourage importation from other countries and bulk purchasing. 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. Additionally, our commercial opportunities will be reduced or eliminated if novel upstream products reduce the overall incidence or prevalence of our target diseases. 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.

There are currently no FDA or EMA approved products for the treatment of EBV+ PTLD. However, some approved products and therapies are used off-label in the treatment of EBV+ PTLD, such as rituximab and combination chemotherapy regimens. In addition, a number of companies and academic institutions are developing drug candidates for EBV+ PTLD and other EBV associated diseases including: Cell Medica Ltd., which is conducting Phase 2 clinical trials for baltaleucel-T, an autologous EBV specific T-cell therapy in post-transplant lymphoproliferative disorder, Viracta Therapeutics, Inc., Viracta, which has initiated Phase 1b/2 clinical trials for tractinostat (VRx-3996) in combination with antiviral drug valganciclovir in relapsed/refractory EBV^{+} lymphomas, and Viracyte, which is conducting a Phase 2 clinical trial for Viralym-M™ , an allogeneic, multi-virus T-cell product that targets five viruses including EBV. In addition, Tessa Therapeutics Pte Ltd. is developing TT10, an autologous EBV specific T-cell therapy, which is currently being evaluated in Phase 3 clinical trials for the treatment of nasopharyngeal carcinoma.

Drug therapies approved or commonly used for CMV infection include antiviral compounds such as ganciclovir, valganciclovir, cidofovir and foscarnet and Merck's recently approved Prevymis ™ (letermovir), a DNA terminase inhibitor. In addition, a number of companies and academic institutions are developing drug candidates for CMV infection and other CMV-associated diseases. These companies and academic institutions are in various stages of development with their product candidates. Shire Plc which is conducting Phase 3 clinical trials of maribavir, a UL97 protein kinase inhibitor and Vical Inc., recently announced ASP0113, a therapeutic bivalent plasma DNA CMV vaccine being evaluated in patients undergoing an allogeneic stem cell transplant, failed to meet primary or secondary endpoints in Phase 3 clinical trials. In addition, Helocyte, Inc., is conducting two Phase 2 clinical trials for a CMV MVA-vaccine and a CMV peptide vaccine in patients undergoing an allogeneic hematopoietic stem cell transplant; a monoclonal antibody combination therapy; Merck is conducting Phase 2 clinical trials for V160, a CMV DNA vaccine; VBI Vaccines Inc., has completed Phase 1 clinical trials for VBI-1501A, an eVLP vaccine; Hookipa Biotech, is conducting Phase 1 clinical trials for HB101, a bivalent vaccine, ViraCyte, is conducting Phase 1 clinical trials for Viralym-C, a CMV-specific allogeneic cell therapy product; Fate Therapeutics is conducting a Phase 1/2 clinical trial for ProTmune, a small molecule programmed mobilized peripheral blood graft; Chimerix is conducting Phase 1 clinical trials for intravenous brincidofovir (BCV IV), a nucleotide analog and Moderna Therapeutics is conducting Phase 1 clinical trials for mRNA-1647, an mRNA based prophylactic vaccine.

Competition in the MS market is high with fourteen therapies, including two generics, approved for the treatment of relapsing-remitting multiple sclerosis (RRMS) in the U.S. and European Union. There are many U.S. and international competitors in the RRMS market, including major multi-national fully-integrated pharmaceutical companies and established biotechnology companies. Most recently, Ocrevus®, marketed by F. Hoffmann-La Roche, was approved for the treatment of relapsing MS in the U.S. and European Union. There are numerous other development candidates in Phase 3 trials for RRMS including Novartis' anti-CD20 monoclonal antibody ofatumumab; Biogen's BIIB098 (formerly Alkermes' ALKS 8700); and J&J/Actelion's next-generation sphingosine 1-phosphate receptor (S1PR) agonist ponesimod. Celgene recently received a Refusal to File letter from the FDA regarding ozanimod, an S1PR and S1PR5 agonist, in relapsing MS, however, they have stated they will resubmit their regulatory filing in 2019.

Only three therapies have been approved for the treatment of progressive MS. Recently, Ocrevus® was approved in the U.S. and European Union for the treatment of primary progressive MS (PPMS). Extavia® (marketed by Novartis) and Betaseron® (marketed by Bayer AG) are approved in the European Union for the treatment of secondary progressive MS (SPMS). Few therapies have been approved for progressive MS because many candidates have failed during clinical trial testing. In the U.S., there is one drug (mitoxantrone) approved to treat SPMS, which is now generic. Novartis has initiated the submission of siponimod for US approval in SPMS and plans to launch in first half 2019. Filing for EU approval is planned to follow later in 2018.

The SPMS and PPMS markets have active development pipelines and additional novel agents could be approved in the future. Several development candidates are being evaluated in trials including a number of Phase 3 programs: MedDay's MD-1003, a concentrated form of biotin, and AB Science's masitinib, a tyrosine kinase inhibitor, are pursuing both SPMS & PPMS. Medicinova's MN166(ibudilast) is in Phase 2 trials for PPMS.

Several products are approved for the treatment of relapsed or refractory multiple myeloma (MM) including immunomodulatory drugs (IMIDs) such as Thalomid® (Celgene Corporation), Revlimid® (Celgene Corporation) and Pomalyst® (Celgene Corporation); monoclonal antibodies such as Darzalex® (Janssen Research & Development, LLC) and Empliciti® (Bristol Myers Squibb); and proteasome inhibitors such as Velcade® (Millennium Pharmaceuticals, Inc.) and Kyprolis® (Amgen Inc.).

A number of companies and institutions are pursuing development programs for relapsed or refractory MM. These development programs include drug candidates being evaluated in clinical trials as a monotherapy or in combination with other approved agents. In addition, many groups are developing novel T-cell therapies such as autologous CAR T-cell or autologous TCR T-cell candidates. These include bluebird bio, Inc., which is conducting Phase 2 clinical trials testing bb2121, an anti-BCMA CART; Gilead Sciences, Inc., which is testing KTE-585, an anti-BCMA CART in Phase 1 clinical trials; Juno Therapeutics, which is testing an anti-BCMA CART in Phase 1 clinical trials; Autolus Limited, which is testing AUTO-2, a bi-specific anti-BCMA/TACI CART in Phase 1 clinical trials and Adaptimmune Therapeutics PLC, which is testing an anti-NY-ESO TCR in Phase 1/2 clinical trials.

Many of the approved or commonly used drugs and therapies for EBV+ PTLD, CMV, MS and relapsed or refractory multiple myeloma 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, commercial 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 are at the earliest stages of establishing an organization that will be responsible 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 a sufficiently scaled and trained 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, 2018, we had 267 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 our product candidates. 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 preclinical studies and clinical 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 preclinical studies and clinical 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. Our employment agreement with Dr. Ciechanover is at-will and does not prevent him from terminating his employment with us at any time. The loss of the services of Dr. Ciechanover 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, privacy and other 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, overtly or covertly, 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 or approval 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 held by covered entities and their business associates;
- 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;
- 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; and
- 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, disgorgement, additional reporting requirements and/or oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, 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 product liability insurance coverage at a level that 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 cover age 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, which could adversely affect our business, financial condition, results of operations and prospects.

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

Our internal computer systems, and those of MSK, QIMR Berghofer, our CROs, our CMOs, 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.

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

On December 22, 2017, President Trump signed into law new tax legislation, or the Tax Act, which significantly reforms the Internal Revenue Code of 1986, as amended. The Tax Act, among other things, contains significant changes to corporate taxation, including reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%; limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses); limitation of the deduction of net operating losses generated in tax years beginning after December 31, 2017 to 80% of taxable income, indefinite carryforward of net operating losses generated in tax years after 2018 and elimination of net operating loss carrybacks; changes in the treatment of offshore earnings regardless of whether they are repatriated; current inclusion in U.S. federal taxable income of certain earnings of controlled foreign corporations, mandatory capitalization of research and development expenses beginning in 2022; immediate deductions for certain new investments instead of deductions for depreciation expense over time; further deduction limits on executive compensation; and modifying, repealing and creating many other business deductions and credits, including the reduction in the orphan drug credit from 50% to 25% of qualifying expenditures. We continue to examine the impact this tax reform legislation may have on our business. Notwithstanding the reduction in the corporate income tax rate, the overall impact of the Tax Act is uncertain and our business and financial condition could be adversely affected. The impact of this tax reform on holders of our common stock is also uncertain and could be adverse. This periodic report does not discuss any such tax legislation or the manner in which it might affect us or our stockholders in the future. We urge our stockholders to consult with their legal and tax advisors with respect to such legislation.

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

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

As of December 31, 2017, we reported U.S. federal and state NOLs of approximately $76.0 million and $231.4 million, respectively. These federal NOLs generated prior to 2018 will continue to be governed by the NOL tax rules as they existed prior to the adoption of the new Tax Act, which means that generally they will expire 20 years after they were generated if not used prior thereto. Many states have similar laws. Accordingly, these federal and state NOLs could expire unused and be unavailable to offset future income tax liabilities. Under the newly enacted Tax Act, federal NOLs incurred in 2018 and in future years may be carried forward indefinitely, but the deductibility of such federal NOL's is limited to 80% of current year taxable income. It is uncertain if and to what extent various states will conform to the newly enacted federal tax law.

In addition, under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, our ability to utilize these NOLs and other tax attributes, such as federal tax credits, in any taxable year may be limited if we have experienced an "ownership change." Generally, a Section 382 ownership change occurs if one or more stockholders or groups of stockholders who owns at least 5% of a corporation's stock increases its ownership by more than 50 percentage points over its lowest ownership percentage within a three-year testing period. Similar rules may apply under state tax laws. We completed a Section 382 study of transactions in our stock through December 31, 2017 and concluded that we have experienced an ownership change that we believe under Section 382 of the Code will result in limitations in our ability to use certain of our NOLs and credits. In addition, we may experience future ownership changes as a result of future offerings or other changes in the ownership of our stock, some of which are beyond our control. As a result, the amount of the NOLs and tax credit carryforwards presented in our financial statements could be limited and, in the case of NOL's generated in 2017 and before, may expire unused. Any such material limitation or expiration of our NOL's may harm our future operating results by effectively increasing our future tax obligations.

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. Two of our corporate locations are located in California, an area prone to earthquakes. 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 June 30, 2018, 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.

Our executive officers, directors and stockholders own a significant portion of our outstanding voting stock. 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. Moreover, 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.

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 from the date of our initial public offering. 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. We will be deemed a "large accelerated filer" as of the end of the fourth quarter of 2018 as our public float as of June 29, 2018 was $700 million or greater.

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.

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.

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. For example, our board is divided into three classes. Each class has a three-year term. These classes make it more difficult to replace a majority of our directors in a short period of time. 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

None.

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	
10.1†	Amended and Restated Exclusive License Agreement, by and between Atara Biotherapeutics, Inc. and the Council of the Queensland Institute of Medical Research, dated September 23, 2016, as amended.					X
10.2†	Amended and Restated Research and Development Collaboration Agreement, by and between Atara Biotherapeutics, Inc. and the Council of the Queensland Institute of Medical Research, dated September 2016, as amended.					X
10.3†	Development and Manufacturing Services Agreement, by and between Atara Biotherapeutics, Inc. and Cognate Bioservices, Inc., dated August 2015, as amended.					X
10.4*	Form of Employment Agreement by and between Atara Biotherapeutics, Inc. and its executive officers.					X
31.1	Certification by Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification by Principal Financial and Accounting Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1(1)	Certifications of Chief Executive Officer and Principal Financial and Accounting 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

* Indicates management contract or compensatory plan or arrangement.
† Confidential treatment requested.

(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 1, 2018

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

By: /s/ Utpal Koppikar
Utpal Koppikar
Chief Financial Officer
(Duly Authorized Officer and Principal Financial and Accounting Officer)

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Exhibit 10.1

EXECUTION VERSION

AMENDED AND RESTATED EXCLUSIVE LICENSE AGREEMENT

between

THE COUNCIL OF THE QUEENSLAND INSTITUTE OF MEDICAL RESEARCH

and

ATARA BIOTHERAPEUTICS, INC.

TABLE OF CONTENTS

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

AMENDED AND RESTATED EXCLUSIVE LICENSE AGREEMENT

This **Amended and Restated Exclusive License Agreement** ("**Agreement**") is entered into on 23rd September, 2016 ("**Execution Date**"), and effective as of the Original Effective Date (as defined below), by and between the **Council of the Queensland Institute of Medical Research**, a not-for-profit Institute organized and existing under the laws of the State of Queensland having its principal offices at 300 Herston Rd, Herston QLD 4006, Australia ("**Institute**"), and **Atara Biotherapeutics, Inc.**, a Delaware corporation located at 611 Gateway Blvd #900, South San Francisco, CA 94080 ("**Licensee**"). Each of Licensee and Institute are referred to in this Agreement as a "**Party**" and together, the "**Parties**".

RECITALS

WHEREAS, Institute owns or controls certain technology, including certain patent rights and know-how, and has expertise and knowledge relating to allogeneic and autologous cytotoxic T-lymphocytes ("**CTL**") directed to antigens expressed in association with certain viral infections, for use in oncology and autoimmune indications, made in the course of research at Institute in the laboratory of [*] and are claimed in certain Patent Rights (as defined herein);

WHEREAS, Licensee is a party to a certain agreement with Memorial Sloan Kettering Cancer Center (the "**MSK Agreement**", as further defined below), pursuant to which Licensee obtained [*] at Memorial Sloan Kettering Cancer Center in the laboratory of [*], including [*] targets that include, inter alia, EBV and CMV;

WHEREAS, Licensee and MSK consider the technology and patent rights owned or controlled by Institute to be complimentary and/or supplemental to the rights licensed to Licensee by Memorial Sloan Kettering Cancer Center under the MSK Agreement, and that such Institute technology will be useful for the development, production, or use of Licensed Products (as defined herein) specific to EBV and CMV;

WHEREAS, Licensee wishes to obtain certain rights from Institute to use such Institute technology and patent rights for the commercial development of (a) products based on novel allogeneic and autologous CTLs, [*], in each case directed to viral antigens expressed in association with certain diseases and conditions, in accordance with the terms and conditions set forth herein, and Institute is willing to grant those rights to Licensee so that such products may be developed and the benefits enjoyed by the general public;

WHEREAS, Licensee and Institute are parties to that certain exclusive License Agreement (the "**Original License Agreement**"), entered into on October 20, 2015 (the "**Original Effective Date**");

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

WHEREAS, the Parties further desire that Institute continues to carry out certain research and development activities already being conducted at or under the supervision of Institute, including certain clinical studies directed to the use of autologous CTL therapies in certain oncology and autoimmune indications associated with the expression of EBV and/or CMV [*] on or in tumor and other cells, and to that end, the Parties entered into that certain Research and Development Collaboration Agreement (the "**Original Research Agreement**") simultaneous with the Original License Agreement on the Original Effective Date; and

WHEREAS, the Parties desire to amend and restate such Original Research Agreement in its entirety, and simultaneously to amend and restate the Original License Agreement in its entirety as set forth herein.

NOW, THEREFORE, in consideration of the foregoing and the covenants and promises contained in this Agreement, and intending to be legally bound, the parties agree as follows:

1. **DEFINITIONS**

As used in this Agreement, the following terms, whether used in the singular or plural, shall have the following meanings:

1.1 "[*****] **Technology**" shall have the meaning given in Section 2.4(a).

1.2 "**Additional License**" shall have the meaning given in Section 4.4.

1.3 "**Additional License Payments**" shall have the meaning given in Section 4.4.

1.4 "**Additional Party**" shall have the meaning given in Section 4.4.

1.5 "**Affiliate**" of a Party means any entity which, directly or indirectly, controls such Party, is Controlled by such Party or is under common Control with such Party. For purposes of the Affiliate definition, "**Control**" means: (a) having the actual, present capacity to elect a majority of the directors of such affiliate; (b) having the power to direct at least fifty percent (50%) of the voting rights entitled to elect directors; or (c) in any country where the local law will not permit foreign equity participation of a majority, ownership or control, directly or indirectly, of the maximum percentage of such outstanding stock or voting rights permitted by local law.

1.6 "**Allogeneic CTL**" means CTLs derived from cells obtained from one individual subject and treated, modified, manipulated or otherwise altered for the purposes of delivery to a second, genetically distinct individual subject.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

1.7 "**Allogeneic CTL Product**" means a CTL Product or a New CTL Product derived from or incorporating Allogeneic CTLs.

1.8 "**Autologous CTL**" means CTLs derived from cells obtained from one individual subject and treated, modified, manipulated or otherwise altered for the purposes of delivery back to the same individual subject.

1.9 "**Autologous CTL Product**" means a CTL Product or a New CTL Product derived from or incorporating Autologous CTLs.

1.10 "**Background IP**" means all intellectual property rights (a) Controlled by a Party prior to the Original Effective Date or (b) Controlled by such Party during the Term, but not generated in the performance of the activities contemplated under this Agreement or the Research Agreement.

1.11 "**Base Patent Rights**" shall have the meaning given in Section 13.2(a).

1.12 "[*]" shall have the meaning given in Section 4.4.

1.13 "**Billion**" means one thousand million.

1.14 "**BKV Issue Fee**" shall have the meaning given in Section 4.1(b).

1.15 "**BKV-Specific CTL Product**" means a pharmaceutical or biologic product comprising Autologous CTLs or Allogeneic CTLs, in either case, Specifically Directed to [*] associated with BK Polyomavirus ("**BKV**"), including [*] BKV or [*] with BKV.

1.16 "**Calendar Quarter**" means each successive period of three (3) consecutive calendar months ending on the last day of March, June, September, or December, respectively; provided that, the final Calendar Quarter shall end on the last day of the Term.

1.17 "**CMO** shall have the meaning given in Section 6.1(a).

1.18 "**CMV**" means human cytomegalovirus and any naturally occurring variants thereof.

1.19 "[*] **Option**" shall have the meaning given in Section 2.2(a).

1.20 "**CMV GBM Auto Trial**" shall have the meaning given in Section 2.2(b).

1.21 "**CMV-Specific Autologous Products**" shall have the meaning given in Section 2.2(a).

1.22 "**CMV [*]**" means any [*] in whole or in part, or in any form, with or without [*], and in any formulation, including without limitation any such [*] that is also a [*], for use for (a) [*], or any [*] infected with CMV, or (b) [*] CMV, or any [*] CMV, in each case of (a) and (b), developed [*].

1.23 "**CMV [*] Program**" shall have the meaning given in Section 2.6(a).

1.24 "**Commercially Reasonable Efforts**" means, with respect to the efforts to be expended by a Party or its Affiliate with respect to any objective, activity or decision to be undertaken under this Agreement, those efforts that a well-resourced and financially stable company developing technology within the bio-pharmaceutical industry of comparable size and resources would reasonably use to accomplish such objective, activity or decision under similar circumstances, and specifically means the carrying out of development activities using efforts that a company developing technology within the bio-pharmaceutical industry of comparable size and resources would reasonably devote to a product at a similar stage in its development or commercial product life and of similar market potential, taking into consideration, among other factors, Third Party costs and expenses, including the royalties, milestone and other payments payable to Third Party licensors of patent or other intellectual property rights, and the pricing and reimbursement relating to the product, based on conditions then prevailing, efficacy, safety, approved labeling, the competitiveness of alternative products sold by Third Parties in the marketplace, the patent and other proprietary position of the product, and the likelihood of regulatory approval given the regulatory structure involved. Commercially Reasonable Efforts shall be determined on a Major Market-by-Major Market and Indication-by-Indication basis for Licensed Products being developed under the Research Agreement, and it is anticipated that the level of effort will change over time, reflecting changes in the status of each such Licensed Product, and the market(s) or country(ies) involved. Commercially Reasonable Efforts [*] that the Party [*]. For clarity, Commercially Reasonable Efforts will not mean that a Party guarantees that it will actually accomplish the applicable task or objective.

1.25 "**Comparable Third Party Product**" means, on a Licensed Product-by-Licensed Product basis, and a country-by-country basis, any pharmaceutical or biological product (a) that contains (i) an identical active ingredient(s) as a Licensed Product, or (ii) a "highly similar" active ingredient(s) as such Licensed Product, as the phrase "highly similar" is used in 42 U.S.C. § 262(i)(2), and subject to the factors set forth in FDA's Guidance for Industry, "Quality Considerations in Demonstrating Biosimilarity to a Reference Protein Product," (February 2012), at Section VI, and any successor FDA guidance thereto, (b) for which Regulatory Approval is obtained by reference to Regulatory Materials

of such Licensed Product, (c) is approved for use in such country pursuant to a Regulatory Approval process governing approval of interchangeable or biosimilar biologics as described in 42 U.S.C. §§ 262, or an equivalent process for Regulatory Approval in any country outside the United States, or any other equivalent provision that comes into force, or is the subject of a notice with respect to such Licensed Product under 42 U.S.C. § 262(l)(2) or any other equivalent provision that comes into force in such country, and (d) is sold in the same country as such Licensed Product by any Third Party that is not a Sublicensee of Licensee or its Affiliates and did not purchase such product in a chain of distribution that included any of Licensee or any of its Affiliates or its Sublicensees.

1.26 "**Competing Product**" means any CTL Product that is listed on Schedule 1.26. For clarity, any [*] shall be a Competing Product and (a) shall be subject to Section 2.6 during the Option Period, and to Section 2.4 if the [*] expires without Licensee [*], and (b) if the [*] for (i) the [*] shall automatically be added to Schedule 1.26 upon the [*], and (ii) the [*] shall automatically be added to Schedule 1.26 upon [*].

1.27 **"Confidential Information"** of a Party, means (a) information relating to the business, operations or products of a Party or any Affiliate of such Party, including any know-how, that such Party discloses, transfers or makes available to the other Party under this Agreement or the Research Agreement, or which otherwise becomes known to the other Party by virtue of this Agreement or the Research Agreement, in each case whether in written, oral, graphical, machine readable or other form, whether or not marked as confidential or proprietary, and (b) the terms of this Agreement and the Research Agreement;

1.28 "**Control**", "**Controls**" or "**Controlled**" means, with respect to any intellectual property rights or Confidential Information, the ability of a Party, itself or through an Affiliate of such Party, (whether through ownership or license (other than a license granted in this Agreement or the Research Agreement, as applicable) to grant to the other Party and/or its Affiliates, as applicable, the licenses or sublicenses as provided herein, or to otherwise disclose such intellectual property rights or Confidential Information to the other Party without violating the terms of any then-existing agreement with any Third Party or misappropriating such intellectual property rights or Confidential Information.

1.29 "**CTL**" shall have the meaning given in the first Recital.

1.30 "**CTL Product**" means a pharmaceutical or biologic product comprising Autologous CTLs or Allogeneic CTLs, in either case, Specifically Directed to (a) one or more Targets associated with EBV, including [*] associated with EBV or expressed by a cell infected with EBV (an "**EBV-Specific CTL**

Product") and/or (b) one or more Targets associated with CMV, including [*] associated with CMV or expressed by a cell infected with CMV (a "**CMV-Specific CTL Product**"), including without limitation any [*] to two or more of any of the foregoing Targets in (a) and/or (b).

1.31 "**CTL Technology**" means proprietary rights Controlled by Institute with respect to information, know-how, concepts, ideas, techniques and data that relate to Allogeneic CTLs and/or Autologous CTLs, including methods of manufacture or use of such Allogeneic CTLs and/or Autologous CTLs.

1.32 "**Data Exclusivity Protection**" means in a particular country with respect to a Licensed Product, any Law that prevents (notwithstanding any exceptions or provisos, save to the extent that such exceptions or provisos may be applied in the particular case) the use of, or reliance upon, clinical data generated by Licensee (or its Affiliate or Sublicensee) by a Third Party to obtain regulatory approval for a product, where such Third Party has not obtained the rights to market or sell such product as a licensee, sublicensee or distributor of Licensee or any of its Affiliates, licensees or Sublicensees with respect to such product.

1.33 "**Data Package**" means, with respect to the exercise of the EBV Autologous Option and the [*] Option: (a) all [*] from clinical trials conducted pursuant to the Development Plan (as defined in the Research Agreement), for the EBV-Specific Autologous Products and CMV-Specific Autologous Products, as applicable, including (b) [*] EBV-Specific Autologous Products and CMV-Specific Autologous Products, as applicable, tested in such clinical trials, as specified in the applicable protocol and statistical analysis plan for such clinical trials, and (c) copies of [*], including [*] (in each case to the extent available and in the possession and control of Institute). For clarity, the Data Package to be provided by Institute to Licensee prior to the exercise of the EBV Autologous Option shall include all of the foregoing for the EBV MS Auto Trial (as defined in Section 2.2(b)), and the Data Package to be provided by Institute to Licensee prior to the exercise of the [*] Option shall include all of the foregoing for the CMV GBM Auto Trial (as defined in Section 2.2(b)).

1.34 "**Designated Executive Officers**" means the Chief Executive Officer of Licensee and the Director and Chief Executive Officer of Institute or such other senior executive officer of either Party notified in writing by such Party to the other Party from time to time.

1.35 "**Development Plan**" means the development plan provided by Licensee to Institute that provides the activities, and the associated estimated timelines of when such activities shall be conducted (including in detail the activities that shall be conducted in the calendar year following the submission of such Development Plan to Institute), in order to develop Licensed Products for commercialization.

1.36 "**Diagnostic Product**" means any test or assay for diagnosing or detecting a disease, disorder, medical condition, or symptom.

1.37 "**Dispute**" shall have the meaning given in Section 20.1.

1.38 "[*]" shall have the meaning given in Section 4.4.

1.39 "[*]" shall have the meaning given in Section 4.4.

1.40 "[*]" shall have the meaning given in Section 4.4.

1.41 "**Earned Royalty**" has the meaning set forth in Section 4.6.

1.42 "**EBV**" means Epstein-Barr Virus, also known as human herpes virus 4 and any naturally occurring variants thereof.

1.43 "**EBV Autologous Option**" shall have the meaning given in Section 2.2(a).

1.44 "**EBV MS Auto Trial**" shall have the meaning given in Section 2.2(b).

1.45 "**EBV-Specific Autologous Products**" shall have the meaning given in Section 2.2(a).

1.46 "**EBV [*]**" means any [*], in whole or in part, or in any form, with or without [*] and in any formulation, including without limitation any such [*] that is also a [*], for use for (a) [*] EBV, or [*] associated with EBV or [*] with EBV, or (b) [*] EBV, or any [*] EBV, in each case or (a) or (b), [*].

1.47 "**EBV [*] Program**" shall have the meaning given in Section 2.6(a).

1.48 "**Existing Confidentiality Agreement**" shall have the meaning given in Section 22.2.

1.49 "**First Commercial Sale**" means, on a country-by-country basis, the first Sale of Licensed Product in such country to a Third Party by the Licensee, or any of its Affiliates or Sublicensees, in each case after all Regulatory Approvals have been obtained in such country, if applicable.

1.50 "**First Patient First Dose**" or "**FPFD**" means the first dosing of the first patient in a clinical trial.

1.51 "**Governmental Authority**" means any court, agency, department, bureau, commissions, council, or other entity or instrumentality of any supra-national, federal, national, regional, state, provincial, or local or other political subdivision.

1.52 "**HPV-Specific CTL Product**" means a pharmaceutical or biologic product comprising Autologous CTLs or Allogeneic CTLs, in either case, Specifically Directed to one or more Targets

associated with human papilloma virus ("**HPV**"), including [*] associated with HPV or [*] with HPV.

1.53 "**Indication**" means any disease or condition, or sign or symptom of a disease or condition.

1.54 "**Infringement Notice**" shall have the meaning given in Section 14.1.

1.55 "[*]" shall have the meaning given in Section 4.4.

1.56 "**Institute Indemnitees**" shall have the meaning given in Section 15.1.

1.57 "**Institute [*] Programs**" shall have the meaning given in Section 2.6(a).

1.58 "**Issue Fee**" shall have the meaning given in Section 4.1(a).

1.59 "**JSC**" means the joint steering committee established pursuant to Article 3 of the Research Agreement.

1.60 "**Know-How Rights**" means the know-how and any supplemental information, including concepts, ideas, sequences, formulas, protocols, procedures, techniques and data (a) Controlled by Institute as of the Execution Date (including any of the foregoing Controlled by Institute as of the Original Effective Date), or (b) Controlled by Institute at any time during the Term and arising [*], or (c) Controlled by Institute and arising from activities conducted by either Party pursuant to the Research Agreement, in each case of (a) through (c), that (i) covers or relates to CTL Technology; and (ii) is not covered by a Valid Claim of the Patent Rights, or, if the subject of a patent or patent application in Patent Rights, does not issue as a Valid Claim.

1.61 "**Law**" or "**Laws**" means all applicable laws, statutes, rules, regulations, ordinances and other pronouncements having the binding effect of law of any Governmental Authority.

1.62 "**Licensed Field**" means therapeutic, palliative, prophylactic and diagnostic (including in relation to companion diagnostics) uses in all diseases and conditions and for all indications.

1.63 "**Licensed Method**" means any process, art or method the use or practice of which, but for the license granted in this Agreement, would infringe, or contribute to, or induce the infringement of, any Patent Rights in any country were they issued at the time of the infringing activity in that country.

1.64 "**Licensed Product(s)**" means any (a) CTL Product or New CTL Product or Program [*], including, without limitation, a CTL Product or New CTL Product or Program [*] for use or used in practicing a Licensed Method and any product made by practicing a Licensed Method, (b) a Diagnostic

Product sold for use in connection with a CTL Product or New CTL Product or Program[*], or (c) any services provided using a CTL Product or New CTL Product or Program [*] set forth in (a), in each case of (a), (b) or (c) , where the manufacture, use, Sale, offer for Sale or import of which in a given country, (i) but for the license granted in this Agreement, would infringe, or contribute to, or induce the infringement of a Valid Claim of any Patent Rights in such country, (ii) would infringe, or contribute to, or induce the infringement of a Valid Claim of any Licensee Patents in such country, and/or (iii) would utilize the Know-How Rights. For clarity, Licensed Products include Allogeneic CTL Products and Autologous CTL Products, but subject to Section 2.6, do not include [*] unless and until Licensee [*] for the applicable [*].

1.65 "**Licensee Patents**" means any and all patents or patent applications Controlled by Licensee that cover or claim inventions created, discovered, conceived, developed or reduced to practice in the course of activities conducted pursuant to the Research Agreement, including the following forms of intellectual property rights anywhere in the world that fall within the foregoing: (a) issued patents, continuations, continuations-in-part, divisionals, substitutions, confirmations, reissues, re-examination, validations, extensions, renewals, restorations or any similar governmental grant for protection of inventions; (b) pending applications for any of the foregoing (including both provisional and non-provisional applications); and (c) all patents and patent applications claiming priority directly or indirectly to any of the foregoing, or from which any of the foregoing claim direct or indirect priority, in each case including any joint interest in such rights held jointly with Institute.

1.66 "**Licensee [*] Development Plan**" shall have the meaning given in Section 5.2.

1.67 "**Major Markets**" means (a) the United States, and (b) [*] the following countries of the European Union: France, United Kingdom, Italy, Germany and Spain.

1.68 "**Manufacturing Agreement**" shall have the meaning given in Section 6.1.

1.69 "**Milestone**" shall have the meaning given in Section 4.3(a).

1.70 "**Milestone Payment**" shall have the meaning given in Section 4.3(a).

1.71 "**MSK Agreement**" means the exclusive license agreement dated June 12, 2015, by and between Licensee and Memorial Sloan Kettering Cancer Center.

1.72 "**Net Sale**" means the amount invoiced by Licensee or by any Affiliate or Sublicensee for Sales of Licensed Products, after deduction of the following in accordance with U.S. Generally Accepted Accounting Principles ("**GAAP**") to the extent applicable to such Sales:

(a) trade, quantity and cash discounts or rebates, actually allowed or taken;

(b) allowances or credits given for rejection, recall or return of previously sold Licensed Product or outdated Licensed Product;

(c) rebates and chargebacks or retroactive price reductions made to federal, state or local governments (or their agencies), or any Third Party payor, administrator or contractor, including managed health organizations, to the extent specific to Licensed Product;

(d) payments required by law to be made under special medical assistance programs (including, but not limited to, payments made under Medicaid, Medicare or other government and other similar programs such as the new "Medicare Part D Coverage Gap Discount Program" and the "Annual Fee on Branded Pharmaceutical Manufacturers"), in each case to the extent specific to Licensed Product;

(e) amounts deemed to be uncollectible due to non-payment relating to Sales of Licensed Products during the applicable calculation period;

(f) any tax or other governmental charge (including without limitation custom surcharges) borne by and not reimbursed to the Licensee other than income tax levied on the Sale, transportation or delivery of Licensed Product; and

(g) any charges for packing, handling, freight, insurance, transportation and duty charges borne by the seller.

If Licensee makes any Net Sales to any Person at a price less than the regular price charged to other parties, and unless a cash discount within the meaning of this Section 1.71 applies, the royalties payable to Institute shall be computed on the basis of the regular price charged to other parties.

1.73 "**New CTL Products**" shall mean, for the purposes of this Agreement, pharmaceutical or biologic products comprising Autologous CTLs or Allogeneic CTLs Specifically Directed to Targets (including [*] associated with such Target or [*] with such Target) that are associated with any New Research Program that the Parties have agreed to include within the scope of this Agreement pursuant to Section 2.3 of the Research Agreement, including [*] the Target of such New Research Program. As of the Execution Date, New CTL Products shall include (i) HPV-Specific CTL Products and (ii) BKV-Specific CTL Products.

1.74 "**New Research Program**" shall have the meaning given in the Research Agreement.

1.75 "**New Research Patent Rights**" shall have the meaning given in Section 13.2(b).

1.76 "**New Research Program Inclusion Date**" shall have the meaning given in Section 13.2(b).

1.77 "**Option**" shall have the meaning given in Section 2.2(a).

1.78 "**Option Notice**" shall have the meaning given in Section 2.2(b).

1.79 "**Original Effective Date**" shall have the meaning given in the Recitals.

1.80 "**Original License Agreement**" shall have the meaning given in the Recitals.

1.81 "**Orphan Drug Exclusivity**" means in a particular country with respect to a Licensed Product, protection available under any Applicable Law relating to treatments for rare or neglected diseases or conditions, or otherwise requiring special incentives, that prevents or delays (notwithstanding any exceptions or provisos, save to the extent that such exceptions or provisos may be applied in the particular case) the approval, production, marketing or sale of a competitive product by a Third Party, where such Third Party has not obtained the rights to market or sell such product as a licensee, sublicensee or distributor of Licensee or any of its Affiliates, licensees or Sublicensees with respect to such product.

1.82 "**Participant**" means any one or more of:

(a) [* .]

1.83 "**Patent Rights**" means (a) any and all patents and patent applications Controlled by Institute as of the Execution Date (including all such patents and patent applications Controlled by Institute as of the Original Effective Date) that cover or claim CTL Technology and have arisen directly from activities conducted by or under the supervision of [*], including the patents and patent applications listed on Schedule 1.83, excluding any patents and patent applications included in subsection (b), (b) any and all patents or patent applications Controlled by Institute that cover or claim inventions created, discovered, conceived, developed or reduced to practice in the course of activities conducted pursuant to the Research Agreement, and (c) any and all patents and patent applications Controlled by Institute during the Term that have arisen directly from activities conducted by or under the supervision of [*] to the extent that such patents and patent applications cover or claim [*]. For clarity, Patent Rights include the following forms of intellectual property rights anywhere in the world that fall within (a), (b) and (c): issued patents, continuations, continuations-in-part, divisionals, substitutions, confirmations, reissues, re-examination, validations, extensions, renewals, restorations or any similar governmental grant for protection of inventions; (ii) pending applications for any of the foregoing (including both provisional and non-provisional applications); and (iii) all patents and patent applications claiming

priority directly or indirectly to any of the foregoing, or from which any of the foregoing claim direct or indirect priority.

1.84 "**Person**" means any natural person, corporation, firm, business trust, joint venture, association, organization, company, partnership or other business entity, or any government or agency or political subdivision thereof.

1.85 "**Phase I Clinical Trial**" means any clinical study conducted on sufficient numbers of human subjects to establish that a pharmaceutical or biological product is reasonably safe for continued testing and to support its continued testing in Phase II Clinical Trials. "Phase I Clinical Trial" shall include without limitation any clinical trial that would satisfy requirements of 21 C.F.R. § 312.21(a).

1.86 "**Phase II Clinical Trial**" means any clinical study conducted on sufficient numbers of human subjects that have the targeted disease of interest to investigate the safety and efficacy of a pharmaceutical or biological product for its intended use and to define warnings, precautions, and adverse reactions that may be associated with such product in the dosage range to be prescribed. "Phase II Clinical Trial" shall include without limitation any clinical trial that would satisfy requirements of 21 C.F.R. § 312.21(b).

1.87 "**Phase III Clinical Trial**" means any clinical study intended as a pivotal study for purposes of seeking Regulatory Approval that is conducted on sufficient numbers of human subjects to establish that a pharmaceutical or biological product is safe and efficacious for its intended use, to define warnings, precautions, and adverse reactions that are associated with such product in the dosage range to be prescribed, and to support Regulatory Approval of such product or label expansion of such product. "Phase III Clinical Trial" shall include without limitation any clinical trial that would or does satisfy requirements of 21 C.F.R. § 312.21(c), whether or not it is designated a Phase III Clinical Trial.

1.88 "**Polyepitope CTL Product**" means any pharmaceutical or biologic product comprising an Autologous CTL or an Allogeneic CTL, in either case, that is Specifically Directed to at least two Targets.

1.89 "**Program [*]**" means any [*] developed in the course of the [*] Program and/or the [*] Program, in respect of which Licensee has [*].

1.90 "**Regulatory Approval**" means with respect to a country or region, any and all approvals, licenses, registrations or authorizations of any Regulatory Authority necessary to commercially distribute, sell or market a Licensed Product in such country or region, including, where applicable: (a)

pre- and post-approval marketing authorizations; (b) labeling approval; and (c) technical, medical and scientific licenses, in each case necessary for commercial distribution, sale or marketing of such Licensed Product in such country or region.

1.91 "**Regulatory Authority**" means any Government Authority or other entity, in each case regulating or otherwise exercising authority with respect to the development, manufacturing or commercialization of the Licensed Product in a given country or region, including the U.S. Food and Drug Administration ("**FDA**"), or any successor thereto, and the European Medicines Agency ("**EMA**"), or any successor thereto.

1.92 "**Research Agreement**" means the Amended and Restated Research and Development Collaboration Agreement of even date herewith by and between Institute and Licensee.

1.93 "**Research Agreement Patent Rights**" shall have the meaning given in Section 13.2(b).

1.94 "**Research Milestone Payments**" shall have the meaning given in the Research Agreement.

1.95 "**Reversion Product IP**" shall have the meaning given in Section 9.6(b).

1.96 "**Reversion Products**" shall have the meaning given in Section 9.6(b).

1.97 "**Royalty Term**" shall have the meaning given in Section 4.8(a).

1.98 "**Rules of Arbitration**" shall have the meaning given in Section 20.2.

1.99 "**Sale**" means the act of selling, leasing or otherwise transferring, providing, or furnishing for use any Licensed Product for any consideration. Correspondingly, "Sell" means to make or cause to be made a Sale, and "Sold" means to have made or caused to be made a Sale. For clarity, a Sale excludes any Licensed Product supplied at cost: (a) for use in clinical trials; (b) for research or for other non-commercial uses; or (c) as part of a compassionate use program (or similar program for providing Product before it has received marketing approval in a given country).

1.100 "**Specifically Directed**" means, with respect to a Target, the ability of a molecule, agent, or compound to selectively or preferentially bind to or interact with such Target (other than by non-specific binding}.

1.101 "**Sublicensee**" means any person or entity (including any Affiliate of Licensee) to which any of the license rights granted to the Licensee hereunder are granted a sublicense or an option to a sublicense.

1.102 "**Target**" means an antigen expressed on or in a cell, including[*]. For clarity, a Target may be [*] (collectively, a single "Target"). Unless otherwise specified, where the antigen is naturally occurring, a Target [*]. For clarity, (a) where a Licensed Product is [*] antigen expressed on or in a cell in association with[*] EBV and/or CMV and/or the virus associated with the Target of any New CTL Product and/or Program Vaccine, [*], and (b) where a Licensed Product is[*] associated with a [*] on or in a cell in association with the presence of, or infection of such cell by, EBV and/or CMV and/or the virus associated with the Target of any New CTL Product and/or Program [*], or [*] EBV and/or CMV and/or the virus associated with the Target of any New CTL Product and/or Program [*], [*].

1.103 "**Term**" shall have the meaning given in Section 9.1.

1.104 "**Territory**" means worldwide.

1.105 "**Third Party**" means any Person other than Institute, Licensee or any of their respective Affiliates.

1.106 "**Third Party License**" shall have the meaning given in Section 4.7.

1.107 "**Third Party Product**" shall have the meaning given in Section 7.2.

1.108 "**Third Party Royalty Payments**" shall have the meaning given in Section 4.7.

1.109 "**[*]**" shall have the meaning given in Section 4.4.

1.110 "**[*]**" means [*].

1.111 "**[*] Date**" shall have the meaning given in Section 5.2.

1.112 "**[*]**" shall have the meaning given in Section 2.6(a).

1.113 "**[*] Notice**" shall have the meaning given in Section 2.6(e).

1.114 "**[*] Period**" shall have the meaning given in Section 2.6(a).

1.115 "**[*] Program [*] Account**" shall have the meaning given in Section 2.6(c).

1.116 "**Valid Claim**" means any (a) claim in an issued and unexpired patent included in the Patent Rights that has not been disclaimed, abandoned or withdrawn and has not been held unenforceable or invalid by a final judgment of a court or other governmental agency of competent jurisdiction from which no appeal can be or is taken, and has not been admitted to be invalid or unenforceable through reissue or disclaimer or otherwise; (b) claim in a pending patent application included within the Patent

Rights that has been filed in good faith and has not been abandoned or finally disallowed without the possibility of appeal or refiling, which application has been pending for less than [*] years after its priority date; or (c) claim in a pending patent application included within the Patent Rights, which application has been pending for more than [*] years after its priority date and which later becomes a claim in an issued and unexpired patent included in the Patent Rights as described in subsection (a), provided that for clarity, such claim shall be a Valid Claim only during the time period during which it otherwise falls within subsections (a) or (b).

1.117 "[*] **License**" shall have the meaning given in Section 4.4.

1.118 "[*]" shall have the meaning given in Section 4.4.

2. **GRANT**

2.1 **License Grant**. Subject to the limitations and other terms and conditions set forth in this Agreement including those reserved by Institute in Section 2.5(a), Institute hereby grants to Licensee an exclusive, royalty-bearing, sublicenseable (in accordance with Article 3) license in, to and under (a) the Patent Rights and the Know-How Rights, and (b) Institute's interest in any patents and patent applications owned jointly by Licensee and Institute, to make, use, Sell, offer for Sale and import Licensed Products, and to practice Licensed Methods, in each case with respect to (i) Allogeneic CTL Products in the Territory in the Licensed Field, (ii) solely with respect to HPV-Specific CTL Products and BKV-Specific CTL Products, Autologous CTL Products in the Licensed Field, and (iii) solely following [*], and on an [*] arising from the [*].

2.2 **Autologous CTL Option.**

(a) Institute hereby grants to Licensee the following exclusive options (each, an "**Option**"):

(1) to obtain an exclusive, royalty-bearing, sublicenseable (in accordance with Article 3) license in, to and under the Patent Rights and the Know-How Rights to make, use, Sell, offer for Sale and import Licensed Products, and to practice Licensed Methods, in each case with respect to Autologous CTL Products that are Specifically Directed to one or more Targets associated with EBV, including any [*] EBV or [*] with EBV (such products, "**EBV-Specific Autologous Products**"), in the Territory in the Licensed Field (such Option, the "**EBV Autologous Option**"); and .

(2) to obtain an exclusive, royalty-bearing, sublicenseable (in accordance with Article 3) license in, to and under the Patent Rights and the Know-How Rights to make, use, Sell,

offer for Sale and import Licensed Products, and to practice Licensed Methods, in each case with respect to Autologous CTL Products that are Specifically Directed to one or more Targets associated with CMV, including [*] with EBV or [*] with CMV (such products, "**CMV-Specific Autologous Products**"), in the Territory in the Licensed Field (such Option, the "[***] Option**").

(b) Subject to subsection (c), Licensee shall have a right to exercise either the EBV Autologous Option or the [*] Option, or both the EBV Autologous Option and the [*] Option, on written notice to Institute (the "**Option Notice**") at any time prior to (i) in the case of the EBV Autologous Option, provided Licensee is [*] the development (with a view to commercialization) of at least one EBV-Specific CTL Product comprising Allogeneic CTLs, the later of (A) [*] the date [*] and (B) [*] following the Original Effective Date, and (ii) in the case of the [*] Option, provided Licensee is [*]the development (with a view to commercialization) of at least one CMV-Specific CTL Product comprising Allogeneic CTLs, the later of (A) [*] the date [*], or (B) [*] following the Original Effective Date.

(c) Notwithstanding subsection (b), in the event that (i) there is a material failure by Institute to perform its obligations in accordance with (A) the Research Agreement and the Development Plan (including any timelines set forth therein), or (B) any Manufacturing Agreement entered into by the Parties, or (ii) the FDA or any applicable Regulatory Authority requires additional development activities to be conducted with respect to Licensed Products, including (1) any additional clinical trials, or material amendments to existing clinical trials (including the [*], as applicable), or (2) changes to manufacturing process or activities, in order to obtain Regulatory Approval for a Licensed Product, then the time period set forth in subsection (b) for the exercise of the EBV Autologous Option, or the [*] Option, as applicable, shall be [*].

(d) On an Option-by-Option basis, Licensee shall pay the Option Fee to Institute pursuant to Section 4.2 and, upon receipt by Institute of such an Option Fee with respect to an Option, the license rights to be granted by Institute to Licensee as described in Section 2.2(a)(1) and/or Section 2.2(a)(2), as applicable, shall be fully effective, without further action either by Institute or by Licensee.

2.3 **Reversion of Certain Rights**. On a Target-by-Target basis, Major Market-by-Major Market basis, and Indication-by-Indication basis, if, following Licensee's exercise of the Option, Licensee (a) ceases or determines that it will not pursue development or commercialization of an Allogeneic CTL Product for use in a given Indication under this Agreement or the Research Agreement, and (b) ceases

or determines that it does not wish to pursue the development and commercialization of an Autologous CTL Product for use in such Indication, Section 7.3 shall apply.

2.4 **[*] Technology**.

(a) Subject to the terms and conditions of this Agreement, and the Research Agreement, during the Term, Licensee shall have an [*] under any intellectual property rights (i) Controlled by Institute or any Affiliate of Institute not included in the Patent Rights or the Know-How Rights, (ii) [*], (iii) that [*] or to [*], and (iv) that either Party [*] for the Parties' activities under this Agreement or the Research Agreement (the "[***] Technology**"). For clarity, this Section 2.4 shall not apply to any [*] Technology that relates solely to [*], or to [*], which shall be subject to Section 2.6 during the [*] Period, provided that if the [*] Period expires without Licensee exercising the [*], for one or more of the Institute [*] Programs, this Section 2.4(a) shall continue to apply, but Institute shall have no obligation under this Section 2.4 with respect to any such [*] Technology that relates solely to [*], as applicable, arising from the Institute [*] Program(s) for which the [*] was not exercised.

(b) With respect to any [*] Technology, Institute shall provide Licensee, prior to any discussion with any Third Party, with (i) detailed information regarding such [*] Technology, including such additional information as is reasonably requested by Licensee regarding any such [*] Technology in order to enable Licensee to appropriately evaluate such [*] Technology, and (ii) a [*] arising from the use of such [*] Technology in the Territory. Licensee shall have a period of [*] following receipt of [*] to notify Institute whether Licensee wishes to exercise [*], and the Parties shall thereafter [*] to Licensee. If the Parties agree upon the [*] in such period, they shall thereafter proceed to an [*] for such a grant of rights to be mutually agreed by the Parties. In the event that the Parties have not agreed upon the [*] pursuant to which the Parties would [*] in the Territory within such [*] period after the initiation of good faith discussions, Institute shall be free to discuss terms and conditions for the grant of rights, to develop and commercialize such CTL Products and/or New CTL Products in the Territory to any Third Party. Notwithstanding the foregoing, during [*] following the [*], Institute may [*] such a grant of rights with a Third Party, provided that Institute shall [*] Licensee during *] (unless the Parties mutually agree to [*]), and provided further that [*], no [*] in the Territory shall be [*] such Third Party than [*] Licensee.

2.5 **Reservation of Rights.**

(a) Institute reserves and retains the right (and the exclusive rights granted to the Licensee in this Agreement shall be limited accordingly) to make, use and practice the Patent Rights and the Know-How

Rights (and to grant any of the foregoing rights to other educational and non-profit institutions solely by way of a grant of rights pursuant to an academic collaboration agreement containing provisions substantially equivalent to those set forth in Schedule 2.5) entered into solely for educational and research purposes, including publication and other communication of any research results, but excluding any sponsored research performed for or on behalf of commercial entities, provided that any such rights granted under such academic collaboration agreements shall be subject to Sections 2.1, 2.4 and 11.2. Subject to the terms and conditions of this Agreement, Institute shall also retain all rights in and to the Patent Rights and the Know How Rights for (i) all applications that do not directly relate to, or use or incorporate, CTLs, (ii) all uses or applications of CTLs for any Indication that is not associated with EBV and/or CMV and/or the Target associated with any New CTL Product and is not the subject of any activities being carried out under the Research Agreement, (iii) uses or applications of CTLs for use in any Indication for which an EBV-Specific CTL Product, a CMV-Specific CTL Product or a New CTL Product is being developed and/or commercialized pursuant to this Agreement or the Research Agreement, solely where such use or application of CTLs is in a patient or patients (A) that have been determined [*] (as applicable), and (B) that do not [*] associated with any [*] and/or the [*] associated with any [*] such uses or applications of CTLs, and (iv) [*], excluding any [*] included in an [*] Program, which shall be subject to Section 2.6, or any [*] that is also directed to the Target of any New Research Program.

(b) The Parties acknowledge and agree that Licensee retains the right to continue all development and commercialization activities under the MSK Agreement, including any development and commercialization of products that would be Competing Products, and Licensee's development and commercialization of products under the MSK Agreement shall not be a breach of Article 7.

(c) The Licensee acknowledges that the Institute has notified Licensee that Institute has, prior to the Original Effective Date, granted to each of the Participants an identical perpetual, irrevocable, non-exclusive royalty free license under the Patent Rights and related Know How but excluding [*], in each case solely for internal research purposes, with a right to sublicense solely for internal research purposes with Institute's prior written consent, on terms to be agreed between the Institute and Participant, provided that Institute is not permitted to unreasonably withhold its consent to such a sublicense. Institute agrees that it will (i) provide Licensee with prompt written notice of any request by a Participant prior to any grant of such a sublicense, (ii) use its best efforts to ensure any such sublicense complies with Section

2.5(a), and (iii) at Licensee's request, provide Licensee with a copy of any such sublicense, which may be redacted to the extent not necessary to demonstrate compliance with Section 2.5(a).

2.6 **[*] Programs.**

(a) Institute has been pursuing as of the Execution Date, and proposes to continue to pursue during the Term, certain programs of research and development relating to the [*] (the "[***] Program**") and/or the [*] (the "[***] Program**" and collectively the "[***] Programs**"). Subject to the remainder of this Section 2.6, Institute hereby grants to Licensee an [*] for each of the [*] Program (each, a "[***]**"), [*] Program-by-[*] Program basis at any time prior to the earlier of (i) the [*] arising out of such applicable [*] Program, and (ii) the decision by Institute to [*] (each, a "[***] Period**"), to include [*], as applicable, arising from the [*] Programs as Licensed Products pursuant to this Agreement. Licensee may [*] separately for each of the [*], or together for both the [*] Programs, provided that the [*] by Licensee for one [*] Program shall not obligate Licensee to [*] for the other [*] Program. For the purposes of determining the duration of each [*] Period, [*] shall mean the [*].

(b) In order to retain the right to [*] during the [*] Period, Licensee shall [*] commencing on the Execution Date and during the remainder of the [*] Period in the form of the [*] Contribution, in accordance with a mutually agreed development plan and budget, as set forth in Section 2.6(e) and (f) of the Research Agreement. Licensee may terminate either or both of the [*] at any time during the [*] Period by [*] written notice to Institute specifying the [*] Program for which it is terminating the [*]. Following notice of termination of one or more [*], Licensee shall remain responsible for [*] for activities that are [*] for the [*] for which the [*] has been terminated during such termination notice period, provided that [*] by Institute during the termination notice period. Licensee shall also be responsible for [*] associated with the termination of the [*], if any. For clarity, any failure by Licensee to pay any [*] Contribution (unless disputed in good faith by Licensee) within the timeframe set forth in Section 2.6(d) shall [*] and upon written notice from Institute to Licensee shall [*] for the [*] Program for which such undisputed payment amount is not made to Institute.

(c) The [*] Contribution shall be payable by Licensee as follows: (i) no later than [*] during the [*] Period, Institute will present to Licensee an [*] that Institute [*] during that [*] (the "[***] Program [*] Account**"); (ii) provided that the amount of the [*] Program [*] Account does not exceed [*] of the amounts set forth in the applicable [*] Budget, Licensee shall, on an [*] Program basis, pay the amounts set forth in the [*] Program [*] Account within [*] of receipt of each such account. Any amounts paid towards the [*] Programs [*] Contribution shall be [*] made or payable

by Licensee under this Agreement, provided that any [*] set forth in a [*] Programs [*] Account will be [*] Programs [*] Accounts against [*] incurred by Institute in conducting the [*] Programs.

(d) If Licensee fails to make a payment of any undisputed amount included within a [*] Programs [*] Account within thirty (30) days following the due date Licensee's right to exercise the [*] with respect to the applicable [*] Program (to which the missing payment relates) shall terminate. Licensee may dispute any amount charged in good faith by written notice to Institute, and the Parties shall promptly meet following any such notice to discuss and resolve any such dispute in good faith.

(e) On an [*] Program basis, Licensee may exercise the [*] by giving written notice to Institute at any time during the [*] Period (the "[*] **Notice**") and paying the applicable [*] Fee in accordance with Section 4.2(b). Upon receipt of the [*] Notice and the applicable [*] Fee, [*], as applicable, arising from the [*] Program for which the [*] has been exercised will be included as Licensed Products pursuant to this Agreement, and such [*] Program(s) shall thereafter be subject to the terms and conditions of this Agreement, including the milestone payments due under Section 4.3, and the royalty obligations set forth in Section 4.6 set forth in [*] that are applicable to Licensed Products arising from [*].

(f) If Licensee does not exercise a [*] for either the [*] Program and/or the [*] Program during the [*] Period, or if one or more of the [*] are terminated by Licensee pursuant to Section 2.6(b), then subject to the rights granted to Licensee under this Agreement, including the licenses granted in Section 2.1, and to subsection (g) below, all rights of Licensee under the [*] Program(s) for which a [*] has not been exercised (or for which a [*] has been terminated, as applicable) shall terminate, and Institute shall thereafter have no further obligations to Licensee with respect to the applicable [*] Program(s).

(g) Notwithstanding subsection (f), following either (i) the expiration of the [*] Period without exercise of the [*] by Licensee for either the [*] Program, or (ii) termination by Licensee of the [*] for the [*] Program, as set forth below, if Institute grants rights to any Third Party to develop or commercialize any product (including any [*]) arising from the [* Program, Institute shall [*] under any agreement for the grant of such rights, until [*] with respect to the [*] Program for which rights have been granted to such Third Party. For clarity, Licensee may terminate the [*] by (A) the giving of [*] written notice to Institute in accordance with Section 2.6(b), or (B) written notice in the event of (1) any issue relating to the safety or efficacy of the [*], as applicable, or (2) a [*] applicable to the development and commercialization of the [*], as applicable, or (3) the [*], as applicable, whether by [*] or otherwise in each case of [*] that in Licensee's reasonable opinion [*] under the applicable [*] Program(s).

(h) For the purposes of this Section 2.6, "[*] **Development Costs**" shall mean the [*] costs incurred [*] by Institute in conducting the [*] Programs, provided that (i) [*] Development Costs shall also include [*] Programs) associated with the [*] Programs, which shall be mutually agree by the Parties and set forth in the [*] Budget, and (ii) [*] set forth in the Research Agreement.

2.7 **No Other Rights**. Each Party acknowledges that the rights and licenses granted in this Agreement are limited to the scope expressly granted. Accordingly, except for the rights expressly granted under this Agreement, no right, title, or interest of any nature whatsoever is granted whether by implication, estoppel, reliance, or otherwise, by either Party to the other Party. All rights with respect to any know-how, patent or other intellectual property rights that are not specifically granted herein are reserved to the owner thereof.

3. **SUBLICENSES**

3.1 **Permitted Sublicensing.** Institute grants to the Licensee the right to sublicense, in whole or in part, as follows: (a) Licensee shall have the right to sublicense the Patent Rights and the Know-How Rights within the Territory in the Licensed Field solely to Licensee's Affiliates and subcontractors performing work on behalf of Licensee; and (b) Licensee shall have the right to sublicense the right to make, use, sell, offer for sale and import Licensed Products within the Territory in the Licensed Field through multiple tiers. The term Sublicense shall include any grant of rights under this Agreement by a Sublicensee to any downstream Third Party, such downstream Third Party shall also be considered a Sublicensee for purposes of this Agreement.

3.2 **Sublicense Requirements.** The Licensee shall (a) provide Institute with a copy of each sublicense issued within thirty (30) days after the execution of such sublicense; (b) collect payment of all payments due to Institute from Sublicensees through Licensee arising from Sales of Licensed Products; and (c) summarize and deliver all reports due Institute from Sublicensees through Licensee.

3.3 **Sublicense Terms**. Each Sublicensee must be subject to a written sublicense agreement containing all terms of the sublicense, which shall include at least the following terms and conditions:

(a) record keeping, audit and reporting obligations substantially equivalent to those set forth in Sections 8.1 and 8.2 of this Agreement, sufficient to enable Licensee and Institute to reasonably verify the payments due to Licensee and Institute under such Sublicense and to reasonably monitor such Sublicensee's progress in developing and/or commercializing Licensed Product, including the right for

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Institute (or its designee) to perform a direct audit of Sublicensee's books and records on terms no less stringent than those set forth in Section 8.2 of this Agreement;

(b) infringement and enforcement provisions that do not conflict with the restrictions and procedural requirements imposed on Licensee and do not provide greater rights to Sublicensee than as provided in Section 14;

(c) confidentiality provisions with respect to Confidential Information of Institute consistent with the restrictions on Licensee in Article 22 of this Agreement;

(d) a requirement of indemnification of Institute by Sublicensee that is equivalent to the indemnification of Institute by Licensee under Section 15.1 of this Agreement; and

(e) a requirement of obtaining and maintaining insurance by Sublicensee that is equivalent to the insurance requirements of Licensee under Section 15.2 of this Agreement.

Any Sublicense that does not include all of the terms and conditions set forth in this Section 3.3 or which is not issued in accordance with the terms and conditions set forth in this Article 3, shall be considered null and void with no further notice from Institute.

3.4 **Effect of License Termination.** Upon termination of this Agreement for any reason, all sublicenses that are granted by Licensee pursuant to this Agreement will remain in effect and will be assigned to Institute, provided that the Sublicensee is in compliance with its sublicense agreement as of the date of such termination, and except that Institute will not be bound to perform any duties or obligations set forth in any sublicenses that extend beyond the duties and obligations of Institute set forth in this Agreement. Institute will have the sole right to modify each such assigned sublicense to include all of the rights of Institute that are contained in this Agreement.

4. FINANCIAL PROVISIONS

4.1 **Issue Fee**.

(a) As initial payment for the rights received under this Agreement with respect to CTL Products, Licensee paid to Institute a fixed fee of three million dollars ($3,000,000) (the "**Issue Fee**") within fifteen (15) business days following the Original Effective Date. The Issue Fee is non-refundable and non-creditable against any other amounts, including but not limited to, Earned Royalties due to Institute by Licensee. The Issue Fee is in no way contingent on use or productivity of Patent Rights and Know-How Rights provided by Institute.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

(b) As initial payment for the rights received under this Agreement with respect to BKV-Specific CTL Products, Licensee will pay to Institute a fixed fee of [*] (the "**BKV Issue Fee**") within fifteen (15) business days following the Execution Date. The BKV Issue Fee is non-refundable and non-creditable against any other amounts, including but not limited to, Earned Royalties due to Institute by Licensee. The BKV Issue Fee is in no way contingent on use or productivity of Patent Rights and Know-How Rights provided by Institute.

4.2 **Option Fees**.

(a) On an Option-by-Option basis, within ten (10) days following Licensee's delivery of an Option Notice for each of the EBV Autologous Option, and the [*] Option, Licensee shall pay to Institute a fee of [*] (the "**Option Fee**"). Each Option Fee is non-refundable and non-creditable against any other amounts once paid and is not in any way contingent on use or productivity of the underlying technology and know-how related to the EBV Autologous Option or [*] Option.

(b) On a [*] basis, within ten (10) days following Licensee's delivery of a [*] Notice for each of the [*], Licensee shall pay to Institute a fee of [*] ([*] "[*] **Fee**"). [*] Fee is non-refundable and non-creditable against any other amounts once paid and is not in any way contingent on use or productivity of the underlying technology and know-how related to the applicable [*] Program.

4.3 **Milestone Payments**.

(a) As additional consideration for Institute entering into this Agreement and the Research Agreement, Licensee will pay to Institute the milestone payments (each, a "**Milestone Payment**") set forth in the table below for each Allogeneic Licensed Product and/or Autologous Licensed Product (as applicable pursuant to the table set forth below) to achieve the corresponding milestone (each, a "**Milestone**"), whether achieved by Licensee or an Affiliate or Sublicensee. Licensee shall promptly notify Institute in writing of the achievement of any such Milestone and Licensee shall pay Institute in full the corresponding Milestone Payment within [*] of such achievement. For clarity, each Milestone Payment is payable once only for each Allogeneic CTL Product and once for each Autologous CTL Product, and each Milestone Payment is non-refundable, and is not an advance against royalties due to Institute or any other amounts due to Institute.

Milestone Trigger Event		Milestone Payment				
		Licensed Product Specifically Directed to [*]	**Licensed Product Specifically Directed to [*]**	**Licensed Product Arising [*] Activities under Research Agreement**	**[*]**	**[*]**
1	First calendar year in which worldwide annual Net Sales of Product [*]	[*]	[*]	[*]	[*]	[*]
2	First calendar year in which annual Net Sales of Product [*]	[*]	[*]	[*]	[*]	[*]
3	First calendar year in which annual Net Sales of Product [*]	[*]	[*]	[*]	[*]	[*]

(b) Unless a Milestone Payment is specified as payable for more than one Indication in the table above, each Milestone Payment will be payable by Licensee only once, following the first time a given Licensed Product achieves the specified Milestone, for each Allogeneic CTL Product and each Autologous CTL Product to achieve such Milestone.

(c) Each time a Milestone is achieved, then any other Milestone Payments with respect to earlier Milestones that have not yet been paid will be due and payable together with the Milestone Payment for the Milestone that is actually achieved.

(d) If Licensee exercises the Option, and with respect to a given Licensed Product and a given Indication, elects to progress the development and commercialization of an Autologous CTL Product in lieu of an Allogeneic CTL Product for such Indication, then (i) following the decision to progress development and commercialization of such Autologous CTL Product, Licensee shall owe all subsequent Milestone Payments due for such Autologous CTL Product, and (ii) subsection (c) shall apply solely with respect to any Milestone Payments that are applicable to both Autologous CTL Products and Allogeneic CTL Products, and have not already been paid for the Allogeneic CTL Product.

4.4 **Milestone Offset**. If Licensee reasonably believes, on the advice of legal counsel, that it is necessary to obtain a license (or a sublicense) from any Third Party under (a) the patents or patent applications owned or otherwise controlled by [*] set forth on Schedule 4.4 (the "[***] License**"), (b) any patents or patent applications owned or otherwise controlled by a Third Party that [*], including without limitation [*], including without limitation any such patents or patent applications owned or

otherwise controlled by [*] (the "[***] License**"), and/or (c) any patents or patent applications having a priority date [*] owned or otherwise controlled by any [*] in order to develop, make, have made, use, Sell, offer for Sale or import any Licensed Product (such licenses, each an "**Additional License**"), and pursuant to such Additional License is required to pay any consideration [*] to such Additional Party for development and commercialization of such Licensed Product ("**Additional License Payments**"), then Licensee may offset [*] paid to such Additional Party against [*] payable to Institute under this Agreement or [*] payable to Institute under [*] under this Agreement in relation to such Licensed Product or [*] in relation to such Licensed Product after the effective date of such Additional License, [*], provided that Licensee may not offset any Additional License Payments due under [*] in excess of an aggregate amount of [*] for all Licensed Products in aggregate (the "[***]**"), nor any Additional License Payments due under the [*] for all Licensed Products in aggregate (the "**[*]**") and provided further that Licensee may [*] due to Institute under this Agreement and the Research Agreement. For clarity, Licensee's right to offset Additional License Payments under any Additional License falling within (c) shall be subject to [*]. Notwithstanding the foregoing, in no event shall the offset of Additional License Payments exceed [*], as applicable, and [*] due to Institute under this Agreement and the Research Agreement. Any Additional License Payments [*] in excess of such [*] may be [*] by Licensee and [*], provided that no offset may be taken by Licensee against [*] the effective date of such Additional License. Further, any offset relating to [*] applicable to [*] pursuant to this Section 4.4 shall be [*] if, at the time the [*] under this Agreement or the milestone event is achieved under the Research Agreement, Licensee or its Affiliates are engaged in the development or commercialization of [*], and such [*] is licensed under [*].

4.5 **Royalties.** Subject to Section 4.4, Earned Royalties will accrue on a Licensed Product-by-Licensed Product basis and country-by-country basis, for the duration of the Royalty Term and will be payable to Institute when Licensed Products are invoiced, or if not invoiced, when delivered or otherwise exploited by the Licensee, its Affiliate or Sublicensee in a manner constituting a Sale.

4.6 **Earned Royalty.** As further consideration for the rights granted under this Agreement and activities agreed under this Agreement and the Research Agreement, Licensee will pay to Institute the following earned non-refundable, non-creditable royalty on Net Sales of Licensed Products ("**Earned Royalty**"):

Aggregate Annual Net Sales	**Royalty Percent**			
	[*] CTL Products and [*] CTL Products	**Licensed Products Arising [*] under the Research Agreement**	**Licensed Product that is a [*]**	**Licensed Product that is a [*]**
Portion less than [*]	[*]	[*]	[*]	[*]
Portion greater than or equal to [*]	[*]	[*]	[*]	[*]

Notwithstanding the foregoing, for any Licensed Product that is a Diagnostic Product, the Earned Royalty shall be [*] of the royalty rates set forth in the table above.

4.7 **Royalty Offset**. If Licensee [*], that it is necessary to obtain a license under patents or patent applications Controlled by a Third Party (a "**Third Party License**") in order to develop, make, have made, use, Sell, offer for Sale or import any Licensed Product, and pursuant to such Third Party License is required to pay royalties to such Third Party ("**Third Party Royalty Payments**"), then Licensee may deduct [*] paid to such Third Party against the Earned Royalty owed to Institute, up to a limit of [*] of the applicable Earned Royalty in any given calendar year. Any Third Party [*] Payments in excess of such [*] limit for a given calendar year [*].

4.8 **Royalty Term.**

(a) Subject to the remainder of this Section 4.8, the Earned Royalty will be payable, on a Licensed Product-by-Licensed Product basis, and on a country-by-country basis, from the date of First Commercial Sale of such Licensed Product in such country until the last to occur of the following: (i) expiration or abandonment of the last Valid Claim of (A) any of the Patent Rights existing as of the Original Effective Date that cover or claim [*] such Licensed Product in such country, (B) any patent or patent application included in the Patent Rights following the Original Effective Date that arises as a result of the Parties' activities conducted pursuant to the Research Agreement, or (C) any [*]; (ii) cessation of any Data Exclusivity Protection or Orphan Drug Exclusivity applicable to such Licensed Product in such country;

or (iii) the tenth (10th) anniversary of the First Commercial Sale of such Licensed Product in such country (the "**Royalty Term**").

(b) Notwithstanding the foregoing, if in a country, (i) neither of the events set forth in Section 4.8(a)(i) and/or Section 4.8(a)(ii) have occurred in relation to such Licensed Product, (ii) one or more Comparable Third Party Products for such Licensed Product have been sold in such country for a period of [*], (iii) such Comparable Third Party Products do not infringe any Valid Claim of the [*], Licensee is [*], and (iii) following such [*] period, Net Sales during [*] Calendar Quarters in such country are [*] for the [*] Calendar Quarters, the Earned Royalty will be reduced thereafter to [*] of the amounts set forth in the table in Section 4.6 above (following any offsets applicable under Section 4.7). Furthermore, if in a country, at any time prior to the [*] anniversary of the First Commercial Sale of such Licensed Product, [*] set forth in Section 4.8(a)(i) and/or Section 4.8(a)(ii) have occurred in relation to such Licensed Product, the Earned Royalty will be reduced thereafter to [*] of the amounts set forth in the table in Section 4.6 above (following any offsets applicable under Section 4.7).

(c) Following the expiration of the Royalty Term, all licenses granted to Licensee hereunder shall become perpetual, exclusive and fully paid-up.

4.9 **Royalty Payment Schedule.** The Licensee will pay to Institute all Earned Royalties payable to Institute quarterly on or before February 28 (for the Calendar Quarter ending December 31), May 31 (for the Calendar Quarter ending March 31), August 31 (for the Calendar Quarter ending June 30) and November 30 (for the Calendar Quarter ending September 30) of each calendar year. Each payment will be for Earned Royalties accrued within the Licensee's most recently completed Calendar Quarter.

4.10 **Currency.** All consideration due Institute will be payable and will be made in United States dollars by wire transfer to an account designated by Institute. When Licensed Products are Sold for monies other than United States dollars, the Earned Royalties and other consideration will first be determined in the foreign currency of the country in which such Licensed Products were Sold and then converted into equivalent United States dollars. The exchange rate will be the average exchange rate quoted in *The Wall Street Journal* for the purchase of United States dollars during the last thirty (30) days of the reporting period.

4.11 **Royalty Reports.** Beginning with the First Commercial Sale of a Licensed Product, within [*] following the end of each Calendar Quarter, Licensee shall make quarterly royalty reports to Institute on or before each February 28, May 31, August 31 and November 30 of each year. Each royalty report will cover the Licensee's most recently completed Calendar Quarter and will show: (i) the amount

invoiced for Sales and Net Sales of Licensed Products that are Sold during the most recently completed calendar quarter; (ii) the [*] Licensed Product that is Sold on a country by country basis; (iii) the Earned Royalties, in U.S. dollars, payable with respect to Sales of Licensed Products; (iv) the [*] the Earned Royalty; (v) a [*] to calculate Net Sales; and (vi) the exchange rates used.

4.12 **Taxes.** Earned Royalties on Net Sales of Licensed Products and other consideration accrued in, any country outside the United States may be reduced by any taxes, fees or other charges imposed by the government of such country, including those taxes, fees and charges allowed under the provisions of Section 1.71.

4.13 **Late Payments.** If Earned Royalties, fees, reimbursements for Patent Prosecution Costs or other monies owed to Institute are not received by Institute when due, the Licensee will pay to Institute interest at a rate of the lesser of: (a) [*], or any successor thereto, at 12:01 a.m. on the first day of each Calendar Quarter in which such payments are overdue or (b) the maximum rate permitted by Law. Such interest will be calculated from the date payment was due until actually received by Institute.

4.14 **Acknowledgement.** The Parties acknowledge that the payments required to be made by Licensee to Institute under this Agreement are in consideration of all rights granted to Licensee and obligations undertaken by Institute under this Agreement. Such granted rights include use of valuable Know-How Rights, and the right to participate in the JSC and the conduct of the Development Plan so as to discover or develop Licensed Products that may not be, or may cease to be, covered by (a) Patent Rights, (b) Data Exclusivity, or (c) Orphan Drug Exclusivity. Each Party expressly acknowledges that it is their intention that royalties and other consideration be paid in accordance with the terms of this Agreement, and during the periods set forth in this Agreement, notwithstanding that a Licensed Product may be royalty-bearing at a reduced rate pursuant to Section 4.8(b) in the absence of coverage by (i) Patent Rights, or after the expiration of such Patent Rights, or (ii) Data Exclusivity, or (iii) Orphan Drug Exclusivity.

5. DILIGENCE; REGULATORY ACTIVITIES

5.1 **General Diligence**. Licensee, following execution of this Agreement, will use Commercially Reasonable Efforts to proceed with the development, manufacture and Sale of Licensed Products [*] in the Territory. Without limiting the following, Licensee shall:

(a) [*];

(b) [*];

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

(c) [*]; and

(d) [*] within [*] after [*] needed to obtain [*];

provided that, if Licensee's failure to meet the applicable diligence obligation under Section 5.1(a) to Section 5.1(d) is the result of (i) Institute's failure to perform its obligations in accordance with (A) the Research Agreement and the Development Plan (including any timelines set forth therein), or (B) any Manufacturing Agreement entered into by the Parties, or (ii) additional development activities (including any changes to manufacturing process or activities) required by the FDA in order to obtain regulatory approval for a Licensed Product, then in each case the target timeframe to meet the diligence requirements set forth in Section 5.1(a) to Section 5.1(d), as applicable, shall be [*], to complete the required activities.

5.2 **Specific Diligence for [*] Programs**. Following exercise of the [*] for each of the [*], will use Commercially Reasonable Efforts to proceed with the development, manufacture and Sale of Licensed Products that are [*] in the [*] in the Territory. Within [*] for each of the [*] Programs, Licensee shall provide Institute with a reasonably detailed development plan for the further development of the [*], as applicable, through to Regulatory Approval (the "**Licensee [*] Development Plan**"). Following Licensee's delivery of the Licensee [*] Development Plan to Institute, the Parties shall discuss and mutually agree upon the date upon which Licensee will be required to [*] occurring after exercise of the [*] for the applicable [*] Program(s) (the "[*] **Date**"). The [*] Date, once mutually agreed by the Parties or determined pursuant to Article 20 as described below, shall constitute an additional diligence obligation for [*] arising from the applicable [*] Program(s) equivalent to the diligence obligations set forth in Section 5.1(a) through (c) for CTL Products arising from the Research Collaboration, and the Parties shall amend Section 5.1 to add such agreed diligence obligation. If the Parties are unable to agree on the [*] Date within [*] after Licensee's delivery of the Licensee [*] Development Plan to Institute, then such dispute shall first be escalated to the Executives for resolution in accordance with Section 20.1, and if not resolved within the time period set forth therein, each Party shall, within [*] days following the expiration of the time period for the Executive resolution under Section 20.1, [*] Date, and the [*] Date shall be [*].

5.3 **Governance**. The Parties' activities under this Agreement and the Research Agreement shall be overseen by the JSC, as further set forth in Article 3 of the Research Agreement. In the event that the Research Agreement is terminated or expires, the JSC will remain in place and continue to operate as set forth in the Research Agreement to the extent applicable to activities under this Agreement, including

with respect to each Party's final decision making authority as set forth in Section 3.3(f) of the Research Agreement. For the avoidance of doubt, the exercise of such authority by Licensee shall in no way define, affect or diminish the diligence obligations of Licensee hereunder.

5.4 **Progress Reports**. On a [*] basis, but in any event no later than June 1st and December 1st in each calendar year, as long as Licensee continues to develop and commercialize Licensed Products, Licensee will submit a written report to Institute covering the Licensee's (and any of its Affiliates' or Sublicensees') activities related to this Agreement, including any updates or amendments to the Development Plan and activities being conducted pursuant to the Research Agreement (each, a "**Progress Report**"). The report will include information reasonably sufficient to enable Institute to ascertain progress by Licensee toward meeting this Agreement's diligence requirements set forth in Section 5.1. Each report will describe, where relevant: (a) current schedule of anticipated events or milestones; (b) summary of work completed and in progress, including against the Development Plan, during such period; (c) summary of work in progress and progress toward commercialization of Licensed Products; (d) significant corporate transactions involving Licensed Products, including any Sublicenses granted. Licensee shall include in each Progress Report the date of First Commercial Sale of any Licensed Product in each country, as applicable.

5.5 **Regulatory Activities**

(a) Licensee shall be solely responsible, at Licensee's expense for filing, obtaining and maintaining all Regulatory Approvals required for the development and commercialization of Licensed Products anywhere in the Territory where Licensed Products are manufactured, used, Sold, offered for Sale or imported. Licensee will obtain all such Regulatory Approvals in its own name (or that of a Licensee Affiliate) and shall own all right, title and interest in and to such Regulatory Approvals, and all materials, data and information included therein and relating thereto. Notwithstanding the foregoing, and subject to the terms and conditions of the Research Agreement, Institute shall be responsible for obtaining any Regulatory Approvals required for any clinical trials conducted by Institute or any Affiliate under the Research Agreement, provided that Institute shall provide Licensee with copies of all such fillings and correspondence relating thereto, and Licensee shall have a right of reference to all data, materials and information contained in any such regulatory filings and Regulatory Approvals.

(b) Promptly following the exercise of the EBV Autologous Option or the [*] Option, as applicable, Institute shall transfer to Licensee all of the data and information Controlled by Institute and arising from (i) the activities under the Research Agreement, or (ii) activities conducted by or under the supervision of

[*] prior to the date of the exercise of the applicable Option, in each case that is necessary or useful for the development, manufacturing and commercialization of EBV-Specific Autologous Products (following the exercise of the EBV Autologous Option) or [*].

5.6 **Abandonment**. If Licensee decides to abandon, or does in fact abandon, on a Licensed Product by Licensed Product and Major Market-by-Major Market basis the development or commercialization of Licensed Products (including an [*], solely following the [*]), then Licensee shall forthwith notify Institute in writing and Institute shall have the right to terminate this Agreement, solely with respect to the Major Market(s) in which such abandonment has taken place, upon written notice to Licensee in relation to such Licensed Product(s) and Major Market(s). A suspension of a New Research Program or other activities related to the development or commercialization of a Licensed Product shall be deemed to be abandonment if Licensee does not have a good-faith intention to continue development and commercialization of such Licensed Product. Upon such termination, any such Licensed Products shall be deemed Reversion Products (as defined in Section 9.6(b)), and Section 9.7 shall apply. Promptly following such notice of termination, the Parties shall meet to discuss in good faith and agree upon the process for transitioning to Institute the rights to commercialize such Licensed Product in the applicable Major Markets, and to coordinate the ongoing development and commercialization of such product in such terminated Major Market, including the sharing of information, regulatory filings and data relating thereto.

6. MANUFACTURE AND SUPPLY

6.1 The Parties intend to enter into one or more agreements that will govern the terms of manufacture and supply of CTL Products and New CTL Products and Program [*], including specific [*] Products for clinical supply for use in development activities, including clinical trials to be conducted by each Party pursuant to the Development Plan and under the Research Agreement (each, a "**Manufacturing Agreement**"). As of the Execution Date, the Parties anticipate that any such Manufacturing Agreement shall incorporate commercially reasonable terms that are appropriate for a similarly situated manufacturing agreement, and shall include at least the following principles, as set forth below in Sections 6.1(a) through (d), and other material terms such as pricing, as the Parties shall mutually agree upon:

(a) Institute shall be responsible for the manufacture and supply of CTL Products and New CTL Products and Program [*] (including specified [*] Products) for clinical supply through to [*] (which may include, subject to mutual agreement of the Parties, [*]), itself or through an Affiliate or mutually-

agreed upon Third Party contract manufacturing organization ("**CMO**"). The costs applicable to such manufacturing activities will be set forth in the Development Plan under the Research Agreement.

(b) Institute's obligation to manufacture and supply as set forth in Section 6.1(a) shall be conditioned on (i) the manufacturing entity shall have all Regulatory Approvals required for manufacture of Licensed Products for clinical supply, and (ii) the manufacturing entity shall have appropriate production capacity (including the ability to scale up as required) for the applicable CTL Products and New CTL Products and Program [*] to meet the timelines and specifications provided by Licensee for Licensed Product for clinical development.

(c) The Parties shall discuss in good faith the arrangements for the manufacture and supply of Licensed Products for clinical development activities following completion of Phase I Clinical Trials and for commercialization of Licensed Products in the Territory, including the selection of an appropriate manufacturing entity, which may include without limitation, either Party or its Affiliates, or a mutually agreed Third Party CMO. If Licensee requests that Institute continue to perform manufacturing and supply activities for Licensed Products hereunder, then Institute shall, subject to negotiation and agreement on the terms of the Manufacturing Agreement, manufacture and supply such Licensed Products to Licensee, with the further terms of such manufacture and supply to be set forth in the Manufacturing Agreement.

(d) The Parties acknowledge and agree that for the purposes of facilitating the manufacture and supply of Licensed Products to support the Parties' activities under this Agreement and the Research Agreement, including for reasons related to regulatory requirements or cost-effectiveness and economies of scale of production, Licensee may elect, or it may be necessary for the Parties to transfer manufacturing and supply to a different Third Party CMO, or to a different facility. Each Party agrees that with respect to any transfer of manufacturing technology, it will provide reasonable assistance to the other Party, at such other Party's reasonable expense and subject to such arrangements as are necessary to protect confidential information and proprietary know-how, to effect such transfer in a timely fashion and without undue disruption to the manufacture and supply of the applicable Licensed Product(s).

7. CERTAIN COVENANTS

7.1 **General Rule**. Subject to Section 7.2, during the period beginning on the Original Effective Date and ending on the expiration or earlier termination of this Agreement, neither Party shall (directly or indirectly, and either with or without a bona fide collaborator) conduct outside the scope of this

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Agreement, or the Research Agreement, any programs that are intended to identify, optimize, develop or commercialize a Competing Product.

7.2 **Exception for Certain Third Party Products**. Notwithstanding Section 7.1, during the Term, Licensee may acquire or in-license from a Third Party (a) rights in technology (including rights in patents, patent application and/or know-how) that Licensee [*] to the Patent Rights and Know-How Rights licensed by Institute to Licensee hereunder and are necessary or useful for the development and commercialization of Licensed Products hereunder, and/or (b) rights to develop and commercialize a CTL Product or New CTL Product or Program [*] that [*] (a "**Third Party Product**") if Licensee [*] that such [*] by Licensee or Institute (including any such Third Party Product [*], including without limitation because such Third Party Product (a) [*] then under development, (b) in [*] then under development, and/or (c) in [*] then under development by Licensee. Licensee may negotiate the terms of such a Third Party license or other agreement at its sole discretion. Notwithstanding the foregoing, if Licensee acquires rights in such a Third Party Product, Licensee shall [*] the development and commercialization of such Third Party Product pursuant to [*], for the Term of this Agreement, provided that if such Third Party Product is [*], then [*] pursuant to the foregoing shall be [*] of the amounts that [*].

7.3 **Autologous CTL Programs**. Following Licensee's exercise of the Option, on an Indication-by-Indication basis, Licensee shall notify Institute in writing within [*] following Licensee's determination that Licensee (a) will not pursue development or commercialization of an Allogeneic CTL Product for use in a given Indication under this Agreement or the Research Agreement, and (b) does not wish to pursue the development and commercialization of an Autologous CTL Product for use in such Indication. Provided that such Indication is not the subject of an existing research and development Program under the Research Agreement, Institute shall have the right to develop and commercialize Autologous CTL Products for use in such Indication without such development and commercialization being a breach of this Article 7, and the license granted to Licensee pursuant to Section 2.2 with respect to Autologous CTL Products shall no longer apply to any Autologous CTL Product for use in such Indication. Without limiting the foregoing, the Parties shall discuss, at least annually through the JSC, whether Licensee intends to, or is continuing to pursue development or commercialization of an Allogeneic CTL Product for use in the Indications that are the subject of research and development activities pursuant to the Research Agreement. Licensee will provide such

information regarding its development and commercialization of such Allogeneic CTL Products as is required to reasonably inform Institute for the purposes of such discussions.

8. **BOOKS AND RECORDS**

8.1 **Accounting.** Licensee shall calculate all amounts, and perform other accounting procedures required, under this Agreement and applicable to it in accordance with GAAP. Licensee shall keep, and shall require each Sublicensee to keep, accurate books and records showing all Licensed Products manufactured, used, and/or Sold under the terms of this Agreement. Books and records must be preserved for at least five (5) years from the date of the Earned Royalty payment to which they pertain. Upon reasonable notice, key personnel, books and records will be made reasonably available and will be open to examination by representatives or agents of Institute during regular office hours to determine their accuracy and assess Licensee's and, if applicable, each Sublicensee's, compliance with the terms of this Agreement, provided that Licensee and any Sublicensees shall not have any obligation to provide access more than once in any given twelve (12) month period.

8.2 **Audits.** In addition to the right of Institute to examine the books and records and interview key personnel as provided in Section 8.1 above, Institute, at its own cost, through an independent auditor reasonably acceptable to Licensee and, if applicable, a Sublicensee (and who has executed an appropriate confidentiality agreement reasonably acceptable to Licensee and, if applicable, a Sublicensee that requires the auditor to keep any information learned by it confidential except as needed to report its audit conclusions to Institute), may inspect and audit the relevant records of Licensee or a Sublicensee pertaining to the calculation of any Milestones and Earned Royalties due to Institute under this Agreement. Licensee and, if applicable, a Sublicensee shall provide such auditors with access to the records during reasonable business hours. Such access need not be given to any such set of records more often than once each year or more than five (5) years after the date of any report to be audited. Institute shall provide Licensee with written notice of its election to inspect and audit the records related to the Earned Royalty due hereunder not less than thirty (30) days prior to the proposed date of review of Licensee's and, if applicable, a Sublicensee's records by Institute's auditors. Should the auditor find any underpayment of Milestones or Earned Royalties by Licensee, Licensee shall (a) promptly pay Institute the amount of such underpayment; (b) shall reimburse Institute for the cost of the audit, if such underpayment equals or exceeds the [*]; and (c) provide such auditors with an audit right exercisable within [*] after Institute receives the audit report. If the auditor finds overpayment by Licensee, then Licensee shall have the right to deduct the overpayment from any future royalties due to Institute by

Licensee or, if no such future royalties are payable, then Institute shall refund the overpayment to Licensee within[*] after Institute receives the audit report. Licensee may designate competitively sensitive information which such auditor may see and review but which it may not disclose to Institute; provided, however, that such designation shall not restrict the auditor's investigation or conclusions.

9. **TERM; TERMINATION**

9.1 **Term.** Unless otherwise terminated by operation of law, Section 9.2, or by acts of the parties in accordance with the terms of this Agreement, this Agreement will remain in effect from the Original Effective Date until the expiration of all payment obligations hereunder (the "**Term**").

9.2 **Bankruptcy.** This Agreement will automatically terminate without the obligation to provide sixty (60) days' notice as set forth in Section 9.3 or 9.4 upon the filing of a petition for relief under the United States Bankruptcy Code by or against the Licensee as a debtor or alleged debtor.

9.3 **Termination for Material Breach.** If a Party fails to perform or violates any material term of this Agreement, then the other Party may give written notice of breach to the breaching Party. If the breaching Party fails to repair the default within ninety (90) days after the date of receipt of such notice of breach, the other Party may terminate this Agreement by delivering a second written notice. If such second notice is sent to the breaching Party, this Agreement will automatically terminate on the date that such notice is received by the breaching Party.

9.4 **Termination for Convenience.** The Licensee has the right at any time to terminate this Agreement at will by providing written notice of termination to Institute, and paying to Institute a break fee equal to fifty percent (50%) of the amount of the next Milestone Payment that would be payable to Institute in respect of Licensee's then most advanced Licensed Product. Termination of this Agreement will be effective sixty (60) days from the date such termination notice is received by Institute. Institute does not have any right to terminate this Agreement for convenience.

9.5 **Termination if Patent Rights Challenged.** Institute has the right to terminate this Agreement by providing written notice of termination to Licensee, if Licensee or any of its Affiliates commence, pursue, encourage or support any administrative, judicial or other similar proceeding to challenge the validity, enforceability or scope of any rights under any Patent Rights, including without limitation by (a) filing a declaratory judgment action in which any such Patent Rights are alleged to be invalid or unenforceable; (b) citing prior art pursuant to 35 U.S.C. §301, filing a request for re-examination of any of such Patent Rights pursuant to 35 U.S.C. §302 and/or §311, or provoking or becoming a party to an

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interference with an application for any such Patent Rights pursuant to 35 U.S.C. §135; or (c) filing or commencing any re-examination, opposition, cancellation, nullity or similar proceedings against any such Patent Rights in any country.

9.6 **Effects of Termination or Expiration.** The termination or expiration of this Agreement will not relieve the Licensee of its obligation to pay any fees, royalties or other payments owed to Institute at the effective date of such termination or expiration and will not impair any accrued right of Institute, including the right to receive Earned Royalties in accordance with Article 4. Additionally:

(a) Upon expiration (but not termination) of this Agreement, the licenses granted to Licensee under Section 2.1 (with respect to Licensed Products that are [*], solely to the extent that the applicable [*] has been exercised prior to expiration) and Section 2.2 (to the extent that the applicable Option has been exercised prior to expiration) shall continue on a perpetual, irrevocable, exclusive, fully paid-up, royalty-free basis.

(b) Upon termination (but not expiration) of this Agreement, all rights and licenses granted to Licensee in Article 2 shall terminate, subject to Section 9.7, all rights of Licensee under the Patent Rights and Know-How Rights shall revert to Institute, and Licensee and its Affiliates shall cease all use of the Patent Rights and the Know-How Rights. Following the effective date of such termination, all Licensed Products that are EBV-Specific CTL Products or CMV-Specific CTL Products or New CTL Products or Program [*], as applicable, shall thereafter be deemed "**Reversion Products**" and shall be subject to Section 9.7. Notwithstanding the foregoing, in the event of a material breach by Institute of this Agreement permitting Licensee to terminate this Agreement pursuant to Section 9.3, as finally determined pursuant to a resolution in accordance with Article 20 or mutually agreed by the Parties (including by way of settlement), Licensee may, at its sole discretion and in lieu of such termination, elect to keep this Agreement in place and continue the development and commercialization of Licensed Products hereunder. If Licensee decides to keep this Agreement in place in lieu of termination, all payments, including all Milestone Payments and Earned Royalties, that would be due to Institute thereafter under the terms of this Agreement shall be [*] for the remainder of the Term.

(c) Upon termination (but not expiration) of this Agreement, all regulatory filings (including all INDs and BLAs) and Regulatory Approvals and all other documents necessary to further develop and commercialize the Reversion Products, as they exist as of the date of such termination, (and all of Licensee's right, title and Institute therein and thereto) shall be assigned to Institute, and Licensee shall provide to Institute one (1) copy of the foregoing documents and filings that relate to Reversion Products, subject to Institute's reimbursement

of Licensee's actual costs incurred in transferring such items to Institute, and preparing such items in connection with such transfer. For clarity, Institute shall have the right to use the foregoing material information, materials and data developed by Licensee solely in connection with Institute's (or its Affiliates or licensees') development, manufacture and commercialization of Reversion Products.

(d) Upon termination (but not expiration) of this Agreement, in the event that Licensee has inventory of any Licensed Product included in the Reversion Products prior to the effective date of termination, Licensee shall have [*] months after the effective date of termination during which to dispose of such inventory (subject to the payment to Institute of any royalties due hereunder thereon) (the "**Inventory Disposal Period**").

(e) Upon termination (but not expiration) of this Agreement, Licensee shall provide to Institute the tangible embodiments of all know-how, data and information Controlled by Licensee and its Affiliates in existence as of the effective date of such termination to the extent necessary for the development and commercialization of the Reversion Products as such Reversion Products exist as of the effective date of such termination, subject, to Institute's reimbursement of Licensee's actual out of pocket and internal direct costs and expense incurred in transferring such items, and preparing and making such items in connection with such transfer. Licensee shall grant, and hereby grants to Institute, subject to Institute's payment obligations under Section 9.7, and reimbursement of Licensee's costs of transferring such materials, a perpetual, worldwide, transferable, sublicensable right and license under such know-how, data and information solely for (i) researching, developing, using, importing, selling and offering for sale Reversion Products in the Territory, which license shall be exclusive for purposes of this subpart (i), and (ii) making and having made Reversion Products anywhere in the Territory for use, importation, sale and offer for sale in the Territory, which license shall be non-exclusive for purposes of this subpart (ii).

(f) Upon termination (but not expiration) of this Agreement, subject to Section 9.7, Licensee shall grant and hereby grants to Institute an exclusive, royalty-bearing (as set forth in Section 9.7), non-transferable license, with the right to grant sublicenses, under any patents or patent applications Controlled by Licensee or Affiliates as of the effective date of termination [*] and that are [*].

(g) Upon termination (but not expiration) of this Agreement, Licensee shall provide to Institute all data generated during the term of this Agreement pursuant to this Agreement and the Research Agreement [*] Reversion Products and [*], subject to Institute's [*].

(h) Neither Party shall be relieved of any obligation that accrued prior to the effective date of expiration or a termination.

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(i) Any costs and expenses incurred by Licensee in connection with the assignments and transfers made by Licensee under this Section 9.6 shall be borne by Institute.

(j) Nothing in this Section 9.6 shall be deemed to limit any remedy to which either Party may be entitled by applicable Law.

9.7 **Reversion of Rights**. If Institute obtains rights in any Reversion Product pursuant to this Article 9, Institute will have the rights under such Reversion Product set forth in Section 9.6, provided that if Institute elects to grant a license or sublicense to any Third Party under patent rights or know-how Controlled by Licensee and relating to such Reversion Products (the "**Reversion Product IP**") to develop and commercialize any such Reversion Product, then on a Reversion Product-by-Reversion Product basis, Institute shall pay to Licensee a specified percentage of all consideration of any type received from each such Third Party licensee or sublicensee paid for the grant of such license or sublicense, or sales of products that are claimed or covered by such Reversion Product IP, as set forth in the table below, with the applicable percentage being based on (a) [*], and (b) [*].

[*]Effective Date of Termination	**Royalty Percentage [*].**	**Royalty Percentage [*].**
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]

9.8 **Surviving Provisions.** Any termination or expiration of this Agreement will not affect the rights and obligations set forth in the following Articles and Sections: Articles 1, 10, 12, 16, 17, 19, 20, 22 and 23, and Sections 2.6, 3.4, 4.12 and 4.13 (to the extent applicable to payments accruing during the Term), 5.6 (to the extent applicable to Licensed Products that become Reversion Products pursuant to Section 5.6), 8.1, 8.2, 9.6, 9.7, 9.8, 9.9 (following expiration, but not termination), 11.3, 13.1, 13.3, 15.1 and 15.2.

9.9 **Section 365(n) of the Bankruptcy Code** All rights and licenses granted under or pursuant to any section of this Agreement are, and shall otherwise be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code, licenses of rights to "intellectual property" as defined under Section 101(35A) of the U.S. Bankruptcy Code to the extent permitted thereunder. The Parties shall retain and may fully exercise all of their respective rights and elections under the U.S. Bankruptcy Code. Upon the bankruptcy of any Party, the non-bankrupt Party shall further be entitled to a complete duplicate of (or

complete access to, as appropriate) any such intellectual property, and such, if not already in its possession, shall be promptly delivered to the non-bankrupt Party, unless the bankrupt Party elects to continue, and continues, to perform all of its obligations under this Agreement.

10. **USE OF NAMES AND TRADEMARKS**

10.1 Nothing contained in this Agreement will be construed as conferring any right to either Party to use in advertising, publicity or other promotional activities any name, trade name, trademark or other designation of the other Party (including a contraction, abbreviation or simulation of any of the foregoing), except if such use if required by applicable law, rule or regulation (including the regulations of any securities exchange upon which Licensee's shares are listed).

11. **REPRESENTATIONS AND WARRANTIES**

11.1 **Mutual Representations and Warranties.** Each Party represents and warrants to the other Party that, as of the Execution Date:

(a) such Party is duly organized and validly existing under the Laws of the jurisdiction of its incorporation or organization;

(b) such Party has taken all action necessary to authorize the execution and delivery of this Agreement and the performance of its obligations under this Agreement;

(c) this Agreement is a legal and valid obligation of such Party, binding upon such Party and enforceable against such Party in accordance with the terms of this Agreement, except as enforcement may be limited by applicable bankruptcy, fraudulent conveyance, insolvency, reorganization, moratorium and other laws relating to or affecting creditors' rights generally and by general equitable principles; and

(d) such Party has all right, power and authority to enter into this Agreement, to perform its obligations under this Agreement.

11.2 **Certain Institute Representations and Covenants**.

(a) The Institute confirms and the Licensee acknowledges the Institute has granted prior non-exclusive rights to commercialize [*] and related Know How in the fields of:

(i) [*]; and

(ii) [*].

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(b) Institute is the sole owner of the Patent Rights licensed to Licensee hereunder with the right to grant Licensee the licenses described in Sections 2.1 and 2.2. As of the Execution Date, except as set forth in Section 11.2(a) with respect to Diagnostic Products and no other Licensed Products, Institute has not assigned, transferred, conveyed, granted any license or other rights, or otherwise encumbered its right, title and interest in the Patent Rights or the Know-How, or other patents, patent applications or know-how specific to CTL Products, in any way that would conflict with or limit the scope of any of the rights or licenses granted to Licensee hereunder.

(c) The Institute hereby represents and warrants to Licensee that as of the Execution Date, to the best of its knowledge there are no patents or patent applications that if issued as patents, in either case, Controlled by Institute that are necessary for the development and commercialization of CTL Products, HPV-Specific CTL Products, BKV-Specific CTL Products, the [*] as currently conducted by Institute, or as contemplated to be conducted by the Parties pursuant to this Agreement (if each of the EBV Autologous Option, the [*] Option and the [*] were exercised by Licensee) and/or the Research Agreement. Institute hereby irrevocably covenants, on behalf of itself and its Affiliates that it will not, directly or indirectly, alone or by, with or through others, cause, induce or authorize, or voluntarily assist, participate or cooperate in, the commencement, maintenance or prosecution of any action or proceeding of any kind or nature whatsoever, including, but not limited to, any suit, complaint, grievance, demand, claim, cause of action in, of or before any Governmental Authority against Licensee, or any Affiliate or sublicensee of Licensee, arising from, or in connection with any alleged infringement of any issued patents in any country Controlled by Institute in connection with the manufacture, use, offer to sell, sale, importation or other disposition of any CTL Product, New CTL Product or Program [*] in accordance with and subject to all terms and conditions applicable to a license granted under this Agreement, by Licensee, or any Affiliate or sublicensee of Licensee occurring after the Execution Date.

11.3 **Disclaimer of Representations and Warranties**. Other than the representations and warranties provided in Sections 11.1 and 11.2 above, NEITHER PARTY MAKES ANY REPRESENTATIONS AND WARRANTIES, WHETHER EXPRESS OR IMPLIED, AND EXPLICITLY DISCLAIMS ANY REPRESENTATION AND WARRANTY, INCLUDING WITH RESPECT TO ANY ACCURACY, COMPLETENESS, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COMMERCIAL UTILITY, NON-INFRINGEMENT OR TITLE FOR THE INTELLECTUAL PROPERTY, PATENT RIGHTS, LICENSE AND ANY PRODUCT.

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12. **LIMITATION OF LIABILITY**

12.1 NEITHER PARTY WILL BE LIABLE FOR ANY LOST PROFITS, COSTS OF PROCURING SUBSTITUTE GOODS OR SERVICES, LOST BUSINESS, ENHANCED DAMAGES FOR INTELLECTUAL PROPERTY INFRINGEMENT OR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR OTHER SPECIAL DAMAGES SUFFERED BY THE OTHER PARTY OR ITS SUBLICENSEES OR AFFILIATES ARISING OUT OF OR RELATED TO THIS AGREEMENT FOR ALL CAUSES OF ACTION OF ANY KIND (INCLUDING TORT, CONTRACT, NEGLIGENCE, STRICT LIABILITY AND BREACH OF WARRANTY) EVEN IF THE OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

13. **INTELLECTUAL PROPERTY; PATENT PROSECUTION AND MAINTENANCE**

13.1 **Intellectual Property Ownership**. With the exception of the rights granted to Licensee pursuant to this Agreement, each Party shall retain all right, title and interest in and to its Background IP. Ownership of intellectual property and inventions arising as a result of the Parties' activities under the Research Agreement are set forth in Article 9 of the Research Agreement. Except as set forth in the Research Agreement, ownership of intellectual property rights arising out of this Agreement or the Research Agreement shall follow inventorship. Inventorship shall be determined in accordance with United States Patent Law (without regard to any conflict of law principles).

13.2 **Patent Prosecution.**

(a) Institute shall have the first right, and shall use Commercially Reasonable Efforts to diligently prosecute and maintain (i) the Patent Rights existing as of the Original Effective Date and licensed to Licensee hereunder (the "**Base Patent Rights**"), and (ii) prior to the exercise of the applicable Option, any patents and patent applications arising from activities conducted under the Research Agreement that relate solely to Autologous CTL Products that are (A) EBV-Specific CTL Products (prior to exercise of the EBV Autologous Option), or (B) [*]), at Licensee's expense, using United States based patent counsel of its choice reasonably acceptable to Licensee. Institute will provide Licensee promptly with copies of all relevant documentation so that Licensee will be informed of the continuing prosecution and may comment upon such documentation sufficiently in advance of any initial deadline for filing a response. Institute agrees that it will incorporate any reasonable comments by Licensee in relation to such prosecution activities, provided that with respect to any claims of the Base Patent Rights that relate directly to Licensed Products or the manufacture or use thereof, Licensee shall have the right to make the final decision regarding prosecution of such claims, including the filing of any new claims relating to

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Licensed Products or the manufacture or use thereof. Licensee agrees that all documentation relating to the prosecution and maintenance of the Patent Rights shall be the Confidential Information of both Parties. Without limiting the foregoing, Institute shall use all reasonable efforts to amend any patent application to include claims reasonably requested by Licensee to protect the products contemplated to be sold under this Agreement and the activities being conducted under the Research Agreement.

(b) Licensee shall have the first right, and shall use Commercially Reasonable Efforts to diligently prosecute and maintain any patents and patent applications arising from activities conducted under the Research Agreement that relate to (i) Allogeneic CTLs or Allogeneic CTL Products, and (ii) solely following the exercise of the applicable Option any patents and patent applications arising from activities conducted under the Research Agreement that relate solely to Autologous CTL Products that are (A) EBV-Specific CTL Products (prior to exercise of the EBV Autologous Option), or (B) [*], and (iii) New CTL Products and Program [*], in each case of (i), (ii) and (iii), provided that such patents and patent applications do not claim priority to any patent or patent application included in the Base Patent Rights (in which case Section 13.2(a) shall apply) (the "**Research Agreement Patent Rights**"), at Licensee's expense, using United States based patent counsel of its choice reasonably acceptable to Institute. For clarity, any Patent Rights Controlled by Institute as of the date upon which the Parties mutually agree in writing to include a New Research Program within the Research Agreement, and New CTL Products arising from such New Research Program within the scope of this Agreement (each, a "**New Research Program Inclusion Date**") that relate specifically to such New Research Program (including the Target thereof) or such New CTL Products (the "**New Research Patent Rights**") shall be considered Research Agreement Patent Rights as of the New Research Program Inclusion Date, and shall be subject to this Section 13.2. Promptly following any New Research Program Inclusion Date, unless the Parties otherwise agree in writing, Institute will transfer to Licensee, or to counsel of Licensee's choice reasonably acceptable to Institute, all relevant documentation required for Licensee to assume responsibility for prosecution and maintenance of such New Research Patent Rights. Following the New Research Program Inclusion Date, Licensee will provide Institute promptly with copies of all relevant documentation so that Institute will be informed of the continuing prosecution and may comment upon such documentation sufficiently in advance of any initial deadline for filing a response. Licensee agrees that it will incorporate any reasonable comments by Institute in relation to such prosecution activities, provided that with respect to any claims of the Research Agreement Patent Rights that relate directly to Autologous CTLs or Autologous CTL Products, or the manufacture or use thereof, Institute shall have the

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right to make the final decision regarding prosecution of such claims, including the filing of any new claims relating to Autologous CTLs or Autologous CTL Products, or the manufacture or use thereof.

(c) Each Party agrees that all documentation relating to the prosecution and maintenance of the Patent Rights shall be the Confidential Information of both Parties. Without limiting the foregoing, Institute shall use all reasonable efforts to amend any patent application to include claims reasonably requested by Licensee to protect the products contemplated to be sold under this Agreement and the activities being conducted under the Research Agreement.

13.3 **Effects of Termination.** The Licensee will be obligated to pay costs incurred in relation to prosecuting and maintaining the Patent Rights in accordance with Section 13.2, even if the invoices for such costs are received by the Licensee after the delivery or receipt of a notice of termination. The Licensee may terminate its obligation to pay the cost of any given patent application or patent under the Patent Rights in any or all designated countries upon three (3)-months' written notice to Institute. Institute may continue prosecution and/or maintenance of such application(s) or patent(s), and applications in foreign countries where Licensee has elected not to pay costs, at its sole discretion and expense, in which case the Licensee will have no further right or licenses thereunder.

14. **PATENT INFRINGEMENT**

14.1 **Infringement Notice.** If Institute or the Licensee learns of infringement of potential commercial significance of any Patent Rights licensed under this Agreement, the knowledgeable Party will provide the other Party with: (a) written notice of such infringement; and (b) any evidence of such infringement available to it (the "**Infringement Notice**"). During the period in which, and in the jurisdiction where, Licensee has exclusive rights under this Agreement, neither Institute nor the Licensee will notify a possible infringer of infringement or put such infringer on notice of the existence of any Patent Rights without first obtaining consent of the other, which consent will not be unreasonably withheld, delayed or conditioned; provided, however, that Licensee may notify any then-existing Sublicensees under the relevant Patent Rights of such infringement without Institute's prior consent if such Sublicensee is bound by obligations of confidentiality with respect to such information. Both Institute and the Licensee will use their diligent efforts to cooperate with each other to terminate such infringement (with or without litigation).

14.2 **Enforcement**. If infringing activity of potential commercial significance has not been abated within [*] following the date the Infringement Notice for such activity was provided, then during the period in which, and in the jurisdiction where, Licensee has exclusive rights under this Agreement,

Licensee shall have the first right, but not the obligation, to Institute suit for patent infringement against the infringer after providing Institute (a) [*], including an [*]and (b) [*]. Institute may voluntarily join such suit at Licensee's reasonable expense, but may not thereafter commence suit against the infringer for the acts of infringement that are the subject of Licensee's suit or any judgment rendered in such suit. Licensee may not join Institute in a suit initiated by Licensee without Institute's prior written consent, such consent not to be unreasonably withheld, delayed or conditioned. If in a suit initiated by Licensee, Institute is involuntarily joined other than by Licensee, then Licensee will pay any documented costs incurred by Institute arising out of such suit, including any documented legal fees of counsel that Institute selects and retains to represent it in the suit. Licensee shall be free to enter into a settlement, consent judgment or other voluntary disposition, provided that any settlement, consent judgment or other voluntary disposition that (i) limits the scope, validity or enforcement of the Patent Rights or (ii) admits fault or wrongdoing on the part of Licensee or Institute must be approved in advance by Institute in writing, such approval not to be unreasonably withheld, delayed or conditioned. Licensee's request for such approval shall include complete copies of final settlement documents, a detailed summary of such settlement, and any other information material to such settlement. Institute shall provide Licensee notice of its approval or denial within [*] of any request for such approval by Licensee, provided that (A) in the event Institute wishes to deny such approval, such notice shall include a detailed written description of Institute's reasonable objections to the proposed settlement, consent judgment, or other voluntary disposition and (B) Institute shall be deemed to have approved of such proposed settlement, consent judgment, or other voluntary disposition in the event it fails to provide such notice within such [*] period in accordance herewith.

14.3 **Step-In Right**. If, within [*] days following the date the Infringement Notice was provided, infringing activity of potential commercial significance has not been abated and if Licensee has not brought suit against the infringer, then Institute may Institute suit for patent infringement against the infringer. If Institute Institutes such suit, then Licensee may not join such suit without the prior written consent of Institute and may not thereafter commence suit against the infringer for the acts of infringement that are the subject of Institute's suit or any judgment rendered in such suit.

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14.4 **Recoveries**. Any recovery or settlement received in connection with any suit will first be shared by Institute and Licensee to cover any litigation costs each incurred and next shall be paid to Institute or Licensee to cover any litigation costs it incurred in excess of the litigation costs of the other. Any remaining recoveries shall be allocated as follows:

(a) For any portion of the recovery or settlement related to the infringement of the Patent Rights, other than for amounts attributable and paid as enhanced damages for willful infringement: for any suit that is initiated by Licensee and in which Institute was not a party in the litigation, Institute shall receive [*] of the recovery, and the Licensee shall receive the remainder; and

(b) for any suit that is initiated by the Licensee or Institute and that the other Party voluntarily joined (but only to the extent such voluntary joining is allowed under this Agreement or expressly by the other Party in a separate agreement) or involuntarily joined, the non-initiating Party's percentage of such recovery shall be [*].

For any portion of the recovery or settlement related to the infringement of Patent Rights paid as enhanced damages for willful infringement:

(c) for any suit that is initiated by Licensee or Institute and the other Party voluntarily joined but only to the extent such voluntary joining is allowed under this Agreement or expressly by the other Party in a separate agreement) or involuntarily joined, the non-initiating Party's percentage of such recovery shall be [*] and the initiating Party shall receive the remainder; and

(d) for any suit that is initiated by Licensee and in which Institute was not a party in the litigation, Institute shall receive [*] and the Licensee shall receive the remainder.

For any portion of the recovery or settlement received in connection with any suit that is initiated by Institute and in which Licensee was not a party in the litigation, any recovery [*].

14.5 **Cooperation**. Each Party will reasonably cooperate and assist with the other in litigation proceedings Instituted hereunder but at the expense of the Party who initiated the suit (unless such suit is being jointly prosecuted by the Parties). For clarity, such requirement does not require a Party to join a suit unless otherwise specifically required under this Agreement. If Institute is subjected to Third Party discovery related to the Patent Rights licensed to Licensee hereunder, or to Licensed Products, Licensee will pay Institute's documented out of pocket expenses with respect to same.

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15. **INDEMNIFICATION**

15.1 **Indemnification by Licensee.** Licensee shall defend, indemnify and hold Institute and its respective trustees, officers, faculty, students, employees, contractors and agents (the "**Institute Indemnitees**") harmless from and against any and all liability, damage, loss, cost or expense (including reasonable attorneys' fees), including, without limitation, bodily injury, risk of bodily injury, death and property damage to the extent arising out of Third Party claims and suits related to (a) this Agreement or any Sublicense, including (i) the development, testing, use, manufacture, promotion, sale or other disposition of any Licensed Product (including any product liability claim), excluding any activities relating to Autologous CTL Products prior to the exercise of the Option, or following reversion to Institute pursuant to Section 7.3 and/or Section 9.6, (ii) any enforcement action or suit brought by Licensee against a Third Party for infringement of the Patent Rights, (iii) any claim by a Third Party that the practice of the Patent Rights or the design, composition, manufacture, use, sale or other disposition of any Licensed Product infringes or violates any patent, copyright, trade secret, trademark or other intellectual property right of such Third Party, (iv) any breach of this Agreement or Laws by Licensee, its Affiliates or Sublicensees and (b) Licensee's negligence, omissions or willful misconduct, provided that Licensee's obligations pursuant to this Section 15.1 shall not apply to the extent such claims or suits result from the negligence, gross negligence or willful misconduct of any Institute Indemnitees as determined by a court of law.

15.2 **Process**. As a condition to an Institute Indemnitee's right to receive indemnification under Section 15.1, an Institute Indemnitee shall: (a) promptly notify (not to exceed thirty (30) days) Licensee as soon as it becomes aware of a claim or suit for which indemnification may be sought pursuant hereto; (b) reasonably cooperate, and cause the individual Institute Indemnitees to reasonably cooperate, with the indemnifying Party in the defense, settlement or compromise of such claim or suit; and (c) permit the indemnifying Party to control the defense, settlement or compromise of such claim or suit, including the right to select defense counsel. In no event, however, may Licensee compromise or settle any claim or suit in a manner which (i) admits fault or negligence on the part of any Institute Indemnitee; (ii) commits any Institute Indemnitee to take, or forbear to take, any action, without the prior written consent of Institute (which consent in the case of either (i) or (ii) shall not be unreasonably withheld, delayed or conditioned), or (iii) grant any rights under the Patent Rights except for Sublicenses permitted under Article 2. The Institute Indemnitees shall reasonably cooperate with Licensee and its counsel in the course of the investigation of, preparation for and defense of any such

suit, claim or demand, such cooperation to include without limitation using reasonable efforts to provide or make available documents, information and witnesses, and provided further that no Institute Indemnitee may compromise or settle any such Third Party claim without the Licensee's written consent**.**

15.3 **Insurance.** The Licensee, at its reasonable cost and expense, will insure its activities in connection with any work performed hereunder and will obtain, keep in force, and maintain Commercial Form General Liability Insurance (contractual liability included) with limits as follows:

Each Occurrence	[*]
Products/Completed Operations Aggregate	[*]
Personal Injury	[*]
General Aggregate (commercial form only)	[*]

15.4 **Certificates.** After receipt of Institute's written request, the Licensee will furnish Institute with certificates of insurance evidencing compliance with all requirements. Such certificates will: indicate Institute as an additional insured(s) under the coverage described above in Section 15.3.

16. **NOTICES**

Any notice or payment hereunder shall be deemed to have been properly given when sent in writing in English to the respective address below and shall be deemed effective:

(a) on the date of delivery if delivered in person;

(b) on the date of mailing if mailed by first-class certified mail, postage paid;

(c) on the date of mailing if mailed by any global express carrier service that requires the recipient to sign the documents demonstrating the delivery of such notice or payment; or

(d) in the case of notices, if sent by email, on the date the recipient acknowledges having received that email by either an email sent to the sender or by a notice delivered by another method in accordance with this Section 16.1, except that, automated replies and "read receipts" shall not be considered acknowledgement of receipt.

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In the case of Licensee:

For notices:

Atara Biotherapeutics, Inc.
611 Gateway Blvd #900,
South San Francisco, CA 94080
U.S.A
Attention: General Counsel

With a Copy to:

Atara Biotherapeutics, Inc.
4360 Park Terrace Dr., Suite #100,
Westlake Village, CA 91361
U.S.A
Attention: Chief Medical Officer

In the case of Institute:

For notices:

QIMR Berghofer Medical Research Institute
300 Herston Road,
Herston, Queensland, 4006
AUSTRALIA
Attention: Chief Operating Officer

For remittance of payments:

QIMR Berghofer Medical Research Institute
300 Herston Road,
Herston, Queensland, 4006
AUSTRALIA
Attention: Chief Financial Officer

17. **ASSIGNABILITY**

17.1 The Licensee may assign or transfer this Agreement, and the rights granted to Licensee under the terms of this Agreement, without Institute's prior written consent, only to an Affiliate of Licensee or in the case of assignment or transfer to a party that succeeds to all or substantially all of Licensee's business or assets relating to this Agreement, whether by stock sale, merger, operation of law or otherwise, provided that Licensee gives Institute written notice within [*] after the effective date of such assignment. This Agreement is binding upon and will inure to the benefit of a Party, its successors

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and assigns. Any assignment not in accordance with this Section 17.1 shall be null and void in its entirety.

18. **FORCE MAJEURE**

18.1 The Parties shall not be responsible for failure to perform due to the occurrence of any events beyond their reasonable control which render their performance impossible, including, but not limited to: accidents (environmental, toxic spill, etc.); acts of God; biological or nuclear incidents; casualties; earthquakes; fires; floods; governmental acts; orders or restrictions; inability to obtain suitable and sufficient labor, transportation, fuel and materials; local, national or state emergency; power failure and power outages; acts of terrorism; strike; and war.

19. **GOVERNING LAWS**

19.1 This Agreement will be interpreted and construed in accordance with the laws of the State of New York, United States of America, excluding any choice of law rules that would direct the application of the laws of another jurisdiction, but the scope and validity of any patent or patent application will be governed by the applicable laws of the country of such patent or patent application.

20. **DISPUTE RESOLUTION**

20.1 **Executive Resolution.** The parties shall initially seek amicably to settle all disputes (each, a "**Dispute**") arising out of or in connection with this Agreement by negotiation, which may include discussion at the JSC, subject to the Parties' respective final decision making authority as set forth in Section 3.3(f) of the Research Agreement. If, within [*] after written notice by either Party of the existence of a Dispute, the Parties do not resolve such Dispute, then the Dispute shall be referred to the Designated Executive Officers from each Party for further negotiation. If the Designated Executive Officers of each Party cannot resolve such Dispute, then subject to Section 3.3(f) of the Research Agreement and Section 20.7 of this Agreement, such Dispute will be referred to final binding arbitration in accordance with Sections 20.2 through 20.6.

20.2 **Arbitration**. Any Dispute referred for arbitration shall be finally settled under the Rules of the International Centre for Dispute Resolution (the "**Rules of Arbitration**") then in force, by one arbitrator appointed in accordance with such Rules of Arbitration. The Arbitral Tribunal shall be guided by the IBA Rules on the Taking of Evidence in International Arbitration, and there shall be no depositions. The place of the arbitration shall be New York, New York, United States of America. The language of the arbitration shall be English.

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20.3 **Selection of the Arbitrator**. Each arbitrator shall have [*] of experience in arbitrating disputes in the pharmaceutical industry, or of pharmaceutical licensing disputes and be admitted to practice law in the United States of America. The arbitrator conducting the arbitration must and shall agree to render an award within [*] after the final hearing. The arbitrator [*]. Without limiting any other remedies that may be available under Applicable Laws, the arbitrator shall have [*)].

20.4 **Conduct of the Arbitration**. The Parties undertake to keep confidential all awards in their arbitration, together with all materials in the proceedings created for the purpose of the arbitration and all other documents produced by another Party in the proceedings not otherwise in the public domain, save and to the extent that disclosure may be required of a Party by legal duty or under Applicable Law, the rules and regulations of any stock exchange or quotation services on which such Party's stock is traded or quoted, to protect or pursue a legal right or to enforce or challenge an award in legal proceedings before a court or other judicial authority.

20.5 **Continued Performance**. Unless otherwise agreed in writing, the Parties will continue to perform their respective obligations under this Agreement during any arbitration or court proceeding seeking enforcement of an arbitral decision or award, and, unless this Agreement is in its entirety deemed null and void or is otherwise revoked or rescinded in its entirely, the Parties shall continue to perform their respective remaining obligations under this Agreement, and may continue to exercise their respective remaining rights and remedies thereunder, following any arbitration.

20.6 **Preliminary Injunctions**. Notwithstanding anything in this Agreement to the contrary, a Party may seek a temporary restraining order or a preliminary injunction from any court of competent jurisdiction in order to prevent immediate and irreparable injury, loss, or damage on a provisional basis, pending the decision of the arbitrator(s) on the ultimate merits of any Dispute.

20.7 **Patent Disputes**. Notwithstanding anything in this Agreement to the contrary, any dispute concerning inventorship that is not resolved within [*] following notice by one Party to the other Party of the creation or reduction to practice of any Invention, and any dispute regarding any and all issues regarding the scope, construction, validity, and enforceability of any patent or patent application (including whether or not such patent or patent application should be included in the Patent Rights under the License Agreement) in a country within the Territory shall be determined in a court or other governmental authority of competent jurisdiction under the applicable patent laws of such country.

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21. **COMPLIANCE WITH LAWS**

21.1 The Licensee shall comply with all applicable international, national, state, regional and local laws and regulations in performing its obligations hereunder and in its use, manufacture, Sale or import of the Licensed Products. The Licensee will observe all applicable United States and foreign laws with respect to the transfer of Licensed Products and related technical data to foreign countries, including, without limitation, the International Traffic in Arms Regulations (ITAR) and the Export Administration Regulations.

22. **CONFIDENTIALITY**

22.1 **Confidential Information.** The Licensee and Institute will treat and maintain the other Party's Confidential Information in confidence using at least the same degree of care as the receiving Party uses to protect its own proprietary and confidential information of a like nature from the date of disclosure until seven (7) years after the termination or expiration of this Agreement, provided that a Party may designate one or more specific, defined items of Confidential Information as 'Trade Secret', by giving written notice to the other Party briefly outlining its reasons why longer protection is warranted, and in such case the other Party shall protect such information indefinitely unless and until Section 22.4 applies. Confidential Information can be written, oral, or both.

22.2 **Relationship to Existing Confidentiality Agreement**. This Agreement supersedes that certain Confidential Disclosure Agreement entered into between Licensee and Institute, dated May 28, 2015 (the "**Existing Confidentiality Agreement**"); provided that all "Confidential Information" disclosed by the disclosing Party thereunder shall be deemed Confidential Information of the disclosing Party hereunder and shall be subject to the terms and conditions of this Agreement and the receiving Party thereunder shall be bound by and obligated to comply with such terms and conditions as if they were the receiving Party hereunder. The foregoing shall not be interpreted as a waiver of any remedies available to the disclosing Party as a result of any breach, prior to the Original Effective Date, by the receiving Party, respectively, of its obligations pursuant to the Existing Confidentiality Agreement.

22.3 **Permitted Disclosure**. The Licensee and Institute may use and disclose the other Party's Confidential Information to their Affiliates, employees, agents, consultants, contractors, and, in the case of the Licensee, its Sublicensees, in each case on a need to know basis for the purposes of such Affiliates, Sublicensees and Third Parties performing activities under this Agreement or the Research Agreement, provided that such parties are bound by a like duty of confidentiality as that found in this Article 22 (Confidentiality). Furthermore, Licensee may disclose Institute's Confidential Information

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to: (a) Licensee's potential or actual collaborators, partners, licensees and sublicensees, and (b) potential or actual investment bankers, acquirers, lenders or investors, and (c) advisors of Licensee or any of the foregoing in (a) and (b); each of whom, prior to disclosure, must be bound by similar obligations of confidentiality and non-use as set forth in this Article 22.

22.4 **Limitations.** Nothing contained herein will restrict or impair, in any way, the right of the Licensee or Institute to use or disclose any of the other Party's Confidential Information:

(a) that recipient can demonstrate by written records was previously known to it prior to its disclosure by the disclosing Party;

(b) that recipient can demonstrate by written records is now, or becomes in the future, public knowledge other than through acts or omissions of recipient;

(c) that recipient can demonstrate by written records was obtained lawfully and without restrictions on the recipient from sources independent of the disclosing Party; and

(d) that a Party is required to disclose pursuant to applicable law, rule or regulation.

The Licensee or Institute also may disclose Confidential Information that is required to be disclosed: (i) to a governmental entity or agency in connection with seeking any governmental or regulatory approval, governmental audit, or other governmental contractual requirement; or (ii) by law, provided that the recipient uses reasonable efforts to give the party owning the Confidential Information sufficient notice of such required disclosure to allow the party owning the Confidential Information reasonable opportunity to object to, and to take legal action to prevent, such disclosure. Notwithstanding anything to the contrary in this Agreement, Licensee may disclose Confidential Information it receives pursuant to this Agreement, to its actual or potential investors, acquirors, advisors, Sublicensees, consultants and employees who are bound by obligations of confidentiality with respect thereto.

22.5 **Return of Information.** Upon termination of this Agreement, or the request of the disclosing Party, if earlier, the Licensee and Institute will destroy or return any of the disclosing Party's Confidential Information in its possession within [*] following the termination of this Agreement and provide each other with prompt written notice that such Confidential Information has been returned or destroyed. Each Party may, however, retain one (1) copy of such Confidential Information for archival purposes in non-working files.

22.6 **Additional Confidentiality Obligations**. Upon written request of Licensee, Institute agrees to cooperate in good faith with Licensee and Memorial Sloan Kettering Cancer Center ("**MSK**") in order

to enter into a mutually agreed tripartite confidentiality and non-disclosure agreement with Licensee and MSK, which agreement shall provide for the obligations of non-disclosure with respect to information shared between the Parties and MSK for the purposes of furthering the activities under this Agreement and the Research Agreement.

23. **MISCELLANEOUS**

23.1 **Headings**. The headings of the Sections are inserted for convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement.

23.2 **Binding Agreement**. This Agreement is not binding on the Parties until it has been signed below on behalf of each Party. It is then effective as of the Original Effective Date.

23.3 **Amendments**. No amendment or modification of this Agreement is valid or binding on the parties unless made in writing (identifying the provision that is amended or modified) and signed on behalf of each Party.

23.4 **Waiver**. No waiver by either Party of any breach or default of any of the agreements contained herein will be deemed a waiver as to any subsequent and/or similar breach or default. No waiver of this Agreement is valid or binding on the Parties unless made in writing (identifying the provision that is waived) and signed on behalf of each Party.

23.5 **Entire Agreement**. This Agreement and the Research Agreement embody the entire understanding of the Parties and supersedes the Original License Agreement and all previous communications, representations or understandings, either oral or written, between the Parties relating to the subject matter hereof.

23.6 **Invalidity**. In case any of the provisions contained in this Agreement is held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provisions of this Agreement and this Agreement will be construed as if such invalid, illegal or unenforceable provisions had never been contained in it.

23.7 **Independent Contractors**. In performing their respective duties under this Agreement, each of the Parties will be operating as an independent contractor. Nothing contained herein will in any way constitute any association, partnership, or joint venture between the Parties hereto, or be construed to evidence the intention of the Parties to establish any such relationship. Neither Party will have the power to bind the other Party or incur obligations on the other Party's behalf without the other Party's prior written consent.

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23.8 **Construction**. Except where the context otherwise requires, wherever used, the use of any gender will be applicable to all genders, and the word "or" is used in the inclusive sense. When used in this Agreement, "including" means "including without limitation". References to either Party include the successors and permitted assigns of that Party. The Recitals are incorporated by reference into this Agreement. The headings of this Agreement are for convenience of reference only and in no way define, describe, extend or limit the scope or intent of this Agreement or the intent of any provision contained in this Agreement. The Parties have each consulted counsel of their choice regarding this Agreement, and, accordingly, no provisions of this Agreement will be construed against either Party on the basis that the Party drafted this Agreement or any provision thereof. The official text of this Agreement, any notice given or accounts or statements required by this Agreement, and any dispute proceeding related to or arising hereunder, will be in English. If any dispute concerning the construction or meaning of this Agreement arises, then reference will be made only to this Agreement as written in English and not to any translation into any other language.

23.9 **Counterparts**. This Agreement may be executed in one or more counterparts, each of which together shall constitute one and the same Agreement. For purposes of executing this Agreement, a facsimile (including a PDF image delivered via email) copy of this Agreement, including the signature pages, will be deemed an original. The Parties agree that neither Party will have any rights to challenge the use or authenticity of a counterpart of this Agreement based solely on that its signature, or the signature of the other Party, on such counterpart is not an original signature.

- Signature Page Follows -

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IN WITNESS WHEREOF, both Institute and the Licensee have executed this Agreement by their respective and duly authorized officers on the day and year written below. The Parties acknowledge that the signature date may not be the Execution Date.

ATARA BIOTHERAPEUTICS, INC.		**The COUNCIL OF THE QUEENSLAND INSTITUTE OF MEDICAL RESEARCH**	
By:	/s/ Isaac Ciechanover	By:	/s/ Frank Gannon
Name:	Isaac Ciechanover	Name:	Frank Gannon
Title:	CEO and President	Title:	Director and CEO
Date:	9/23/2016	Date:	9/26/2016

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Schedule 1.26

Competing Products

[*]

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Schedule 1.80

Patent Rights

- [*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Schedule 2.5

Key Terms of Academic Collaboration Agreement

[*]

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Schedule 4.4

[*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

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Exhibit 10.2

EXECUTION VERSION

AMENDED AND RESTATED RESEARCH AND DEVELOPMENT COLLABORATION AGREEMENT

BETWEEN

THE COUNCIL OF THE QUEENSLAND INSTITUTE OF MEDICAL RESEARCH

AND

ATARA BIOTHERAPEUTICS, INC,

AMENDED AND RESTATED RESEARCH AND DEVELOPMENT COLLABORATION AGREEMENT

This Amended and Restated Research and Development Collaboration Agreement ("**Agreement**"), entered into on 23 September, 2016 ("**Execution Date**"), and effective as of the Original Effective Date (as defined below), is made by and between **Atara Biotherapeutics, Inc.**, having its principal offices at 611 Gateway Blvd #900, South San Francisco, CA 94080, ("**Atara**"), and the **Council of the Queensland Institute of Medical Research**, a not-for-profit Institute organized and existing under the laws of the State of Queensland having its principal offices at 300 Herston Rd, Herston QLD 4006, Australia ("**Institute**"). Each of Atara and Institute are referred to in this Agreement as a "**Party**", and collectively as the "**Parties**"

WHEREAS, Institute has conducted certain research and development, and possesses certain expertise relating to the research and development of allogeneic and autologous cytotoxic T-lymphocytes ("**CTL**"), including in relation to the development of novel therapies targeting tumor and other cells infected with certain viruses, for use in oncology and autoimmune indications.

WHEREAS, Atara is a biotechnology company developing novel therapies for commercialization for the treatment of human diseases and conditions.

WHEREAS, the Parties desire to collaborate in relation to research and development activities to progress the development of novel allogeneic CTL therapies for use in treating oncology and autoimmune indications associated with the expression on or in cells, of Epstein Barr Virus (including all naturally occurring variants thereof) ("**EBV**") and/or cytomegalovirus (including all naturally occurring variants thereof) ("**CMV**") [*].

WHEREAS, the Institute is uniquely qualified to conduct the proposed research and the research is within Institute's mission and it is in the mutual interest of Atara and Institute that Institute continues to progress certain research and development activities already being conducted at or under the supervision of Institute, including certain clinical studies directed to the use of (a) autologous CTL therapies in certain oncology and autoimmune indications associated with the expression of EBV and/or CMV [*] on or in tumor and other cells, and (b) certain vaccines, in accordance with the terms and conditions set forth herein.

WHEREAS, Atara and Institute are parties to that certain Research and Development Collaboration Agreement (the "**Original Research Agreement**"), entered into on October 20, 2015 (the "**Original Effective Date**");

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

WHEREAS, the Parties desire that intellectual property rights and technology developed as a result of activities conducted under this Agreement be licensed to Atara for the further development and commercialization of CTL products based on novel allogeneic and autologous CTLs for use in the diagnosis, treatment, prophylaxis and palliation of diseases and conditions associated with EBV and CMV, and to that end, the Parties entered into the that certain exclusive License Agreement (the "**Original License Agreement**") simultaneous with the Original Research Agreement on the Original Effective Date; and

WHEREAS, the Parties desire to amend and restate such Original License Agreement in its entirety, and simultaneously to amend and restate the Original Research Agreement in its entirety as set forth herein.

NOW, THEREFORE, Institute and Atara hereby agree to the following terms and conditions in this Agreement:

1. **DEFINITIONS**

The following capitalized terms shall have the meanings set forth in this Article 1. Capitalized terms not defined in this Article 1 or elsewhere in this Agreement shall have the meaning given to such terms in the License Agreement.

1.1"**Affiliate**" shall have the meaning given in the License Agreement.

1.2"**Alliance Manager**" shall have the meaning given in Section 3.2(a).

1.3"**Allogeneic CTL Products**" shall have the meaning given in the License Agreement.

1.4"**Allogeneic Programs**" means (a) the research and development activities being performed by Institute and Atara pursuant to this Agreement directed to the identification and development of Allogeneic CTL Products, including (i) the Allogeneic EBV CTL Program, (ii) the Allogeneic CMV CTL Program, and (b) the research and development activities conducted under each New Research Program pursuant to Section 2.3 that is directed to the identification and development of New CTL Products comprising Allogeneic CTLs for use in any Indication.

1.5"**Atara Forecast**" shall have the meaning given in Section 2.7(c).

1.6"**Atara Forecast Quantity**" shall have the meaning given in Section 2.7(c).

1.7"**Atara Inventions**" shall have the meaning given in Section 9.1.

1.8"**Autologous CTL Products**" shall have the meaning given in the License Agreement.

1.9"**Autologous Programs**" means (a) the research and development activities being performed by Institute and Atara pursuant to this Agreement directed to the identification and development of Autologous CTL Products, including (i) the Autologous EBV CTL Program, (ii) the [*] CTL Program, and (b) the research and development activities conducted under each New Research Program pursuant to Section 2.3 that is directed to the identification and development of New CTL Products comprising Autologous CTLs for use in any Indication.

1.10"**Background IP**" shall have the meaning given in the License Agreement.

1.11"**BKV**" shall have the meaning given in Section 2.3(d).

1.12"**BKV CTL Budget**" shall have the meaning given in Section 2.6(d).

1.13"**BKV CTL Development Plan**" shall have the meaning given in Section 2.6(c).

1.14"**BKV CTL Program**" shall have the meaning given in Section 2.6(c).

1.15"**BKV CTL Research Contribution**" shall have the meaning given in Section 2.6(d).

1.16"**BKV Program**" shall have the meaning given in Section 2.3(d).

1.17"**Claims**" shall have the meaning given in Section 12.1.

1.18"**CMV**" shall have the meaning given in the Recitals.

1.19"**CMV [*] Development Plan**" shall have the meaning given in Section 2.6(e).

1.20"**Calendar Quarter**" means each successive period of three (3) consecutive calendar months ending on the last day of March, June, September, or December, respectively; provided that, the final Calendar Quarter shall end on the last day of the Term.

1.21"**Commercially Reasonable Efforts**" means, with respect to the efforts to be expended by a Party or its Affiliate with respect to any objective, activity or decision to be undertaken under this Agreement, those efforts that a company or institution developing technology within the bio-pharmaceutical industry of comparable size and resources would reasonably use to accomplish such objective, activity or decision under similar circumstances, and specifically means the carrying out of development activities using efforts that a company or institution developing technology within the bio-pharmaceutical industry of comparable size and resources would reasonably devote to a product at a similar stage in its development or product life, taking into consideration, among other factors, efficacy, safety, approved labeling, the patent and other proprietary position of the product, and the likelihood of regulatory approval given the regulatory structure involved. Commercially Reasonable Efforts shall be

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

determined on a Major Market-by-Major Market and indication-by-indication basis for the Products being developed under the Research Collaboration, and it is anticipated that the level of effort will change over time, reflecting changes in the status of each such Product, including with respect to any Product that is the subject of Autologous Programs, whether or not an Option (as defined in the License Agreement) has been exercised with respect to such Autologous Program.

1.22"**Confidential Information**" of a Party, means (a) information relating to the business, operations or products of a Party or any of its Affiliates, including any know-how, that such Party discloses, transfers or makes available to the other Party under this Agreement or the License Agreement, or which otherwise becomes known to the other Party by virtue of this Agreement or the License Agreement, in each case whether in written, oral, graphical, machine readable or other form, whether or not marked as confidential or proprietary, and (b) the terms of this Agreement and the License Agreement;

1.23"**CTL Product**" shall have the meaning given in the License Agreement.

1.24"**Data**" shall have the meaning given in Section 8.1.

1.25"**Designated Executive Officers**" means the Director and Chief Executive Officer of Institute, and the Chief Executive Officer of Atara.

1.26"**Development Plan**" means the plan, on a Program-by-Program basis for the research and development activities to be conducted pursuant to this Agreement for the current calendar year and the following one (1) calendar year, as prepared and updated in accordance with Section 2.2, including the budget for such activities. The initial Development Plan, which includes the current scope of research and development activities under the Autologous Programs and the Allogeneic Programs, as of the Original Effective Date is attached to this Agreement as Schedule 1.26(A) and the Budget for the activities to be conducted under such Development Plan is attached to this Agreement as Schedule 1.26(B).

1.27"**Dispute**" shall have the meaning given in Section 14.1.

1.28"**Draft Initial [*] Programs Budget**" shall have the meaning given in Section 2.6(f).

1.29"**EBNA1**" means Epstein Barr nuclear antigen 1.

1.30"**EBV**" shall have the meaning given in the Recitals.

1.31"[***] Development Plan**" shall have the meaning given in Section 2.6(e).

1.32"**Existing Confidentiality Agreement**" shall have the meaning given in Section 6.2.

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1.33“**Final Report**” shall have the meaning given in Section 8.1.

1.34“**FTE**” means the equivalent of the work of one (1) full-time employee of a Party or its Affiliates for one (1) year (consisting of 1540-1920 hours per year) in directly conducting activities under this Agreement. Any Party’s employee who devotes fewer than 1540 hours per year on the applicable activities shall be treated as an FTE on a pro-rata basis, calculated by dividing the actual number of hours worked by such employee on such activities by 1920. Any employee who devotes more than 1920 hours per year on the applicable activities shall be treated as one (1) FTE. For the avoidance of doubt, FTE shall not include the work of general corporate or administrative personnel, except for the portion of such personnel’s work time actually spent on conducting scientific or technical activities related to the Research Collaboration.

1.35“**FTE Rate**” shall mean the rates mutually agreed by the Parties for the engagement of specified FTEs, as set forth on Schedule 1.15.

1.36“**HPV**” shall have the meaning given in Section 2.6(a).

1.37“**HPV CTL Budget**” shall have the meaning given in Section 2.6(b).

1.38“**HPV CTL Development Plan**” shall have the meaning given in Section 2.6(a).

1.39“**HPV CTL Program**” shall have the meaning given in Section 2.6(a).

1.40“**HPV CTL Research Contribution**” shall have the meaning given in Section 2.6(b).

1.41“**IE1**” means the immediate [*] with CMV.

1.42“**Indication**” means any disease or condition, or sign or symptom of a disease or condition.

1.43“**Initial CMV Indication**” shall have the meaning given in Section 2.1(a).

1.44“**Initial EBV Indications**” shall have the meaning given in Section 2.1(a).

1.45“**Initial [*] Programs Budget**” shall have the meaning given in Section 2.6(f).

1.46“**Institute Background IP Improvements**” shall have the meaning given in Section 9.4.

1.47“**Institute Indemnitees**” shall have the meaning given in Section 12.1.

1.48“**Institute Inventions**” shall have the meaning given in Section 9.1.

1.49“[***] Programs**” shall have the meaning given in Section 2.6(a) of the License Agreement.

1.50“**Interim Reports**” shall have the meaning given in Section 8.1.

1.51“**Inventions**” shall have the meaning given in Section 9.1.

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1.52“**Joint Inventions**” shall have the meaning given in Section 9.2.

1.53“**Joint Steering Committee**” or “**JSC**” shall have the meaning given in Section 3.1.

1.54“**License Agreement**” means the Amended and Restated Exclusive License Agreement of even date herewith, by and between Institute and Atara.

1.55“**Licensed Products**” shall have the meaning given in the License Agreement.

1.56“**LMP1**” means latent membrane protein 1.

1.57“**LMP2**” means latent membrane protein 2.

1.58“**Losses**” shall have the meaning given in Section 12.1.

1.59“**Major Market**” shall have the meaning given in the License Agreement.

1.60“**Minimum Research Contribution**” shall have the meaning given in Section 4.2.

1.61“**MS**” shall have the meaning given in Section 2.1(a).

1.62“**MSK Agreement**” shall have the meaning given in the License Agreement.

1.63“**New CTL Products**” shall have the meaning given in Section 2.3(a).

1.64“**New Research Information Package**” shall have the meaning given in Section 2.3(b).

1.65“**New Research Programs**” shall have the meaning given in Section 2.3(a).

1.66“**New Research Proposal**” shall have the meaning given in Section 2.3(b).

1.67“**NHL**” shall have the meaning given in Section 2.1(a).

1.68“**NPC**” shall have the meaning given in Section 2.1(a).

1.69“**Option**” shall have the meaning given in the License Agreement.

1.70“**Other Work**” shall have the meaning given in Section 5.2.

1.71“**Principal Investigator**” means Professor Rajiv Khanna.

1.72“**Program**” means, on a Target-by-Target basis, any and all preclinical development, clinical development, manufacturing and commercialization activities with respect to any and all products directed to such Target. Programs include (a) the Allogeneic Programs, (b) the Autologous Programs and (c) any New Research Programs.

1.73“**Program [*]**” shall have the meaning given in Section 2.3(a).

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

1.74**"[*] Payment**" shall have the meaning given in Section 2.7(a)

1.75**"[*] Capacity**" shall have the meaning given in Section 2.7(a).

1.76**"[*] Period**" shall have the meaning given in Section 2.7(b).

1.77"**Regulatory Approval**" means with respect to a country or region, any and all approvals, licenses, registrations or authorizations of any Regulatory Authority necessary to commercially distribute, sell or market a product developed or commercialized under this Agreement or the License Agreement in such country or region, including, where applicable: (a) pre- and post-approval marketing authorizations; (b) labeling approval; and (c) technical, medical and scientific licenses, in each case necessary for commercial distribution, sale or marketing of such product in such country or region.

1.78"**Regulatory Authority**" means any Government Authority or other entity, in each case regulating or otherwise exercising authority with respect to the development, manufacturing or commercialization of a given product under this Agreement or the License Agreement in a given country or region, including the U.S. Food and Drug Administration (" **FDA**"), or any successor thereto, and the European Medicines Agency ("**EMA**"), or any successor thereto.

1.79"**Research Collaboration**" shall have the meaning given in Section 2.1.

1.80"**Research Milestone**" shall have the meaning given in Section 4.4(a).

1.81"**Research Milestone Payment**" shall have the meaning given in Section 4.4(a).

1.82"**Rules of Arbitration**" shall have the meaning given in Section 14.2.

1.83"**Target**" means an antigen expressed on or in a cell, including [*]. For clarity, a Target may be [*] (collectively, a single "**Target**"). Unless otherwise specified, where the antigen is naturally occurring, a Target [*]. For clarity, (a) where a CTL Product is [*] antigen expressed on or in a cell in association with [*], EBV and/or CMV, [*], and (b) where a CTL Product is [*] associated with a [*] on or in a cell in association with the presence of, or infection of such cell by, EBV and/or CMV, or [*] EBV and/or CMV, [*].

1.84"**Term**" shall have the meaning given in Section 15.1.

1.85"**Territory**" means worldwide.

1.86"**Third Party**" means any Person (as defined in the License Agreement) other than Institute, Atara or any of their respective Affiliates.

1.87**"[*] Milestone**" shall have the meaning given in Section 4.4(b).

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

1.88**"[*] Period**" shall have the meaning given in the License Agreement.

1.89**"[*] Milestone Payment**" shall have the meaning given in Section 4.4(b).

1.90**"[*] Budget**" shall have the meaning given in Section 2.6(f).

1.91**"[*] Development Plan**" shall have the meaning given in Section 2.6(e).

1.92"**Wind Down Activities**" shall have the meaning given in Section 15.5(b).

2. SCOPE OF THE COLLABORATION

2.1**Scope**. Pursuant to this Agreement, as further provided in this Article 2, during the Term:

(a) Atara and Institute shall collaborate to conduct the Allogeneic Programs as set forth in Section 2.2 and the Development Plan, with the intention of identifying and developing CTL Products Specifically Directed to (i) Targets expressed in association with EBV, including [*], and such other Targets as may be incorporated in the Development Plan, for use in the diagnosis, prophylaxis, treatment and palliation of (A) multiple sclerosis ("**MS**"), [*] (collectively (A) through [*] the "**Initial EBV Indications**") and such other Indications as may be incorporated in the Development Plan, and (ii) Targets expressed in association with CMV, including [*] and such other Targets as may be incorporated in the Development Plan, for use in the diagnosis, prophylaxis, treatment and palliation of [*] (the "**Initial CMV Indication**") and such other Indications as the Parties may mutually agree in the Development Plan;

(b) Institute shall use Commercially Reasonable Efforts to conduct the Autologous Programs, as set forth in the Development Plan, with the intention of (i) progressing the clinical development of Autologous CTL Products Specifically Directed to Targets expressed in association with EBV for the prophylaxis, treatment and palliation of [*] MS, and (ii) progressing the clinical development of Autologous CTL Products Specifically Directed to Targets expressed in association with CMV for the prophylaxis, treatment and palliation of primary and recurrent [*].

The foregoing activities, as well as any New Research Programs conducted by the Parties pursuant to Section 2.3, and activities conducted pursuant to the License Agreement, together, shall be the "**Research Collaboration**".

2.2**Conduct of the Research Collaboration**. The Research Collaboration shall be conducted at Institute under the supervision of the Principal Investigator and shall commence promptly after the

Original Effective Date. Institute shall use Commercially Reasonable Efforts to conduct the Autologous Programs, and the Parties shall use Commercially Reasonable Efforts to conduct the Allogeneic Programs, in accordance with all applicable laws, rules and regulations, the terms and conditions of this Agreement, the Development Plan attached as Schedule 1.26(A) and incorporated by reference herein, and in the case of the Allogeneic Programs under the supervision of the JSC. Institute will furnish the facilities, know-how, and technical skills necessary for performance of the Research Collaboration. Anything in this Agreement to the contrary notwithstanding, Atara and Institute may at any time amend the scope of the Research Collaboration, including the Development Plan, by mutual written agreement and such amendment shall be affixed to this Agreement as a new Schedule 1.26 (A).

2.3**New Research**.

(a) During the term of this Agreement, if either Party wishes to pursue a program of activities directed to (i)the research and development of pharmaceutical or biologic products comprising Autologous CTLs or Allogeneic CTLs, or [*], in each case Specifically Directed to Targets that are not associated with EBV and/or CMV ("**New CTL Products**"), or (ii) the research and development of [*] arising from the [*] Programs (the "**Program [*]**" as further defined in the License Agreement), (such research and development programs in (i) and (ii), each a "**New Research Program**"), such Party may propose to the JSC that such New Research Program is included within the scope of the Research Collaboration.

(b) If the Parties, through the JSC, agree that a New Research Program should be investigated with a view to inclusion within the Research Collaboration, Institute shall prepare and present a proposal (a "**New Research Proposal**") to the JSC for discussion. Any New Research Proposal shall include, at a minimum: (i) the Target(s) for such New CTL Products, (ii) a description of the proposed research and development activities, including an estimated timeline for such development, (iii) a good faith estimated budget for such development activities, (iv) a description of any material know-how, data, results or information in the possession and control of Institute that is necessary for Atara (and the JSC) to determine whether or not to pursue the New Research Program, and (v) a listing of the patent rights (including any such patent rights owned or controlled by any Third Party) that (A) cover or claim such New CTL Products or Program [*], or (B) Institute reasonably believes may be necessary or useful for the conduct of the proposed development activities, including in each case the owner or licensor under any Third

Party patent rights, and (vi) any other information that Atara or the JSC may request in order to make a decision as to whether or not to progress the New Research Program (the information and materials in (i) through (vi), the "**New Research Information Package**"). Any such New Research Proposal shall be presented to the JSC no less than thirty (30) days prior to the JSC meeting at which such New Research Proposal is to be considered.

(c) The JSC shall discuss any New Research Proposal at the next JSC meeting following the delivery by Institute of the New Research Information Package, and shall determine whether the Parties should include the New Research Program within the scope of the Research Collaboration. A Party may withhold its consent to inclusion of any New Research Program within the scope of the Research Collaboration at its sole discretion. If the Parties mutually agree to progress any New Research Program, the Parties shall consult to prepare a formal development plan and budget for such New Research Program for review and approval by the JSC (subject to Atara's final decision making right under Section 3.3(f)).

(d) If the Parties agree to conduct a New Research Program, then within sixty (60) days following the finalization of the development plan and budget for such New Research Program, the Parties shall amend the License Agreement to provide that any New CTL Products and/or Program [*] shall be included within the scope of Licensed Products, and subject to the licenses granted pursuant to the License Agreement, and to make any other necessary amendments to the License Agreement in order to effect such change to the scope of Licensed Products, including, in the case of the New Research Program(s) including the Program [*], amendments to the economic terms applicable to Licensed Products arising from such New Research Program(s). With the exception of such necessary amendments, all other terms and conditions of the License Agreement shall apply equally to any New CTL Product and the Program [*] as to any other Licensed Product, provided that (i) the Milestone Payments applicable to any such New CTL Product shall be those set forth in the third column under the heading "Research Milestone Payments" in the table in Section 4.4 of this Agreement and under the heading "Milestone Payments" in Section 4.3(a) of the License Agreement, and the Milestone Payments applicable to any such Program [*] shall be those set forth in the table in Section 4.4(b) of this Agreement and under the heading "Milestone Payments" in Section 4.3(a) of the License Agreement. Except for (A) any funding that Atara agrees to provide

for research and development activities to be conducted under any New Research Program pursuant to this Agreement, (B) amounts payable by Atara for any New Research Program including New CTL Products Specifically Directed to a Target that is associated with BK polyoma virus ("**BKV**"), [*] with BKV (a "**BKV Program**"), and (C) amounts payable by Atara for any New Research Program including the Program [*], no other consideration shall be payable by Atara for the foregoing amendment of the License Agreement and the grant by Institute to Atara of exclusive license rights in New CTL Products and/or Program [*] arising from such New Research Program.

(e) If Institute provides Atara with a New Research Information Package pursuant to this Section 2.3, and Atara does not wish to fund such research and development activities, or include such research and development activities within the scope of the Research Collaboration, then subject to the terms and conditions of this Agreement and the License Agreement (including Section 7 (Certain Covenants) thereof), Institute may (i) pursue the research and development of such New Research Program independently or with any Affiliate, and/or (ii) shall be free to discuss terms and conditions for the grant of rights to any Third Party to participate in the research, development and commercialization of the New CTL Products that are the subject of such New Research Program, without further obligation to Atara with respect to such New Research Program. For clarity, this subsection (e) shall not apply to any New Research Programs including the Program [*], which shall instead be subject to Section 2.6(e) below.

2.4**Diligence**. Each Party shall use Commercially Reasonable Efforts to conduct the Research Collaboration by performing the activities allocated to such Party pursuant to this Agreement and the Development Plan (including any activities relating to New Research Programs that the Parties mutually agree to include within the scope of the Research Collaboration).

2.5**Regulatory Activities**. Atara shall be solely responsible, at Atara's expense, for preparing all submissions to any regulatory authority and making all regulatory filings in the Territory in relation to CTL Products arising from (a) activities conducted with respect to the Allogeneic CTL Programs, (b) activities conducted with respect to the Autologous CTL Programs (solely following the exercise of the EBV Autologous Option and/or the [*] Option, as applicable, pursuant to Section 2.2 of the License Agreement), and (c) New CTL Products and Program [*] arising out of New Research Programs conducted hereunder, in each case in accordance with Section 5.5 of the License Agreement. Institute shall be solely responsible at Institute's expense, for preparing all submissions to any regulatory authority

and making all regulatory filings in the Territory in relation to CTL Products arising from activities conducted with respect to the Autologous CTL Programs prior to the exercise of the applicable Option pursuant to Section 2.2 of the License Agreement.

2.6**Specific New Research Programs.**

(a) **HPV CTL Program**. Following discussion through the JSC in accordance with Section 2.3, the Parties hereby agree to include a research and development program directed to the identification and further development of New CTL Products Specifically Directed to such Targets expressed in association with human papilloma virus ("**HPV**"), in such Indications as the Parties may mutually agree in writing from time to time (the "**HPV CTL Program**") as a New Research Program within the scope of this Agreement. The HPV CTL Program shall be deemed to be an Allogeneic Program. The Parties shall mutually agree upon a development plan for the HPV CTL Program (the "**HPV CTL Development Plan**"), which shall be added to and incorporated within the Development Plan attached to this Agreement as Schedule 1.26(A), once finalized. Any Licensed Products arising as a result of activities under the HPV CTL Research Program shall be subject to the Research Milestone Payments set forth in the third column of the table in Section 4.4(a).

(b) **HPV CTL Program Funding**. The HPV CTL Development Plan includes a mutually agreed budget (the "**HPV CTL Budget**"), which shall be added to and incorporated within the Development Plan Budget attached to this Agreement as Schedule 1.26(B). The Parties expect the HPV CTL Budget to cover all direct and indirect costs of the conduct of the HPV CTL Program during the first two (2) year period following the inclusion of the HPV CTL Program within the scope of this Agreement. Atara shall pay, during the first [*] following the Execution Date, an amount of up to [*] (the "**HPV CTL Research Contribution**") to be allocated against the costs set forth in the HPV CTL Budget, including (i) [*] allocated to activities under the HPV CTL Development Plan during the [*] of the HPV CTL Program, and (ii) [*] during the [*] of the HPV CTL Program. Institute shall use Commercially Reasonable Efforts to ensure that the FTEs assigned to perform activities under the HPV CTL Program devote at least [*] of their total working time to activities under the HPV CTL Development Plan, unless otherwise mutually agreed by the Parties. Without limiting the foregoing, the allocation of the HPV CTL Research Contribution to activities under the HPV CTL Program, and

the timing of payments to be made to Institute out of such amount are set forth in the HPV CTL Development Plan. The Parties may mutually agree upon changes to the HPV CTL Research Contribution (subject to Atara's final decision making authority under Section 3.3(f) with respect to any increase thereto), or changes in the allocation of the HPV CTL Budget to activities under the HPV CTL Development Plan.

(c) **BKV CTL Program**. Following discussion through the JSC in accordance with Section 2.3, the Parties hereby agree to include a BKV Program, in such Indications as the Parties may mutually agree in writing from time to time (the "**BKV CTL Program**") as a New Research Program within the scope of this Agreement. The BKV CTL Program shall be deemed to be an Allogeneic Program. The Parties shall mutually agree upon a development plan for the BKV CTL Program (the "**BKV CTL Development Plan**"), which shall be added to and incorporated within the Development Plan attached to this Agreement as Schedule 1.26(A), once finalized. Any Licensed Products arising as a result of activities under the BKV CTL Research Program shall be subject to the Research Milestone Payments set forth in the third column of the table in Section 4.4(a).

(d) **BKV CTL Program Funding**. The BKV CTL Development Plan includes a mutually agreed budget (the "**BKV CTL Budget**"), which is added to and incorporated within the Development Plan Budget attached to this Agreement as Schedule 1.12(B). The Parties expect the BKV CTL Budget to cover all direct and indirect costs of the conduct of the BKV CTL Program during the first [*] period following the inclusion of the BKV CTL Program within the scope of this Agreement. Atara shall pay, during the [*] following the Execution Date, an amount of up to [*] (the '**BKV CTL Research Contribution**") to be allocated against the costs set forth in the BKV CTL Budget, including (i) [* allocated to activities under the BKV CTL Development Plan during the [*] of the BKV CTL Program, and (ii) [*] during the [*] of the BKV CTL Program. Institute shall use Commercially Reasonable Efforts to ensure that the FTEs assigned to perform activities under the BKV CTL Program devote at least [*] of their total working time to activities under the BKV CTL Development Plan, unless otherwise mutually agreed by the Parties. Without limiting the foregoing, the allocation of the BKV CTL Research Contribution to activities under the BKV CTL Program, and the timing of payments to be made to Institute out of such amount are set forth in the BKV CTL Development Plan. The Parties may mutually agree upon changes to the BKV CTL Research Contribution (subject to Atara's final decision making authority under Section 3.3(f) with respect to

any increase thereto), or changes in the allocation of the BKV CTL Budget to activities under the BKV CTL Development Plan.

(e) **[*] Programs**. Following discussion through the JSC in accordance with Section 2.3, the Parties hereby agree to include the [*] Programs as a New Research Program within the scope of this Agreement. For the purposes of this Agreement the [*] Programs shall be deemed to be Allogeneic Programs. Within ninety (90) days following the Execution Date, Institute shall provide Atara with a development plan setting out the research and development activities to be conducted for each of the [*] Programs during the Option Period (the "[***] Development Plan**", and the "[***] Development Plan**", and collectively the "[***] Programs Development Plan**"), along with a mutually agreed budget for such activities, as further set forth in subsection (f) below. If Atara [*] for one or more of the [*] Program and/or the [*] Program pursuant to Section 2.6 of the License Agreement, such Program [*] will become Licensed Products, and such Licensed Products arising as a result of activities under the [*] Programs shall be subject to the Research Milestone Payments set forth in the table in Section 4.4(b).

(f) **[*] Program Funding**.

(i) The [*] Programs Development Plan shall include a mutually agreed budget for each of the [*] Program and the [*] Program (the "[***] Programs Budget**"), which the Parties expect to cover [*] of the conduct of the [*] Programs during the [*]Period. As of the Execution Date, the Parties have mutually agreed upon an initial budget for the [*] Programs covering the [*] of the [*] Period (the "**Draft [*] Programs Budget**"). Within ninety (90) days following the Execution Date, the Parties shall update the Draft [*] Programs Budget and shall agree upon a final budget for the conduct of the [*] Programs, which shall be incorporated as an amendment to the [*] Programs Development Plan upon such mutual agreement (the "[***] Programs Budget**").

(ii) Atara shall pay, during the [*] of the [*] Period, an amount of no less than [*], and no more than [*] (unless agreed otherwise by the Parties) to be allocated against the costs to be set forth in the *] Programs Budget, and thereafter, for each [*] of the [*] Period, [*] amount to be agreed by the Parties in accordance with subsection (iii) below, to be allocated against the costs set forth in the [* Budget (collectively the "[***] Research Contribution**"). Institute shall

use Commercially Reasonable Efforts to ensure that any FTEs assigned to perform activities under the [*] Programs devote at least [*] of their total working time to activities under the [*] Programs Development Plan, unless otherwise mutually agreed by the Parties. Without limiting the foregoing, the allocation of the [*] Programs Research Contribution to activities under each of the [*] Programs shall be at Institute's discretion, and the timing of payments to be made to Institute out of such amount are as set forth in Section 2.6 of the License Agreement. The Parties may mutually agree upon changes to the [*] Research Contribution (subject to Section 2.6(f)(iii) below with respect to the Vaccine Programs Budget after the [*] following the Effective Date, and to Atara's final decision making authority under Section 3.3(f) with respect to any other increase thereto), or changes in the allocation of the [*] Budget to activities under the [*] Development Plan.

(iii) No later than [*] months following the Execution Date, the Parties shall discuss in good faith through the JSC and mutually agree upon an updated [*] Development Plan and an updated [*] Budget to cover at least the next [*] of research and development activities under the [*] Programs. Thereafter, the Parties shall update the [*] Development Plan and the [*] Budget at least annually. If, at any time during the term of this Agreement, the Parties are unable to agree upon either the content of the updated [*] Development Plan or the updated [*] Budget, then (A) Institute shall have the final decision with respect to the [*] Development Plan, and (B) Atara shall have the final decision with respect to the amount of the [*] Research Contribution to be provided by Atara to fund activities during the applicable time period, provided that in no event shall the [*] Research Contribution funded by Atara in any twelve (12) month period for which the [*] Budget is in dispute be less than the greater of (x) the highest amount offered by Atara by way of [*] Research Contribution during such failed negotiations for the applicable twelve (12) month period, and (y) the amount funded by Atara for the [*] Research Contribution for the most recent twelve (12) month period.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

2.7 **[*] Manufacturing Support**.

(a) In addition to the funding provided by Atara for the BKV CTL Program, the HPV CTL Program and [*] Programs set forth in Section 2.6, Atara shall pay to Institute a one-off lump-sum payment of *] (the "[* **]Payment**"), which is to be used by Institute for [*] of the [*] (the "[***] Capacity**"). The [*] shall be used by Institute to provide manufacturing and related services to support activities under all Programs included within the Development Plan, including the BKV CTL Program, the HPV CTL Program and [*] Programs and any other New Research Programs that may be added to this Agreement from time to time.

(b) In consideration for the [*] Payment, until Institute has [*] necessary for the conduct of (a) [*] (as defined in the License Agreement) and (b) all other [*] set forth in the Development Plan that are [*] the first Licensed Product (including, for clarity, each of (i) the first EBV-Specific CTL Product, (ii) the first CMV-Specific CTL Product, (iii) the first HPV-Specific CTL Product, and (iv) the first BKV-Specific CTL Product) arising from activities under the Research Agreement (the "[***] Period**"), Institute shall utilize the [*] Capacity for manufacturing activities required under the Development Plan (including the Amendment New Programs and any other New Research Programs in accordance with the following protocol.

(c) During the [*] Period, on a calendar quarterly basis Atara will issue to Institute in good faith rolling forecasts (each, an "**Atara Forecast**") of its requirements for use of the [*] Capacity for the following six months (the "**Atara Forecast Quantity**"). During the [*] Period, the [*] Capacity shall be used first to manufacture any amounts included in the Atara Forecast Quantity before it can be used for manufacturing services for any Third Party. If Institute wishes to utilize the [*] Capacity for any other activities during the [*] Period, including the performance of activities for Third Parties and/or outside the scope of the Programs included within the Development Plan, it may do so to the extent that such use is not allocated to the Atara Forecast Quantity, provided that Institute shall first obtain Atara's prior written consent to the use of such excess capacity, not to be unreasonably withheld or delayed. Without limiting the foregoing, Institute may not offer the [*] Capacity to any Third Party for services outside any time period covered by an Atara Forecast without Atara's prior written consent, which consent may not be unreasonably withheld or delayed.

3. **GOVERNANCE**.

3.1**Management**. Within fifteen days (15) days after the Original Effective Date, the Parties shall establish a cross-functional, joint steering committee (the "**Joint Steering Committee**" or the "**JSC**") which shall oversee the research collaboration between the Parties, including Allogeneic CTL Programs, Autologous Programs (solely following the exercise of the applicable Option pursuant to Section 2.2 of the License Agreement), and any agreed New Research Programs conducted under this Agreement and the License Agreement. In the case of the Autologous Programs prior to the exercise of the applicable Option, Institute shall report to the JSC (including prior to exercise of the EBV Autologous Option or the [*] Option) but the JSC shall have no power to vary or supervise such programs.

3.2**Alliance Managers**.

(a) Each of Atara and Institute shall appoint one representative who possesses an understanding of development, regulatory, manufacturing and commercialization matters to act as its respective alliance manager(s) for this relationship (an "**Alliance Manager**"). Each Party may replace its respective Alliance Manager at any time upon written notice to the other in accordance with this Agreement. Any Alliance Manager may designate a substitute to temporarily perform the functions of that Alliance Manager. Each Alliance Manager shall be charged with creating and maintaining a collaborative work environment within the JSC. Consistent with the Development Plan, each Alliance Manager, will also be responsible for (i) providing a primary single point of communication responsible for the flow of communication and for seeking consensus (both within such Party's organization and with respect to activities under this Agreement or the License Agreement) regarding key strategy and plan issues, and (ii) identifying and raising disputes to the JSC for discussion in a timely manner; and

(b) Each Alliance Manager shall have the right to attend all subcommittees meetings, as a non-voting member. Each Alliance Manager may bring any matter to the attention of the JSC where such Alliance Manager reasonably believes that such matter requires attention of the JSC. Within thirty (30) days after the Original Effective Date, each Party shall appoint and notify the other Party of the identity of their representative to act as its Alliance Manager under this Agreement.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

3.3 **Joint Steering Committee**.

(a) Composition. The Joint Steering Committee shall be comprised of two (2) named representatives of each Party (or such other number as the Parties may agree) in addition to each Party's Alliance Manager who are members ex-officio. The JSC will be led by two (2) co-chairs, one (1) appointed by each of the Parties. Within forty five (45) days after the Original Effective Date, each Party shall designate by written notice to the other Party its initial representatives on the JSC. Each Party may replace one or more of its representatives, in its sole discretion, effective upon written notice to the other Party of such change.

(b) Function and Powers of the JSC. The JSC shall, in line with the terms and conditions set forth in the Agreement:

(i) define the scope of the research and development activities to be conducted under this Agreement, including by reviewing and approving the initial Development Plan, and each update to the Development Plan and associated Budget, and review progress against the goals in such Development Plan;

(ii) discuss and agree upon the allocation of the Budget, including the Minimum Research Contribution, to activities under the Development Plan;

(iii) discuss and comment on updates provided by Institute in relation to the Autologous Programs;

(iv) review and discuss proposals for new Indications for Licensed Products to be included within the activities under the Development Plan;

(v) review and discuss potential Targets for consideration as potential New Research Programs;

(vi) consider, discuss and make recommendations with respect to proposals for New Research Programs;

(vii) discuss Atara's regulatory strategy for IND filing for CTL Products ;

(viii) validate and back up the intellectual property strategy;

(ix) review and track publications and proposed publications, and coordinate review and comments on proposed publications by each Party;

(x) establish subcommittees, as appropriate, and support the operation of such subcommittees, including by seeking to resolve disputed matters that may arise at the subcommittees;

(xi) assume a general role of leadership in the collaboration;

(xii) perform any and all tasks and responsibilities that are expressly attributed to the JSC under this Agreement.

Notwithstanding the foregoing roles and responsibilities, unless expressly set forth in this Agreement or the License Agreement, the JSC shall serve solely as a forum for information exchange with respect to any matters that relate to (i) regulatory matters, including the regulatory strategy and filings for Regulatory Approvals in the Territory, (ii) commercialization of CTL Products (whether or not arising out of this Agreement), (iii) changes to the Minimum Research Contribution or the Budget for activities under the Development Plan with respect to Allogeneic CTL Programs or New Research Programs, and (iv) subject to Article 13 of the License Agreement, intellectual property strategy, including prosecution, maintenance and enforcement activities.

(c) Frequency of Meetings. The JSC shall meet at least once per quarter or more or less often as otherwise agreed by the Parties, and such meetings may be conducted by telephone, videoconference or in person as determined by the co-chairs, provided that no less than two (2) meetings during each calendar year shall be conducted in person. The first meeting shall be no later than thirty (30) days after the Original Effective Date. As appropriate, and provided that not less than two (2) business days' prior written notice has been given to the other Party, other employees of the Parties may attend Joint Steering Committee meetings as observers, but a Party shall not bring a Third Party to a meeting without the other Party's prior consent. Each Party may also call for special meetings of the JSC with reasonable prior written notice (it being agreed that at least five (5) business days shall constitute reasonable notice) to resolve particular matters requested by such Party and within the decision-making responsibility of the JSC. Each co-chair shall ensure that its JSC members receive adequate notice of such meetings. Each Party shall be responsible for all of its own expenses incurred in connection with participating in all such meetings.

(d) Subcommittees. The JSC may establish and disband such subcommittees as deemed necessary by the JSC. Each such subcommittee shall consist of the same number of

representatives designated by each Party, which number shall be mutually agreed by the Parties. Each Party shall be free to change its representatives on written notice to the other Party or to send a substitute representative to any subcommittee meeting. Each Party's representatives and any substitute for a representative shall be bound by the obligations of confidentiality set forth in Article 6. Except as expressly provided in this Agreement, no subcommittee shall have the authority to bind the Parties hereunder and each subcommittee shall report to the JSC. Each Party shall be responsible for all of its own expenses incurred in connection with participating in all such meetings.

(e) Cooperation. Each Party shall provide the JSC such information as required under the Development Plan, or as reasonably requested by the other Party and reasonably available, relating to the progress of the goals or performance of activities under the Development Plan.

(f) Decisions. Other than as set forth herein, in order to make any decision required of it hereunder, the JSC must have present (in person, by videoconference or telephonically) at least the co-chair of each Party (or his/her designee for such meeting). Decisions of the JSC shall be by consensus, with each Party having one (1) vote. If the JSC cannot reach consensus or a dispute arises which cannot be resolved within the JSC within [*], the co-chair of either Party may cause such dispute to be referred to the Designated Executive Officers for resolution within [*]. In the event that consensus cannot be reached with respect to a decision after a meeting of the Designated Executive Officers, then, (i) if the decision relates to (A) commercialization of any CTL Product, New CTL Product or [*] that has been included within the License Agreement pursuant to Section 2.3(d), including regulatory strategy for any such CTL Products, New CTL Products or [*], (B) changes to the Development Plan that would require a material change in the scope of activities for any Program thereunder, or an increase in the Budget for development activities relating to the Allogeneic CTL Programs or the Autologous CTL Programs (following the exercise of an Option therefor, including any increase in the Minimum Research Contribution pursuant to this Agreement (where Atara has not previously authorized such increase), or (C) the scope of research and development activities under, or budget for, any New Research Program, including whether or not to include such New Research Program within the Research Collaboration, the final decision will be made by [*], and (ii) if the decision relates to changes to the Development Plan that would require a material change in the scope of activities for any Autologous Program thereunder, or an increase in the Budget for

development activities relating to any Autologous Programs (prior to the exercise of an Option therefor), the final decision will be made by the [*]. If a dispute arises which cannot be resolved by a subcommittee, the co-chair of either Party may cause such dispute to be referred to the JSC for resolution.

(g) Exceptions. Notwithstanding the foregoing, (i) [*] may not use its final decision making authority to require [*] to the Research Collaboration, without [*] prior written consent, and (ii) neither Party in exercising its right to finally resolve a dispute pursuant to Section 3.3(f) shall have any power to (A) cause the other Party to violate any Applicable Law or to breach any agreement between such other Party and any Third Party, or (B) to amend, modify, or waive compliance with the terms of this Agreement.

(h) Authority. The JSC and any subcommittee shall have only the powers assigned expressly to it in this Article 3 and elsewhere in this Agreement, and shall not have any power to amend, modify or waive compliance with this Agreement. In furtherance thereof, each Party shall retain the rights, powers and discretion granted to it under this Agreement and no such rights, powers or discretion shall be delegated or vested in the JSC or subcommittee unless such delegation or vesting of rights is expressly provided for in this Agreement or the Parties expressly so agree in writing.

(i) Discontinuation of JSC. The JSC shall continue to exist until the first to occur of (i) the Parties mutually agreeing to disband the JSC or (ii) until the termination or expiration of the License Agreement.

4. BUDGET; MILESTONES; PAYMENT

4.1**Autologous Programs**. Prior to the exercise of an Option, Institute shall conduct the applicable Autologous Programs (for which the Option has not been exercised) at Institute's expense, in accordance with the activities set forth in the Development Plan with respect to such Autologous Programs.

4.2**Budget**. Atara shall pay Institute the amounts set forth in the mutually agreed upon budget set forth in Schedule 1.26(B) (the "Budget"), incorporated herein, to cover all direct and indirect costs of the Allogeneic Programs, excluding (a) any New Research Programs, which shall be subject to a separate budget and funding to be mutually agreed by the Parties, and (b) the [*] Programs, for which budget and funding shall be subject to Section 2.6(f). The Budget shall include, and Atara shall pay, during the first [*] following the Original Effective Date, a minimum payment of [*] (the "**Minimum Research Contribution**"). The allocation of the Minimum Research Contribution to activities under the Research

Collaboration, and the timing of payments to be made to Institute out of such amount are set forth in the Development Plan. The Parties may mutually agree upon changes to the Minimum Research Contribution (subject to [*] final decision making authority under Section 3.3(f) with respect to [*] thereto), or changes in the allocation of the Budget to activities under the Development Plan.

4.3**Changes to the Budget**. During the term of this Agreement, the Parties may discuss, subject to [*] final decision making authority pursuant to Section 3.3(f) with respect to the Research Collaboration and any New Research Programs other than the [*] Programs, increases to the Budget for the Research Collaboration (or to any budget for any New Research Program), which may include, without limitation, increases in the number of Institute FTEs allocated to perform activities hereunder. For clarity, any budget increases for the [*] Programs shall be subject to Section 2.6(f)(iii). As of the Execution Date, the Parties have mutually agreed upon a revised Budget for the CMV CTL Program and the EBV CTL Program, which excludes [*] and is attached to this Agreement as an amended Schedule 1.26(B) in an aggregate amount of [*] over the first [*] of the Research Collaboration.

4.4 **Research Milestones**.

(a) As additional consideration for Institute entering into this Agreement and diligently progressing the activities under the Research Collaboration in accordance with this Agreement, Atara will pay to Institute the research milestone payments (each, a "**Research Milestone Payment**") set forth in the table below for each Allogeneic CTL Product and/or Autologous Product (as applicable pursuant to the table set forth below) to achieve the corresponding milestone (each, a "**Research Milestone**"), whether achieved by Institute, Atara or an Affiliate or sublicensee of Atara. The Party achieving such Research Milestone shall promptly notify the other Party in writing of the achievement of any such Research Milestone and Atara shall pay Institute in full the corresponding Research Milestone Payment within [*] of such achievement. For clarity, each Research Milestone Payment is payable once only for each Allogeneic CTL Product and once for each Autologous CTL Product, and each Research Milestone Payment is non-refundable, and is not an advance against royalties due to Institute or any other amounts due to Institute.

	Research Milestone Trigger Event	Research Milestone Payment		
		CTL Product Specifically Directed to [*]	CTL Product Specifically Directed to [*]	Licensed Product Arising Directly From Activities under New Research Programs
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]

*Milestone payable only once with respect to each Allogeneic Licensed Product to achieve such Milestone.

**Milestone payable once for each Allogeneic CTL Product and for each Autologous CTL Product to achieve such Research Milestone.

(b) As consideration for Institute entering into this Agreement and diligently progressing the activities under the Research Collaboration with respect to the Institute [*] Programs in accordance with this Agreement, Atara will pay to Institute:

(i) a fixed fee of two million five hundred thousand dollars ($2,500,000) within fifteen (15) business days following the Execution Date (which fee is non-refundable and non-creditable against any other amounts due under this Agreement), and

(ii) the following milestone payments with respect to research and development activities conducted under the [*] Programs (each, a "[*] **Milestone**

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Payment") set forth in the table below for each[*] to achieve the corresponding milestone (each, a "[***] Milestone**"), whether achieved by Institute, Atara or an Affiliate or sublicensee of Atara. The Party achieving such [*] Milestone shall promptly notify the other Party in writing of the achievement of any such [*] Milestone and Atara shall pay Institute in full the corresponding [*] Milestone Payment within [*] days of such achievement. For clarity, each [*] Program Milestone Payment is payable once only for the [*] and once only for the [*] to reach the applicable milestone event, and each [*] Program Milestone Payment is non-refundable, and is not an advance against royalties due to Institute or any other amounts due to Institute.

	[*] Milestone Trigger Event	**[*]**	**[*]**
[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]

(c) Unless a Research Milestone Payment or [*] Program Milestone Payment is specified as payable for more than one Indication in the tables in (a) and (b) above respectively, each Research Milestone Payment and [*] Program Milestone Payment will be payable by Atara only once, following the first time a given CTL Product or [*], as applicable, developed under this Agreement achieves the specified Research Milestone or [*] Milestone. For example, with respect to the Research Milestone Payments, Research Milestone 2 in the table above shall be payable for a given Allogeneic CTL Product upon the first dosing of a patient in a Phase II Clinical Trial in for treatment of [*], but shall not be payable for such Allogeneic CTL Product for any subsequent Phase II Clinical Trial in [*] (in any country), or for NPC (in any country).

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(d) Each time a Research Milestone or [*] Milestone (as applicable) is achieved, then any other Research Milestone Payments with respect to earlier Research Milestones or [*] Program Milestone Payments with respect to earlier [*] Milestones that have not yet been paid will be due and payable together with the Research Milestone Payment for the Research Milestone, or [*] Program Milestone Payments for the [*] Milestone, as applicable, that is actually achieved.

(e) If Atara exercises the Option (as defined in the License Agreement), and with respect to a given CTL Product developed or commercialized under this Agreement or the License Agreement and a given Indication, elects to progress the development and commercialization of an Autologous CTL Product in lieu of an Allogeneic CTL Product for such Indication, then (i) following the decision to progress development and commercialization of such Autologous CTL Product, Atara shall owe all subsequent Research Milestone Payments due for such Autologous CTL Product, and (ii) subsection (c) shall apply solely with respect to any Research Milestone Payments that are applicable to both Autologous CTL Products and Allogeneic CTL Products, and have not already been paid for the Allogeneic CTL Product.

4.5 **Other Payments**.

(a) Atara shall pay the Minimum Research Contribution (and any other amounts agreed to by Atara and included in the Budget, including the HPV CTL Research Contribution and BKV CTL Research Contribution) to Institute on a Calendar Quarterly basis in advance, based on the allocation of such Minimum Research Contribution (or such other amounts, including the HPV CTL Research Contribution and BKV CTL Research Contribution) to activities under the Development Plan for the applicable Calendar Quarter. Institute shall submit invoices to Atara on a Calendar Quarterly basis, no later than [*] prior to the last day of each Calendar Quarter, setting forth the amounts payable for the upcoming Calendar Quarter and the activities to which such amounts are allocated under the Development Plan. The first invoice shall be due under this Agreement no later than thirty (30) days following the Original Effective Date. Each invoice shall be signed by an authorized official of Institute. Atara shall make payment by wire transfer to Institute's nominated bank account.

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(b) Atara shall pay the [*] Programs Research Contribution (and any other amounts agreed to by Atara and included in the [*] Programs Budget) as set forth in Section 2.6(c) and (d) of the License Agreement.

(c) Atara shall pay the [*] Payment set forth in Section 2.7 within fifteen (15) business days following the Execution Date.

5. PRINCIPAL INVESTIGATOR AND PERSONNEL

5.1 **Principal Investigator.** For the purpose of this Agreement and pursuant to Institute policy, Principal Investigator shall be responsible for the administration, direction, and content of the Research Collaboration, including expenditures under the Budget, and revisions to the allocation and individual expenditures within the overall framework, and subject to the overall cap, of the Budget, in each case necessary to accomplish the Research Collaboration. Should the Principal Investigator leave Institute or otherwise become unavailable during the term of this Agreement, Institute may nominate a replacement. In the event that the Principal Investigator becomes unable or unwilling to continue the Research Collaboration, and a substitute reasonably acceptable to Atara is not available, Atara shall have the right to terminate the Research Collaboration and this Agreement by giving written notice to Institute.

5.2 **Other Commitments.** Except as otherwise agreed, it is further understood that Institute and the personnel performing the Research Collaboration may be or become involved in other activities and projects which entail commitments to other Third Parties ("**Other Work**"). The Principal Investigator and the personnel performing the Research Collaboration will use Commercially Reasonable Efforts to progress the Research Collaboration in accordance with terms of Exhibit A, including any timelines set forth therein. Institute and the personnel performing the Research Collaboration will each use their best efforts to avoid conflicts with the terms and obligations of this Agreement. The Principal Investigator will provide Atara with written notice as soon as practicable if he becomes aware of a conflict or potential conflict that may materially impose upon his ability to perform activities under the Development Plan and this Agreement. Nothing in this Agreement shall be construed to limit the freedom of Institute, or their researchers who are not participants in the Research Collaboration under this Agreement, from engaging in Other Work made under other agreements with other parties than Atara. Notwithstanding the foregoing, Institute and the Principal Investigator shall use all reasonable efforts to distinguish the research performed in connection with the Research Collaboration under this Agreement from all Other Work, and shall keep records pertaining to such Other Work separately from the records to be maintained pursuant to Article 8.

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6. CONFIDENTIALITY

6.1**Confidential Information**. Atara and Institute will treat and maintain the other Party's Confidential Information in confidence using at least the same degree of care as the receiving Party uses to protect its own proprietary and confidential information of a like nature from the date of disclosure until [*] after the termination or expiration of this Agreement, provided that a Party may designate one or more specific, defined items of Confidential Information as 'Trade Secret', by giving written notice to the other Party briefly outlining its reasons why longer protection is warranted, and in such case the other Party shall protect such information indefinitely unless and until Section 6.4 applies. Confidential Information can be written, oral, or both.

6.2**Relationship to Existing Confidentiality Agreement**. This Agreement supersedes that certain Confidential Disclosure Agreement entered into between Atara and Institute, dated May 28, 2015 (the "**Existing Confidentiality Agreement**"); provided that all "Confidential Information" disclosed by the disclosing party thereunder shall be deemed Confidential Information of the disclosing Party hereunder and shall be subject to the terms and conditions of this Agreement and the receiving party thereunder shall be bound by and obligated to comply with such terms and conditions as if they were the receiving Party hereunder. The foregoing shall not be interpreted as a waiver of any remedies available to the disclosing party as a result of any breach, prior to the Original Effective Date, by the receiving party, respectively, of its obligations pursuant to the Existing Confidentiality Agreement.

6.3**Permitted Disclosure**. Atara and Institute may use and disclose the other Party's Confidential Information to their Affiliates, employees, agents, consultants, contractors, and, in the case of the Atara, its Sublicensees, in each case on a need to know basis for the purposes of such Affiliates, Sublicensees and Third Parties performing activities under this Agreement or the License Agreement, provided that such parties are bound by a like duty of confidentiality as that found in this Article 6. Furthermore, Atara may disclose Institute's Confidential Information to: (a) Atara's potential or actual collaborators, partners, licensees and Sublicensees, and (b) potential or actual investment bankers, acquirers, lenders or investors, and (c) advisors of Atara or any of the foregoing in (a) and (b); each of whom, prior to disclosure, must be bound by similar obligations of confidentiality and non-use as set forth in this Article 6.

6.4**Limitations**. Nothing contained herein will restrict or impair, in any way, the right of Atara or Institute to use or disclose any of the other Party's Confidential Information:

(a) that recipient can demonstrate by written records was previously known to it prior to its disclosure by the disclosing Party;

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(b) that recipient can demonstrate by written records is now, or becomes in the future, public knowledge other than through acts or omissions of recipient;

(c) that recipient can demonstrate by written records was obtained lawfully and without restrictions on the recipient from sources independent of the disclosing Party; and

(d) that a Party is required to disclose pursuant to applicable law, rule or regulation.

6.5**Other Disclosures**. Atara or Institute also may disclose Confidential Information that is required to be disclosed: (i) to a governmental entity or agency in connection with seeking any governmental or regulatory approval, governmental audit, or other governmental contractual requirement; or (ii) by law, provided that the recipient uses reasonable efforts to give the Party owning the Confidential Information sufficient notice of such required disclosure to allow the Party owning the Confidential Information reasonable opportunity to object to, and to take legal action to prevent, such disclosure. Notwithstanding anything to the contrary in this Agreement, Atara may disclose Confidential Information it receives pursuant to this Agreement, to its actual or potential investors, acquirors, advisors, Sublicensees, consultants and employees who are bound by obligations of confidentiality with respect thereto.

6.6**Return of Information**. Upon expiration or termination of this Agreement (unless the License Agreement remains in effect), or the request of the disclosing Party, if earlier, Atara and Institute will destroy or return any of the disclosing Party's Confidential Information in its possession within [*] following the termination of this Agreement and provide each other with prompt written notice that such Confidential Information has been returned or destroyed. Each Party may, however, retain one (1) copy of such Confidential Information for archival purposes in non-working files. If the License Agreement remains in effect as of the date of termination or expiration of this Agreement, then all Confidential Information disclosed pursuant to this Agreement, if not returned or destroyed at the disclosing Party's request pursuant to this Section 6.6, shall be deemed Confidential Information subject to the terms and conditions of Article 22 of the License Agreement.

7. PUBLICATION

7.1**Publication.** Either party, consistent with academic standards, may publish or present the Data (as defined in Article 8 below), provided such publication or presentation does not disclose the other party's Confidential Information. The Parties agree that any publication or presentation of Data shall appropriately cite the contributions of both Parties, using customary standards of scientific attribution. Each Party shall provide the other Party with a copy of such publication or presentation [*] prior to submission for presentation or publication to permit protection of any Confidential Information and/or

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patent rights, if desired and applicable. The other Party shall have [*], after receipt of said copies, to object to such proposed presentation or proposed publication because it includes patentable subject matter which needs protection or because it includes Confidential Information of such other Party. In the event that the other Party makes such objection, the publishing party shall refrain from making such publication or presentation for a maximum of [*] from date of receipt of such objection in order to allow the other Party to seek patent protection on any patentable Inventions included in the proposed publication or presentation, and the publishing Party shall remove the other Party's Confidential Information from such publication or presentation before submitting or presenting it to any Third Party. Atara further agrees that Institute shall have the first right to publish any results of the Research Collaboration, pursuant to the terms of this Article 7. In the case of Confidential Information of Atara being results of the Research Collaboration, Institute may publish a publication or presentation containing such information after taking into account any comments by Atara in good faith and after allowing Atara to seek patent protection in accordance with this Section 7.1, unless Atara (acting reasonably) designates such information as a 'Trade Secret'.

7.2**No Use of Names.** Neither Party will use the name of the other Party or its employees in any advertisement, press release, or other publicity without prior written approval of the other Party.

8. REPORTS; RIGHTS IN DATA

8.1**Reporting.** Each Party shall, in accordance with its established practice, keep complete and accurate records of the work performed under this Agreement, including all expenditures under the Budget. Institute shall provide Atara with a written report, prior to any meeting of the JSC, or at such other frequency as is mutually agreed to by the Parties (the "**Interim Reports**"). Such reports shall set forth, at a minimum: (a) the activities performed and to be performed under the Development Plan, (b) results generated during the conduct of the Research Collaboration, (c) any CTL Products, New CTL Products or [*] identified, (d) the quality and quantity of any materials (including without limitation biological or chemical compounds or raw materials) transferred by either party for the purposes of progressing the Research Collaboration and (e) material expenditures of funds under the Budget, and (f) subject to any obligations of confidentiality to any Third Party, a summary of activities of Atara and its Affiliates relevant to the research and development of CTL Products outside the Research Collaboration, excluding information regarding Atara's activities under the MSK Agreement. Institute shall provide a comprehensive final written report of all activities conducted, and all results and data generated (collectively "**Data**") under the Autologous Programs, the Allogeneic Programs, and any New Research Programs within ninety (90) days after termination of this Agreement ("**Final Report**"). During the

course of the Research Collaboration, Atara's representatives may consult informally with the Principal Investigator at his or her discretion and convenience regarding the Research Program. Atara shall also be required to provide Interim Reports in accordance with this Section 8.1, on a Program-by-Program basis: (i) for the Allogeneic Programs, following completion of Phase I Clinical Trials for the applicable Allogeneic Program(s), and (ii) for the Autologous Programs, in consultation with Institute, following Atara's exercise of the EBV Autologous Option or the [*] Option.

8.2**Rights in Data.** Institute shall own all Interim Reports and the Final Report, and information and data contained therein or arising from the activities conducted under this Agreement and the Development Plan. Subject to the provisions of Articles 6 and 7, Atara shall have the unencumbered right to use the Interim Reports and the Final Report, and any and all information and Data contained therein for any and all purposes, including the right to reference such Data and information in any regulatory filings in relation to any CTL Product, New CTL Product or Program [*] under this Agreement or the License Agreement, and shall have the right to grant or sublicense to others the right to so use and reference such Data and information.

9. INTELLECTUAL PROPERTY

9.1**Ownership.** With the exception of the rights granted to Institute to perform its obligations under this Agreement, and the rights granted to Atara pursuant to the License Agreement, each Party shall retain all right, title and interest in and to its Background IP. Except as provided in Section 9.4, inventorship/authorship of all patents, copyrights, trade secrets and other intellectual property rights, in and to all tangible materials (including without limitation all biological materials), inventions, discoveries, and software conceived or first made in the performance of the Research Collaboration under this Agreement ("**Inventions**") will be determined in accordance with U.S. patent/copyright law, such that all Inventions that are conceived or made solely by one or more employees of Atara in the course of the Research Collaboration and are not Improvements ("**Atara Inventions**") shall be owned solely by Atara and all Inventions which are conceived or made solely by one or more employees of Institute in performance of Research Collaboration and are not Improvements ("**Institute Inventions**") shall be solely owned by Institute.

9.2**Joint Inventions.** Inventions that are jointly conceived or reduced to practice by one or more employees, consultants or contractors of each Party, shall be jointly owned by the parties (each such invention, a "**Joint Invention**"). Ownership of all Inventions shall vest in the party to whom the inventor has an obligation of assignment. Institute will obtain agreements securing the assignment to Institute of all Inventions and intellectual property rights from the Principal Investigator and all employees, other

agents and consultants who perform any part of the Research Collaboration at Institute that are necessary to enable Institute to grant to Atara all rights Institute purports to grant under this Agreement and the License Agreement. Subject to the terms and conditions of the License Agreement, including any exclusive licenses granted thereunder (for such time as such licenses have effect), each Party shall have all rights under any jointly owned patent, patent application or other form of intellectual property protection relating to any Joint Invention to use, research, develop, and commercially exploit such Joint Invention and to license and sublicense Third Parties (through multiple tiers of sublicensing) to do so.

9.3**Inclusion within the License Agreement**. All Institute Inventions arising under this Agreement shall be automatically included, upon their creation, within the Patent Rights and Know-How Rights under the License Agreement, and shall be subject to the terms and conditions of the License Agreement, including the licenses granted to Atara therein, provided that for clarity, Atara shall only have rights to practice under any such Institute Inventions in relation to (a) EBV-Specific Autologous Products following Atara's exercise of the EBV Autologous Option in accordance with Sections 2.2(a)(i), 2.2(b) and 2.2(c) of the License Agreement, (b) [*] Autologous Products following the exercise of the [*] Option in accordance with Sections 2.2(a)(ii), 2.2(b) and 2.2(c) of the License Agreement, (c) [*] of the License Agreement, and (d) [*] of the License Agreement.

9.4**Improvements to Background IP**. Notwithstanding Sections 9.1 and 9.2, Institute shall be the sole owner of any Inventions that are claimed or covered by patents and patent applications claiming priority to any patent or patent application included in the Patent Rights, as such Patent Rights exist as of the Original Effective Date (such Inventions, the "**Institute Background IP Improvements**"). Atara shall assign, and hereby assigns to Institute, all of Atara's right, title and interest in and to the Institute Background IP Improvements. Without limiting the foregoing, Institute Background IP Improvements shall be included, upon their creation by either Party (or assignment by Atara to Institute in accordance with this Section 9.4, if applicable), within the Patent Rights, and shall be subject to the terms and conditions of the License Agreement, including the licenses granted therein.

9.5**Option to License Atara IP**. In addition to such rights of reversion as are contained in the License Agreement, Atara will, prior to granting or offering to grant to any Third Party any license or other right to research, develop or commercially exploit any Atara Invention, first discuss with Institute in good faith for a period of not less than [*] whether, and on what terms, Institute may wish to use or license such Atara Invention in fields or applications not the subject of the License Agreement.

9.6**Disclosure.** Institute will require the Principal Investigator and other investigators to promptly disclose all Inventions and Joint Inventions generated during the term of this Agreement to Institute's

Business Development Office in accordance with Institute policy with respect to ownership and disclosure of Inventions (and Joint Inventions). Institute or the Business Development Office of Institute , as applicable, will notify Atara promptly in writing following disclosure of a Institute Invention by any inventor, and disclose in confidence to Atara all Institute Inventions, including sufficient detail to enable Atara to evaluate such Institute Invention.

9.7**Patent Filings.**

(a) Joint Inventions. Institute will use reasonable efforts to ensure that Atara has the first opportunity to file a patent application or application for other intellectual property protection on any Joint Inventions. Institute's rights in any Joint Invention shall be automatically included within the Know-How Rights or the Patent Rights, as applicable, under the License Agreement, and shall be subject to all of the terms and conditions of the License Agreement. Atara's prosecution and maintenance of any patents and patent applications arising from Joint Inventions shall be conducted in accordance with Section 13.2 of the License Agreement. If Atara elects not to file a patent application or application for other intellectual property protection on any Joint Inventions, or decides that it does not wish to provide financial support for the prosecution or maintenance of the protection for such Joint Inventions, Institute shall thereafter be free to file or continue prosecution or maintain any such application(s), and to maintain any protection issuing thereon in the U.S. and in any foreign country at Institute's sole expense and with no further obligation to Atara, and such patent or patent application shall not be included within the Patent Rights under the License Agreement.

(b) Inventions. Section 13.2 of the License Agreement shall apply to all filing, prosecution and maintenance of any patents and patent applications arising from Institute Inventions and Institute Background IP Improvements. Atara shall have the sole right, but not the obligation to file, prosecute and maintain patents and patent applications arising from the Atara Inventions.

9.8Except as expressly provided herein or in the License Agreement, nothing contained in this Agreement shall be deemed to grant either directly or by implication, estoppel, or otherwise any license under any patents, patent applications, or other proprietary interests to any other invention, discovery, or improvement of either Party.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

10. EXCHANGE OF MATERIALS

All materials, including any CTLs, including progeny and modified or unmodified derivatives, exchanged pursuant to this Agreement shall remain the property of the providing Party and shall be used solely for the purposes of the Research Collaboration, unless otherwise mutually agreed in writing. Upon expiration or termination of this Agreement, the unused portions of such materials will be returned promptly to the providing Party or will be disposed of as directed by the providing Party in writing.

11. SUPPLIES AND EQUIPMENT

In the event that Institute purchases supplies or equipment under the Budget for the Research Collaboration, title to such supplies and equipment shall vest in Institute, unless the Parties mutually agree otherwise in writing.

12. INDEMNIFICATION

12.1**Atara Indemnification**. Atara agrees to indemnify, defend and hold harmless Institute and its trustees, officers, staff, representatives and agents ("**Institute Indemnitees**") against all damages, costs, expenses, losses and liabilities ("**Losses**") actually awarded by a court of competent jurisdiction or agreed in settlement, as a result of any third party claims, demands, suits, or other actions ("**Claims**") arising from (a) Atara's use of the Data or Inventions in connection with Atara's activities pursuant to the License Agreement, including the development and commercialization of CTL Products and any New CTL Products and Program Vaccines (in each case, if applicable), (b) Atara's breach of this Agreement or the Development Plan (including without limitation Atara's breach of its representations and warranties), (c) the negligent or wrongful acts or omissions or of any Institute officer, agent, or employee the negligent or intentional acts or omissions or breach of this Agreement (including without limitation Atara's breach of its representations and warranties) by Atara and its officers, agents, and employees; provided that Atara will have no obligation to indemnify Institute Indemnitees to the extent that any such Claim is based on Institute's negligence, willful misconduct or breach of this Agreement (including without limitation Institute's breach of its representations and warranties).

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13. **NOTICE**

Except for the remittance of payments due pursuant to Section 4.4 and Schedule 1.12(B), whenever any notice is to be given hereunder, it shall be in writing and shall be deemed received, if delivered by courier on a business day, on the day delivered, or on the second business day following mailing, if sent by first-class certified or registered mail, postage prepaid, to the following addresses:

Institute: QIMR Berghofer Medical Research Institute
300 Herston Road,
Herston, QLD, 4006
Attention: Chief Operating Officer
Tel:

Atara: Atara Biotherapeutics, Inc.
611 Gateway Blvd #900,
South San Francisco, CA 94080
Attn: General Counsel
Tel:

With a copy to:

Atara Biotherapeutics, Inc.
4360 Park Terrace Dr., Suite #100,
Westlake Village, CA 91361
Attn: Chief Medical Officer

14. **DISPUTE RESOLUTION**

14.1 **Executive Resolution.** The parties shall initially seek amicably to settle all disputes (each, a "**Dispute**") arising out of or in connection with this Agreement (including any Dispute relating to Development Plan and performance of activities thereunder) by negotiation, including discussion at the JSC, subject to the Parties' respective final decision making authority as set forth in Section 3.3(f). If, within [*] after written notice by either Party of the existence of a dispute, the Parties do not resolve such Dispute, then the Dispute shall be referred by the JSC to the Executive Officers from each Party for further negotiation. If the Designated Executive Officers of each Party cannot resolve such Dispute, then subject to Sections 3.3(f) and 14.7, such Dispute will be referred to final binding arbitration in accordance with Sections 14.2 through 14.6.

14.2 **Arbitration**. Any Dispute referred for arbitration shall be finally settled under the Rules of the International Centre for Dispute Resolution (the "**Rules of Arbitration**") then in force, by one arbitrator appointed in accordance with such Rules of Arbitration. The Arbitral Tribunal shall be guided by the IBA Rules on the Taking of Evidence in International Arbitration, and there shall be no depositions. The place

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of the arbitration shall be New York, New York, United States of America. The language of the arbitration shall be English.

14.3**Selection of the Arbitrator**. Each arbitrator shall have [*] of experience in arbitrating disputes in the pharmaceutical industry, or of pharmaceutical licensing disputes and be admitted to practice law in the United States of America. The arbitrator conducting the arbitration must and shall agree to render an award within [*] after the final hearing. The arbitrator [*]. Without limiting any other remedies that may be available under Applicable Laws, the arbitrator shall have [*].

14.4**Conduct of the Arbitration**. The Parties undertake to keep confidential all awards in their arbitration, together with all materials in the proceedings created for the purpose of the arbitration and all other documents produced by another Party in the proceedings not otherwise in the public domain, save and to the extent that disclosure may be required of a Party by legal duty or under Applicable Law, the rules and regulations of any stock exchange or quotation services on which such Party's stock is traded or quoted, to protect or pursue a legal right or to enforce or challenge an award in legal proceedings before a court or other judicial authority.

14.5**Continued Performance**. Unless otherwise agreed in writing, the Parties will continue to perform their respective obligations under this Agreement during any arbitration or court proceeding seeking enforcement of an arbitral decision or award, and, unless this Agreement is in its entirety deemed null and void or is otherwise revoked or rescinded in its entirely, the Parties shall continue to perform their respective remaining obligations under this Agreement, and may continue to exercise their respective remaining rights and remedies thereunder, following any arbitration.

14.6**Preliminary Injunctions**. Notwithstanding anything in this Agreement to the contrary, a Party may seek a temporary restraining order or a preliminary injunction from any court of competent jurisdiction in order to prevent immediate and irreparable injury, loss, or damage on a provisional basis, pending the decision of the arbitrator(s) on the ultimate merits of any Dispute.

14.7**Patent Disputes**. Notwithstanding anything in this Agreement to the contrary, any dispute concerning inventorship that is not resolved within [*] following notice by one party to the other of the creation or reduction to practice of any Invention, and any dispute regarding any and all issues regarding the scope, construction, validity, and enforceability of any patent or patent application (including whether or not such patent or patent application should be included in the Patent Rights under the License Agreement) in a country within the Territory shall be determined in a court or other governmental authority of competent jurisdiction under the applicable patent laws of such country.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

15. **TERM AND TERMINATION**

15.1**Term**. This Agreement shall be effective from the Original Effective Date until all Research Milestone Payments under Section 4.4 have been paid, (the "**Term**"), unless earlier terminated in accordance with thisArticle 15.

15.2**Termination of License Agreement**. This Agreement will terminate automatically in the event that the License Agreement is terminated, provided that prior to such termination of this Agreement becoming effective, the Parties shall cooperate to wind down the activities being conducted hereunder as set forth in Section 15.5(b).

15.3**Termination for Failure of the Research Collaboration.** This Agreement may be terminated by Institute or Atara at any time upon the giving of thirty (30) days' prior written notice to the other if either party determines, in its discretion, that the Research Collaboration is no longer academically, technically, or commercially feasible.

15.4**Termination for Material Breach**. In the event that either party materially breaches any of its obligations under this Agreement and shall fail to remedy such default within thirty (30) days after written notice thereof, the party not in default shall have the option of terminating this Agreement by giving written notice of termination with an immediate effect to the defaulting party.

15.5**Effects of Termination.** Following termination, but not expiration of this Agreement, the following shall apply:

(a) Termination of this Agreement shall not affect the rights and obligations of the parties accrued prior to termination.

(b) Promptly following any notice of termination of this Agreement, the Parties shall meet, through the JSC, to discuss and agree upon the steps to be taken to wind down the activities being conducted under the Research Collaboration, (the "**Wind Down Activities**"). Unless requested in writing by Atara, agreed by the Parties to be included within the budget for any Wind Down Activities, or already committed to be paid by Institute on a non-cancelable basis prior to the date of notice of termination, Institute shall not incur any additional costs or expenses in conducting activities under this Agreement following the date of notice of termination. Atara agrees to reimburse Institute for (i) any non-cancelable obligations actually incurred by Institute prior to termination in accordance with the Research Collaboration, provided such amounts have been incurred in accordance with the applicable Budget therefor, and (ii) any costs incurred in relation

to the Wind Down Activities thereunder as mutually agreed by the JSC. Following wind-down of the Research Collaboration Atara shall have no further obligations to make any payments to Institute, other than the Minimum Research Contribution pursuant to Section 15.5(e).

(c) All materials, information and data, including any Confidential Information, provided by one Party to the other Party pursuant to this Agreement shall be returned to the disclosing Party as set forth in Section 6.6 and Article 10.

(d) The Parties' rights in CTL Products, New CTL Products and [*] arising from the conduct of activities under this Agreement prior to the effective date of termination shall be subject to Section 9.6(b), (c), (e), (f), (g) and (i), and Sections 9.7 and 9.9 of the License Agreement.

(e) In the case of termination by Atara other than pursuant to Section 15.4, Atara shall, within 30 days after such termination takes effect, pay to Institute any shortfall between all amounts paid to Institute prior to termination, and the Minimum Research Contribution.

15.6**Survival.** Upon termination or expiration of this Agreement, any provisions herein which are intended to continue and survive such termination or expiration, including Articles 1, 6, 7, 9, 10, 12, 13, 14 and 16 through 23, and Sections 4.4 (to the extent that the License Agreement has not expired or terminated, and subject to Section 9.6(b) of the License Agreement) and 15.5 shall survive any expiration or termination of this Agreement.

16. APPLICABLE LAW

This Agreement shall be governed by the laws of the State of New York without regard to the conflict of law principles thereof. Any disputes arising hereunder shall be adjudicated accordance with Article 14.

17. WAIVER

No waiver by either Party of any breach or default of any of the agreements contained herein will be deemed a waiver as to any subsequent and/or similar breach or default. No waiver of this Agreement is valid or binding on the Parties unless made in writing (identifying the provision that is waived) and signed on behalf of each Party.

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18. **ASSIGNMENT**

Neither party hereto may assign or transfer any rights or obligations under this Agreement without the prior written consent of the other party, except that no such consent shall be required for a party to assign its rights or transfer its obligations to its Affiliates or in connection with the sale or transfer of the majority of its stock or all or substantially all of its assets to which this Agreement relates, whether as part of a merger, acquisition, or asset sale. Any assignment in violation of this Agreement will be null and void. This Agreement benefits and binds the parties and their respective successors and permitted assigns.

19. **ENTIRE AGREEMENT**

This Agreement, together with the License Agreement, any Manufacturing Agreement executed by the Parties, and any Exhibits to any of the foregoing, represents the entire understanding of the Parties and supersedes any prior or contemporaneous agreements or understandings between Principal Investigator or Institute with Atara with respect to the subject matter hereof. Furthermore, no modification, supplement, or new agreement may be executed, prior to the expiration of this Agreement, between Institute and Atara with respect to the subject matter hereof, without formal written amendment to this Agreement, signed by all Parties.

20. **INDEPENDENT CONTRACTOR**

In performing their respective duties under this Agreement, each of the Parties will be operating as an independent contractor. Nothing contained herein will in any way constitute any association, partnership, or joint venture between the Parties hereto, or be construed to evidence the intention of the Parties to establish any such relationship. Neither Party will have the power to bind the other Party or incur obligations on the other Party's behalf without the other Party's prior written consent.

21. **SEVERABILITY**

If any one or more of the provisions contained in this Agreement shall be held invalid, illegal, or unenforceable for any reason or in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions hereof, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

22. **CONSTRUCTION.**

The headings of the Sections are inserted for convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement. Except where the context otherwise

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requires, wherever used, the use of any gender will be applicable to all genders, and the word "or" is used in the inclusive sense. When used in this Agreement, "including" means "including without limitation". References to either Party include the successors and permitted assigns of that Party. The Recitals are incorporated by reference into this Agreement. The headings of this Agreement are for convenience of reference only and in no way define, describe, extend or limit the scope or intent of this Agreement or the intent of any provision contained in this Agreement. The Parties have each consulted counsel of their choice regarding this Agreement, and, accordingly, no provisions of this Agreement will be construed against either Party on the basis that the Party drafted this Agreement or any provision thereof. The official text of this Agreement, any notice given or accounts or statements required by this Agreement, and any dispute proceeding related to or arising hereunder, will be in English. If any dispute concerning the construction or meaning of this Agreement arises, then reference will be made only to this Agreement as written in English and not to any translation into any other language.

23. **COUNTERPARTS.**

This Agreement may be executed in one or more counterparts, each of which together shall constitute one and the same Agreement. For purposes of executing this Agreement, a facsimile (including a PDF image delivered via email) copy of this Agreement, including the signature pages, will be deemed an original. The Parties agree that neither Party will have any rights to challenge the use or authenticity of a counterpart of this Agreement based solely on that its signature, or the signature of the other Party, on such counterpart is not an original signature.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

IN WITNESS WHEREOF, the undersigned have entered into this Agreement as of the date first set forth above.

Agreed and Accepted By:

Atara Biotherapeutics, Inc.:

By: /s/ Isaac Ciechanover
Name: Isaac Ciechanover
Title: Chief Executive Officer and President

Council of the Queensland Institute of Medical Research:

By: /s/ Frank Gannon
Name: Frank Gannon
Title: Chief Executive Officer and Director

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SCHEDULE 1.26(A)

DEVELOPMENT PLAN

- [*]

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SCHEDULE 1.26(B)

DEVELOPMENT BUDGET

[*]

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CMV EBV UPDATED BUDGET

[*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

NEW RESEARCH BUDGETS:
HPV BUDGET

[*]

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BKV BUDGET

[*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

SCHEDULE 1.15

FTE RATES*

[*]

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DEED OF AMENDMENT
TO
AMENDED AND RESTATED RESEARCH AND DEVELOPMENT COLLABORATION AGREEMENT

BETWEEN

THE COUNCIL OF THE QUEENSLAND INSTITUTE OF MEDICAL RESEARCH

AND

ATARA BIOTHERAPEUTICS, INC,

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

DEED OF AMENDMENT
TO
AMENDED AND RESTATED RESEARCH AND DEVELOPMENT COLLABORATION AGREEMENT

This Deed of Amendment To Amended and Restated Research and Development Collaboration Agreement ("**Amendment**"), entered into on 15 December 2017 and effective as of 1st October 2017 ("Amendment Effective Date"), amending the Amended and Restated Research and Development Collaboration Agreement ("**Agreement**") entered into on 23rd September 2016 and effective as of the Original Effective Date (as defined therein), is made by and between **Atara Biotherapeutics, Inc.**, having its principal offices at 611 Gateway Blvd #900, South San Francisco, California 94080, U.S.A. ("**Atara**"), and the **Council of the Queensland Institute of Medical Research**, a not-for-profit Institute organized and existing under the laws of the State of Queensland having its principal offices at 300 Herston Rd, Herston QLD 4006, Australia ("**Institute**"). Each of Atara and Institute are referred to in this Amendment as a "**Party**", and collectively as the "**Parties**".

WHEREAS, Atara and Institute are parties to that certain Research and Development Collaboration Agreement (the "**Original Research Agreement**"), entered into on October 20, 2015;

WHEREAS, the Original Research Agreement has been amended and restated in the form of the Agreement;

WHEREAS, pursuant to the Original Research Agreement and the Agreement, the Parties have collaborated in relation to (inter alia) research and development activities to progress the development of novel allogeneic CTL therapies for use in treating oncology and autoimmune indications associated with the expression on or in cells, of Epstein Barr Virus (including all naturally occurring variants thereof) and/or cytomegalovirus (including all naturally occurring variants thereof) and/or BK Virus (including all naturally occurring variants thereof) and/or John Cunningham Virus (including all naturally occurring variants thereof) and/or Human Papillomavirus (including all naturally occurring variants thereof) [*]; and

WHEREAS, the Parties desire to alter, and to extend the duration of, the Development Program (as defined in the Agreement) with respect to the Initial EBV Indications (as defined in the Agreement) and to increase the budget for such Development Program.

NOW, THEREFORE, Institute and Atara hereby agree to the following terms and conditions in this Amendment:

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

24. **DEFINED TERMS**

Except as otherwise defined herein, capitalized terms in this Amendment will have the same meanings as set forth in the Agreement.

25. **AMENDMENTS**

The Agreement is hereby amended with effect from the Amendment Effective Date, as follows:

(a) Schedule 1.26(A) of the Agreement, titled "DEVELOPMENT PLAN", shall be amended to add to Schedule 1.26(A) the additional activities for Year 3 related to the Initial EBV Indications as set forth in Attachment 1 of this Amendment.

(b) Schedule 1.26(B) of the Agreement, titled "DEVELOPMENT BUDGET", shall be amended to replace the CVM/EBV Budget set forth in Schedule 1.26(B) with the revised CMV/EBV Budget as set forth in Attachment 2 of this Amendment, with the understanding that the funds for Year 3 are all to be associated with activities for the Initial EBV Indications in the Development Plan.

The Agreement shall otherwise continue in full force and effect in accordance with its terms. Nothing in this Amendment prejudices or adversely affects any right, power, authority, discretion or remedy arising under the Agreement before the date of this Amendment, or discharges, releases or otherwise affects any liability or obligation arising under the Agreement before the date of this Amendment.

26. **APPLICABLE LAW**

This Amendment shall be governed by the laws of the State of New York without regard to the conflict of law principles thereof. Any disputes arising hereunder shall be adjudicated accordance with Article 14 of the Agreement.

27. **CONSTRUCTION.**

The headings of the Sections are inserted for convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Amendment. Except where the context otherwise requires, wherever used, the use of any gender will be applicable to all genders, and the word "or" is used in the inclusive sense. When used in this Amendment, "including" means "including without limitation". References to either Party include the successors and permitted assigns of that Party. The Recitals are incorporated by reference into this Amendment. The headings of this Amendment are for convenience of reference only and in no way define, describe, extend or limit the scope or intent of this Amendment or the intent of any provision contained in this Amendment. The Parties have each consulted counsel of their choice regarding this Amendment, and, accordingly, no provisions of this Amendment will be

construed against either Party on the basis that the Party drafted this Amendment or any provision thereof. The official text of this Amendment, any notice given or accounts or statements required by this Amendment, and any dispute proceeding related to or arising hereunder, will be in English. If any dispute concerning the construction or meaning of this Amendment arises, then reference will be made only to this Amendment as written in English and not to any translation into any other language.

28. **COUNTERPARTS.**

This Amendment may be executed in one or more counterparts, each of which together shall constitute one and the same Agreement. For purposes of executing this Amendment, a facsimile (including a PDF image delivered via email) copy of this Amendment, including the signature pages, will be deemed an original. The Parties agree that neither Party will have any rights to challenge the use or authenticity of a counterpart of this Amendment based solely on that its signature, or the signature of the other Party, on such counterpart is not an original signature.

IN WITNESS WHEREOF, the undersigned have entered into this Amendment as of the date first set forth above.

Agreed and Accepted By:

Atara Biotherapeutics, Inc.:

By: /s/ Isaac Ciechanover
Name: Isaac Ciechanover
Title: Chief Executive Officer and President

Council of the Queensland Institute of Medical Research:

By: /s/ Donna Hancock
Name: Donna Hancock
Title: Chief Operating Officer

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Attachment 1

ADDITION TO SCHEDULE 1.26(A)

DEVELOPMENT PLAN

[*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Attachment 2

REVISION TO SCHEDULE 1.26(B)

DEVELOPMENT BUDGET

[*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

DEED OF AMENDMENT NUMBER 2
TO
AMENDED AND RESTATED RESEARCH AND DEVELOPMENT COLLABORATION AGREEMENT

BETWEEN

THE COUNCIL OF THE QUEENSLAND INSTITUTE OF MEDICAL RESEARCH

AND

ATARA BIOTHERAPEUTICS, INC,

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

DEED OF AMENDMENT NUMBER 2
TO
AMENDED AND RESTATED RESEARCH AND DEVELOPMENT COLLABORATION AGREEMENT

This Deed of Amendment Number 2 To Amended and Restated Research and Development Collaboration Agreement ("**Amendment #2**"), entered into on 24th April 2018 and effective as of 1st January 2018 ("Second Amendment Effective Date"), amending the Amended and Restated Research and Development Collaboration Agreement ("**Agreement**") entered into on 23rd September 2016 and effective as of the Original Effective Date (as defined therein), is made by and between **Atara Biotherapeutics, Inc.**, having its principal offices at 611 Gateway Blvd #900, South San Francisco, California 94080, U.S.A. ("**Atara**"), and the **Council of the Queensland Institute of Medical Research**, a not-for-profit Institute organized and existing under the laws of the State of Queensland having its principal offices at 300 Herston Rd, Herston QLD 4006, Australia ("**Institute**"). Each of Atara and Institute are referred to in this Amendment as a "**Party**", and collectively as the "**Parties**".

WHEREAS, Atara and Institute are parties to that certain Research and Development Collaboration Agreement (the "**Original Research Agreement**"), entered into on October 20, 2015;

WHEREAS, the Original Research Agreement has been amended and restated in the form of the Agreement;

WHEREAS, the Agreement was further amended by a Deed of Amendment between the Parties entered into on 15th December 2017 and effective as of 1st October 2017 (the "**Amendment**");

WHEREAS, pursuant to the Original Research Agreement, the Agreement and the Amendment, the Parties have collaborated in relation to (inter alia) research and development activities to progress the development of novel allogeneic CTL therapies for use in treating oncology and autoimmune indications associated with the expression on or in cells, of Epstein Barr Virus (including all naturally occurring variants thereof) and/or cytomegalovirus (including all naturally occurring variants thereof) and/or BK Virus (including all naturally occurring variants thereof) and/or John Cunningham Virus (including all naturally occurring variants thereof) and/or Human Papillomavirus (including all naturally occurring variants thereof) [*]; and

WHEREAS, the Parties desire to alter, and to extend the duration of, the Development Program (as defined in the Agreement) with respect to the Initial EBV, BKV, and HPV Indications (as defined in the Agreement) and to increase the budget for such Development Programs.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

NOW, THEREFORE, Institute and Atara hereby agree to the following terms and conditions in this Amendment:

29. **DEFINED TERMS**

Except as otherwise defined herein, capitalized terms in this Amendment #2 will have the same meanings as set forth in the Work Order and the Agreement.

30. **AMENDMENTS**

The Agreement is hereby amended with effect from the Second Amendment Effective Date, as follows:

(a) Schedule 1.26(A) of the Agreement, titled "DEVELOPMENT PLAN", shall be amended to add to Schedule 1.26(A) the additional activities for 2018 and 2019 related to the Initial EBV, BK/JC, and HPV Indications as set forth in Attachment 1 of this Amendment #2.

(b) Schedule 1.26(B) of the Agreement, titled "DEVELOPMENT BUDGET", shall be amended to replace the CMV/EBV Budget, BKV CTL Budget, and HPV CTL Budget set forth in Schedule 1.26(B) with the revised Initial EBV, BK/JC, and HPV Budget as set forth in Attachment 2 of this Amendment #2, with the understanding that the funds for 2018 and 2019 are all to be associated with activities for the Initial EBV, BK/JC, and HPV Indications in the Development Plan.

The Agreement shall otherwise continue in full force and effect in accordance with its terms. Nothing in this Amendment #2 prejudices or adversely affects any right, power, authority, discretion or remedy arising under the Agreement before the Second Amendment Effective Date, or discharges, releases or otherwise affects any liability or obligation arising under the Agreement before the Second Amendment Effective Date.

31. **RATIFICATION**

The parties agree that as of the Amendment Effective Date to the date of execution, the Agreement terms as modified by this Amendment #2 have been ratified by the parties to have been properly executed.

32. **APPLICABLE LAW**

This Amendment #2 shall be governed by the laws of the State of New York without regard to the conflict of law principles thereof. Any disputes arising hereunder shall be adjudicated accordance with Article 14 of the Agreement.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

33. **CONSTRUCTION.**

The headings of the Sections are inserted for convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Amendment #2. Except where the context otherwise requires, wherever used, the use of any gender will be applicable to all genders, and the word "or" is used in the inclusive sense. When used in this Amendment #2, "including" means "including without limitation". References to either Party include the successors and permitted assigns of that Party. The Recitals are incorporated by reference into this Amendment #2. The headings of this Amendment #2 are for convenience of reference only and in no way define, describe, extend or limit the scope or intent of this Amendment #2 or the intent of any provision contained in this Amendment #2. The Parties have each consulted counsel of their choice regarding this Amendment #2, and, accordingly, no provisions of this Amendment #2 will be construed against either Party on the basis that the Party drafted this Amendment #2 or any provision thereof. The official text of this Amendment #2, any notice given or accounts or statements required by this Amendment #2, and any dispute proceeding related to or arising hereunder, will be in English. If any dispute concerning the construction or meaning of this Amendment #2 arises, then reference will be made only to this Amendment #2 as written in English and not to any translation into any other language.

34. **COUNTERPARTS.**

This Amendment #2 may be executed in one or more counterparts, each of which together shall constitute one and the same agreement. For purposes of executing this Amendment #2, a facsimile (including a PDF image delivered via email) copy of this Amendment #2, including the signature pages, will be deemed an original. The Parties agree that neither Party will have any rights to challenge the use or authenticity of a counterpart of this Amendment #2 based solely on that its signature, or the signature of the other Party, on such counterpart is not an original signature.

[Signatures to follow on next page.]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

IN WITNESS WHEREOF, the undersigned have entered into this Amendment #2 as of the date first set forth above.

Agreed and Accepted By:

Atara Biotherapeutics, Inc.:

By: /s/ Isaac Ciechanover
Name: Isaac Ciechanover
Title: Chief Executive Officer and President

Council of the Queensland Institute of Medical Research:

By: /s/ Donna Hancock
Name: Donna Hancock
Title: Chief Operating Officer

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Attachment 1

ADDITION TO SCHEDULE 1.26(A)

DEVELOPMENT PLAN

Additional activities for 2018 and 2019 R&D Program:

[*]

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Attachment 2

REVISION TO SCHEDULE 1.26(B)

DEVELOPMENT BUDGET

[*]

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DEED OF AMENDMENT NUMBER 3
TO
AMENDED AND RESTATED RESEARCH AND DEVELOPMENT COLLABORATION AGREEMENT

BETWEEN

THE COUNCIL OF THE QUEENSLAND INSTITUTE OF MEDICAL RESEARCH

AND

ATARA BIOTHERAPEUTICS, INC,

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

DEED OF AMENDMENT NUMBER 3
TO
AMENDED AND RESTATED RESEARCH AND DEVELOPMENT COLLABORATION AGREEMENT

This Deed of Amendment Number 3 To Amended and Restated Research and Development Collaboration Agreement ("**Amendment #3**"), effective as of 1st January 2018 ("Third Amendment Effective Date"), amending the Amended and Restated Research and Development Collaboration Agreement ("**Agreement**") entered into on 23rd September 2016 and effective as of the Original Effective Date (as defined therein), is made by and between **Atara Biotherapeutics, Inc.**, having its principal offices at 611 Gateway Blvd #900, South San Francisco, California 94080, U.S.A. ("**Atara**"), and the **Council of the Queensland Institute of Medical Research**, a not-for-profit Institute organized and existing under the laws of the State of Queensland having its principal offices at 300 Herston Rd, Herston QLD 4006, Australia ("**Institute**"). Each of Atara and Institute are referred to in this Amendment as a "**Party**", and collectively as the "**Parties**".

WHEREAS, Atara and Institute are parties to that certain Research and Development Collaboration Agreement (the "**Original Research Agreement**"), entered into on October 20, 2015;

WHEREAS, the Original Research Agreement has been amended and restated in the form of the Agreement;

WHEREAS, the Agreement was further amended by a Deed of Amendment between the Parties entered into on 15th December 2017 and effective as of 1st October 2017 and further amended by Deed of Amendment Number 2, entered into on 3rd May 2018 and effective 1st January 2018 (the "**Amendment**") and further amended again by Deed of Amendment No 2 between the Parties effective 1 January 2018 ("**Amendment #2**");

WHEREAS, pursuant to the Original Research Agreement, the Agreement and the Amendment, the Parties have collaborated in relation to (inter alia) research and development activities to progress the development of novel allogeneic CTL therapies for use in treating oncology and autoimmune indications associated with the expression on or in cells, of Epstein Barr Virus (including all naturally occurring variants thereof) and/or cytomegalovirus (including all naturally occurring variants thereof) and/or BK Virus (including all naturally occurring variants thereof) and/or John Cunningham Virus (including all naturally occurring variants thereof) and/or Human Papillomavirus (including all naturally occurring variants thereof) [*]; and

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WHEREAS, Atara agrees to pay Institute at the rate of [*] per Full Time Employee (FTE) per year, for the following hires:

[*].

NOW, THEREFORE, Institute and Atara hereby agree to the following terms and conditions in this Amendment:

35. **DEFINED TERMS**

Except as otherwise defined herein, capitalized terms in this Amendment #3 will have the same meanings as set forth in the Work Order and the Agreement.

36. **AMENDMENTS**

The Agreement is hereby amended with effect from the Third Amendment Effective Date, as follows:

Atara agrees to pay, for the period 1st January 2018 through June 2018, [*].

Institute shall use Commercially Reasonable Efforts (as defined in the License Agreement) to ensure that the full-time employees (FTEs) assigned to perform activities for Atara programs devote at least eighty-five percent (85%) of their total working time to activities under the development plan of the Agreement or other activities under the Agreement, unless otherwise mutually agreed by the Parties.

The Agreement shall otherwise continue in full force and effect in accordance with its terms. Nothing in this Amendment #3 prejudices or adversely affects any right, power, authority, discretion or remedy arising under the Agreement before the Third Amendment Effective Date, or discharges, releases or otherwise affects any liability or obligation arising under the Agreement before the Third Amendment Effective Date.

The parties agree that as of the Amendment Effective Date to the date of execution, the Agreement terms as modified by this Amendment #3 have been ratified by the parties to have been properly executed.

37. **APPLICABLE LAW**

This Amendment #3 shall be governed by the laws of the State of New York without regard to the conflict of law principles thereof. Any disputes arising hereunder shall be adjudicated accordance with Article 14 of the Agreement.

38. **CONSTRUCTION.**

The headings of the Sections are inserted for convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Amendment #3. Except where the context

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otherwise requires, wherever used, the use of any gender will be applicable to all genders, and the word "or" is used in the inclusive sense. When used in this Amendment #3, "including" means "including without limitation". References to either Party include the successors and permitted assigns of that Party. The Recitals are incorporated by reference into this Amendment #3. The headings of this Amendment #3 are for convenience of reference only and in no way define, describe, extend or limit the scope or intent of this Amendment #3 or the intent of any provision contained in this Amendment #3. The Parties have each consulted counsel of their choice regarding this Amendment #3, and, accordingly, no provisions of this Amendment #3 will be construed against either Party on the basis that the Party drafted this Amendment #3 or any provision thereof. The official text of this Amendment #3, any notice given or accounts or statements required by this Amendment #3, and any dispute proceeding related to or arising hereunder, will be in English. If any dispute concerning the construction or meaning of this Amendment #3 arises, then reference will be made only to this Amendment #3 as written in English and not to any translation into any other language.

39. **COUNTERPARTS.**

This Amendment #3 may be executed in one or more counterparts, each of which together shall constitute one and the same agreement. For purposes of executing this Amendment #3, a facsimile (including a PDF image delivered via email) copy of this Amendment #3, including the signature pages, will be deemed an original. The Parties agree that neither Party will have any rights to challenge the use or authenticity of a counterpart of this Amendment #3 based solely on that its signature, or the signature of the other Party, on such counterpart is not an original signature.

[Signatures to follow on next page.]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

IN WITNESS WHEREOF, the undersigned have entered into this Amendment #3 as of the date first set forth above.

Agreed and Accepted By:

Atara Biotherapeutics, Inc.:

By: /s/ Christopher Haqq
Name: Christopher Haqq
Title: Chief Medical Officer

Council of the Queensland Institute of Medical Research:

By: /s/ Donna Hancock
Name: Donna Hancock
Title: Chief Operating Officer

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Exhibit 10.3

DEVELOPMENT AND MANUFACTURING SERVICES AGREEMENT

THIS DEVELOPMENT AND MANUFACTURING SERVICES AGREEMENT is made as of August 10, 2015 (the "Effective Date") by and between **ATARA BIOTHERAPEUTICS, INC** , a Delaware corporation with an office at 701 Gateway Blvd, Suite 200, South San Francisco, CA 94080 ("Atara") and **COGNATE BIOSERVICES, INC.**, a Delaware corporation, with an office at 7513 Connelly Drive, Suite I, Hanover, MD 21076 ("Manufacturer").

RECITALS:

WHEREAS, Atara desires to engage Manufacturer to perform certain Development and/or Manufacturing Services (as those terms are defined below), on the terms and conditions set forth below, and Manufacturer desires to perform such Services for Atara.

AGREEMENT:

NOW, THEREFORE, in consideration of the foregoing premises and the mutual covenants of the parties set forth in this Agreement, the parties hereto agree as follows:

ARTICLE 1
DEFINITIONS

Unless this Agreement expressly provides to the contrary, the following terms, whether used in the singular or plural, have the respective meanings set forth below.

1.1 "**Affiliate**" means, with respect to either Atara or Manufacturer, any corporation, company, partnership, joint venture and/or firm which controls, is controlled by or is under common control with Atara or Manufacturer, as the case may be. As used in the definition of Affiliate, "control" means (a) in the case of corporate entities, direct or indirect ownership of more than fifty percent (50%) of the stock or shares having the right to vote for the election of directors (or such lesser percentage that is the maximum allowed to be owned by a foreign corporation in a particular jurisdiction), and (b) in the case of non-corporate entities, the direct or indirect power to manage, direct or cause the direction of the management and policies of the non-corporate entity or the power to elect more than fifty percent (50%) of the members of the governing body of such non-corporate entity; provided, however, that, as applied to Atara, the terms of clause (b) will apply equally to corporate as well as non-corporate entities.

1.2 "**Agreement**" means this Development and Manufacturing Services Agreement, together with all Appendices attached hereto, as amended from time to time by the parties in accordance with Section 15.6, and all fully signed Work Orders entered into by the parties.

1.3 "**API/Drug Substance**" means the active pharmaceutical ingredient or drug substance identified on the applicable Work Order.

1.4 "**Applicable Law**" means all applicable ordinances, rules, regulations, laws, requirements and court orders of any kind whatsoever of any competent Authority, as amended from time to time including cGMP (if applicable).

1.5 "**Atara Equipment**" means the Equipment, if any, identified on the applicable Work Order as being provided by Atara or purchased or otherwise acquired by Manufacturer at Atara's expense.

1.6 "**Atara Indemnitees**" has the meaning set forth in Section 12.1.

1.7 "**Atara Materials**" means the materials identified in the applicable Work Order as being provided by Atara, including labels (if any) for Product.

1.8 "**Atara Technology**" means (a) Atara Materials and any intermediates, components, or derivatives of Atara Materials; (b) Product and any intermediates, components, or derivatives of Product; (c) Specifications; and (d) the Technology of Atara (i) existing prior to the Effective Date, or (ii) owned, conceived, created, developed or obtained by or on behalf of Atara independent of this Agreement and [*].

1.9 "**Authority**" means any competent government regulatory authority responsible for granting approvals for the performance of Services under this Agreement or for issuing regulations pertaining to the Manufacture and/or use of Product in the intended country of use, including the FDA.

1.10 "**Batch**" means a specific quantity of Product that is intended to be of uniform character and quality, within specified limits, and is produced during the same cycle of Manufacture as defined by the applicable Batch record.

1.11 "**Batch Documentation**" has the meaning set forth in Section 6.2.

1.12 "**Certificate of Analysis** " means a document signed by an authorized representative of Manufacturer, describing Specifications for, and testing methods applied to, Product, and the results of testing, in each case in the form substantially attached hereto as Exhibit A.

1.13 "**Certificate of Compliance**" means a document signed by an authorized representative of Manufacturer, certifying that a particular Batch was Manufactured in accordance with cGMP (if applicable), all other Applicable Law, and the Specifications, in each case in the form substantially attached hereto as Exhibit B.

1.14 "**cGMP**" means current good manufacturing practices and regulations applicable to the Manufacture of Product that are promulgated by the applicable Authority.

1.15 "**Change Order**" has the meaning set forth in Section 5.3.

1.16 "**Confidential Information**" has the meaning set forth in Section 10.

1.17 "**Develop**" or "**Development**" means the studies and other activities conducted by Manufacturer under this Agreement to develop and/or validate all or any part of a Manufacturing

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Process including analytical tests and methods, formulations and dosage forms and stability, if applicable.

1.18 "**Effective Date**" has the meaning set forth in the preamble.

1.19 "**Equipment**" means any equipment or machinery, including Atara Equipment, used by Manufacturer in the Development and/or Manufacturing of Product, or the holding, processing, testing or release of Product.

1.20 "**Facility**" means the facilit(ies) of Manufacturer identified in the applicable Work Order.

1.21 "**FDA**" means the United States Food and Drug Administration, and any successor agency having substantially the same functions.

1.22 "**FDCA**" means the United States Federal Food, Drug and Cosmetic Act, 21 U.S.C. §321 et seq., as amended from time to time.

1.23 "**force majeure**" has the meaning set forth in Section 15.2.

1.24 "**Improvements**" means all Technology and discoveries, inventions, developments, modifications, innovations, updates, enhancements, improvements, writings or rights (whether or not protectable under patent, trademark, copyright or similar laws) that are conceived, discovered, invented, developed, created, made or reduced to practice in the performance of Services under this Agreement.

1.25 "**Initial Work Order**" means the first Work Order agreed to and executed by the parties on the Effective Date, and as attached hereto as Appendix A.

1.26 "**Man-In-Plant**" has the meaning set forth in Section 6.4.

1.27 "**Manufacture**" and "**Manufacturing**" means any steps, processes and activities necessary to produce Product including the manufacturing, processing, packaging, labeling, quality control testing, stability testing, release, storage or supply of Product.

1.28 "**Manufacturer Indemnitees**" has the meaning set forth in Section 12.2.

1.29 "**Manufacturer Technology**" means the Technology of Manufacturer (a) existing prior to the Effective Date; or (b) owned, conceived, created, developed or obtained by or on behalf of Manufacturer independent of this Agreement and [*].

1.30 "**Manufacturing Process**" means any and all processes and activities (or any step in any process or activity) used by Manufacturer to Manufacture Product, as evidenced in the Batch Documentation or master Batch Documentation.

1.31 "**Manufacturing Improvements**" has the meaning set forth in Section 9.4.

1.32 "**Permitted Subcontractor**" has the meaning set forth in Section 3.3.

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1.33 "**Planned Deviation**" means any deviation that is proposed or identified, in each case, by Atara or Manufacturer, and approved by the parties in writing prior to performance of the applicable Work Order.

1.34 "**Product**" means any API/Drug Substance or drug product comprised of API/Drug Substance in each case as specified in the applicable Work Order, including, if applicable, bulk packaging and/or labeling as provided in such Work Order and manufactured by Manufacturer for Atara pursuant to this Agreement.

1.35 "**Quality Agreement**" has the meaning set forth in Section 2.2.

1.36 "**Records**" has the meaning set forth in Section 5.4(a).

1.37 "**Representative**" has the meaning set forth in Section 3.1.

1.38 "**Scheduled Manufacturer Technology**" has the meaning set forth in Section 9.2.

1.39 "**Services**" means the Development, Manufacturing and/or other services described in a Work Order entered into by the parties.

1.40 "**Specifications**" means the list of tests, references to any analytical procedures and appropriate acceptance criteria which are numerical limits, ranges or other criteria for tests described in order to establish a set of criteria to which Product at any stage of Manufacture should conform to be considered acceptable for its intended use that are provided by or approved by Atara, as such specifications are amended or supplemented from time to time by Atara in writing.

1.41 "**Technology**" means all methods, techniques, trade secrets, copyrights, know-how, data, documentation, regulatory submissions, specifications and other intellectual property of any kind (whether or not protectable under patent, trademark, copyright or similar laws).

1.42 "**Work Order**" means a written work order referencing this Agreement, substantially in the form attached hereto as Appendix B, for the performance of Services by Manufacturer under this Agreement.

ARTICLE 2
ENGAGEMENT OF MANUFACTURER

2.1 **Services and Work Orders** . From time to time, Atara may wish to engage Manufacturer to perform Services for Atara. Such Services will be set forth in a Work Order. Each Work Order will be appended to this Agreement, will include the material terms for the project, and may include the scope of work, specified Services, Specifications, deliverables, timelines, milestones (if any), quantity, budget, payment schedule and such other details and special arrangements as are agreed to by the parties with respect to the activities to be performed under such Work Order. No Work Order will be effective unless and until it has been agreed to and signed by authorized representatives of both parties. Documents relating to the relevant project, including Specifications, proposals, quotations and any other relevant documentation, will only be effective if attached to the applicable Work Order and incorporated in the Work

Order by reference. Each fully signed Work Order will be subject to the terms of this Agreement and will be incorporated herein and form part of this Agreement. Manufacturer will perform the Services specified in each fully signed Work Order, as amended by any applicable Change Order(s), and in accordance with the terms and conditions of such Work Order and this Agreement. Notwithstanding the foregoing, nothing in this Agreement will obligate either party to enter into any Work Order under this Agreement beyond the initial Work Order executed and delivered simultaneously with this Agreement.

2.2 **Quality Agreement**. If appropriate or if required by Applicable Law, the parties will also agree upon a Quality Agreement containing quality assurance provisions for the Manufacture of Product ("**Quality Agreement**").

2.3 **Conflict Between Documents**. If there is any conflict, discrepancy, or inconsistency between the terms of this Agreement and any Work Order, Quality Agreement, purchase order, or other document or form used by the parties, the terms of this Agreement will control.

ARTICLE 3
PROJECT PERFORMANCE

3.1 **Representatives**. Each party will appoint a representative having primary responsibility for day-to-day interactions with the other party for the Services (each, a "**Representative**"), who will be identified in the applicable Work Order. Each party may change its Representative by providing written notice to the other party in accordance with Section 15.3; provided that each party will use reasonable efforts to provide the other party with [*] prior written notice of any change in its Representative for the Services. Except for notices or communications required or permitted under this Agreement, which will be subject to Section 15.3, or unless otherwise mutually agreed by the parties in writing, all communications between Manufacturer and Atara regarding the conduct of the Services pursuant to such Work Order will be addressed to or routed directly through the parties' respective Representatives.

3.2 **Communications**. The parties will hold project team meetings via teleconference or in person, on a periodic basis as agreed upon by the Representatives. Manufacturer will make written reports to Atara to the extent and as specified in the applicable Work Order.

3.3 **Subcontracting**. Manufacturer may not subcontract with any third party including any Affiliate of Manufacturer, to perform any of its obligations under this Agreement without the prior written consent of Atara (each such subcontractor, a "**Permitted Subcontractor**"). For clarity, execution of the Work Order constitutes prior written approval that such subcontractors shall be deemed Permitted Subcontractors for purposes of the preceding sentence to the extent such subcontractors are specified in the applicable Work Order. Manufacturer will be solely responsible for the performance of any Permitted Subcontractor, and for [*]. Manufacturer will cause any such Permitted Subcontractor to be bound by, and to comply with, the terms of this Agreement, as applicable, including all confidentiality, quality assurance, regulatory and other obligations and requirements of Manufacturer set forth in this Agreement. In no event will Manufacturer be responsible for the performance of any third party retained by Atara to perform any services in connection with the Services rendered by Manufacturer, including suppliers,

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distributors, consultants, agents or testing entities, unless and then only to the extent Manufacturer ’s negligence or willful misconduct causes such third party’s failure to perform.

3.4 **Duty to Notify**. Manufacturer will [*] notify Atara if at any time during the term of this Agreement Manufacturer believes that it will be unable to perform or complete the Services in accordance with the production schedule agreed in any Work Order. Compliance by Manufacturer with this Section 3.4 will not relieve Manufacturer of any other obligation or liability under this Agreement; provided that Manufacturer’s failure to provide notice under this Section 3.4 will not relieve Atara of any obligation or liability it has under this Agreement unless Atara is materially prejudiced by such failure to receive notice.

ARTICLE 4
MATERIALS AND EQUIPMENT

4.1 **Supply of Materials**. Manufacturer will supply, in accordance with the payment schedule(s) included in the applicable Work Order, and in accordance with the relevant approved raw material specifications, all materials to be used by Manufacturer in the performance of Services under a Work Order other than the Atara Materials specified in such Work Order. Atara or its designees will provide Manufacturer with the Atara Materials. Manufacturer agrees (a) to acknowledge receipt of all Atara Materials received; (b) not to provide Atara Materials to any third party without the express prior written consent of Atara; (c) not to use Atara Materials for any purpose other than conducting the Services, and without limiting the generality of the foregoing, will not analyze, characterize, modify or reverse engineer any Atara Materials or take any action to determine the structure or composition of any Atara Materials unless required pursuant to a signed Work Order; and (d) to destroy or return to Atara all unused quantities of Atara Materials according to Atara’s written directions and at Atara’s sole cost and expense.

4.2 **Ownership of Materials**. Atara will at all times retain title to and ownership of the Atara Materials, Product, any intermediates and components of Atara Materials or Product, and any work in process at each and every stage of the Manufacturing Process. Manufacturer will provide within the Facility an area or areas where the Atara Materials, Product, any intermediates and components of Atara Materials or Product, and any work in process are segregated and stored in accordance with the Specifications and cGMP (if applicable), and in such a way as to be able at all times to clearly distinguish such materials from products and materials belonging to Manufacturer, or held by it for a third party’s account. Atara will provide the Atara Materials (and any intermediates and components of any Atara Materials) to Manufacturer free and clear of all liens and encumbrances and Manufacturer will ensure that such Atara Materials and Product, any intermediates and components of any Atara Materials or Product, and any work in process are free and clear of any liens or encumbrances. Manufacturer will at all times take such reasonable measures as are required to protect the Atara Materials, Product, any intermediates and components of any Atara Materials or Product, and any work in process from loss, damage and theft at all stages of the Manufacturing Process. Manufacturer will [*] notify Atara if at any time it believes any Product or Atara Materials, or any intermediates and components of any Atara Materials or Product, or any work in process have been damaged, lost or stolen.

4.3 **Supply of Equipment**. Unless otherwise agreed in a Work Order, Manufacturer will supply all Equipment necessary to perform the Services, except that Atara will supply the Atara

Equipment, if any. Manufacturer will not use the Atara Equipment except in performance of Services under the applicable Work Order. The Atara Equipment will be delivered to Manufacturer's Facility free and clear of all liens and encumbrances. Title to any such delivered Atara Equipment will remain with Atara and Manufacturer will ensure that the Atara Equipment is properly labeled as Atara property and remains free and clear of any liens or encumbrances. At Atara's written request, the Atara Equipment will be returned to Atara, or to Atara 's designee, at Atara's sole cost and expense. Manufacturer will be responsible, at Atara 's cost, for maintenance of the Atara Equipment. To the extent Atara provides spare parts for the Atara Equipment, such spare parts will remain the property of Atara and will be used by Manufacturer only for maintenance of the Atara Equipment. Manufacturer will [*] notify Atara if at any time it believes any Atara Equipment has been damaged, lost or stolen.

ARTICLE 5
DEVELOPMENT AND MANUFACTURE OF PRODUCT

5.1 **Resources; Applicable Law**. Manufacturer will comply with all Applicable Law in performing Services.

5.2 **Facility.**

(a) **Performance of Services**. Manufacturer will perform all Services at the Facility, provide all staff necessary to perform the Services in accordance with the terms of the applicable Work Order and this Agreement, and hold at such Facility, all Equipment, Atara Equipment, Atara Materials and other items used in the Services. Manufacturer will not change the location of such Facility or use any additional facility for the performance of Services under this Agreement without [*] prior written notice to, and prior written consent from Atara, which consent will not be unreasonably withheld, conditioned, or delayed (it being understood and agreed that Atara may withhold consent pending satisfactory completion of a quality assurance audit and/or regulatory impact assessment of the new location or additional facility, as the case may be). Manufacturer will maintain, [*], the Facility and all Equipment required for the Manufacture of Product in a state of repair and operating efficiency consistent with the requirements of cGMP (if applicable) and all Applicable Law.

(b) **Facility Validation**. Atara will be responsible for performing all validation of any Atara Equipment, unless otherwise agreed in any Work Order. Manufacturer will be responsible for performing all validation of the Facility, Equipment and cleaning and maintenance processes employed in the Manufacturing Process in accordance with cGMP (if applicable), Manufacturer's SOPs, the applicable Quality Agreement (if any), Applicable Law, and in accordance with any other validation procedures established by Atara and agreed to in writing by Manufacturer.

(c) **Licenses and Permits**. Manufacturer will be responsible for obtaining, at its expense, any Facility or other licenses or permits, and any regulatory and government approvals necessary for the performance of Services by Manufacturer under this Agreement. At Atara's request, Manufacturer will provide Atara with copies of all such approvals and submissions to Authorities and, subject to the obligations of confidentiality set forth herein and Applicable Law, Atara will have the right to use any and all information contained in such approvals or

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submissions to the extent required in connection with regulatory approval and/or commercial development of Product.

(d) **Access to Facility**. On such dates and at such times as Manufacturer and Atara agree, Manufacturer will permit Atara or its duly authorized representatives to observe and consult with Manufacturer during the performance of Services under this Agreement, including the Manufacturing of any Batch of Product. Manufacturer also agrees that Atara and its duly authorized agents will have access, during normal business hours and during active Manufacturing, to inspect the Facility and Manufacturing Process to [*], including inspection of (i) the Equipment and materials used in the performance of Services; (ii) the holding facilities for such materials and Equipment; and (iii) all Records relating to such Services and the Facility; provided that Atara provides Manufacturer with [*] prior written request of such inspection (other than in the case of "for cause" audits). Atara will also have the right, at its expense, to conduct [*] upon reasonable prior written notice to Manufacturer, and Manufacturer agrees to cooperate with Atara [*]. Atara will and will cause its duly authorized representatives (including the Man-In-Plant) to, comply with the Manufacturer's reasonable instructions and/or monitoring policies (as the same may be amended from time to time) at all times any Atara representatives are in the Facility. Notwithstanding any other provision contained herein but subject to "**for cause**" audits, in no event will Atara request or be entitled to more than [*]. Each [*] will not [*]. For each additional [*] Atara requires such [*], Atara will be billed in accordance with the [*] rate set forth in the Work Order.

5.3 **Changes to Work Orders, Manufacturing Process, and Specifications.**

(a) **Changes to Work Orders**. If the scope of work of a Work Order changes, then the applicable Work Order may be amended as provided in this Section 5.3(a). If a required modification to a Work Order is identified by Atara or by Manufacturer, the identifying party will notify the other party in writing as soon as reasonably possible. Manufacturer will provide Atara with a change order containing a description of the required modifications and their effect on the scope, fees and timelines specified in the Work Order ("**Change Order**"), and will use reasonable efforts to do so [*] of receiving or providing such notice, as the case may be. No Change Order will be effective unless and until it has been signed by authorized representatives of both parties. If Atara does not approve such Change Order, and has not terminated the Work Order, but requests the Work Order to be amended to take into account the modification, then the parties will use reasonable efforts to agree on a Change Order that is mutually acceptable. If practicable, Manufacturer will continue to work under the existing Work Order during any such negotiations, provided such efforts would facilitate the completion of the work envisioned in the proposed Change Order, but will not commence work in accordance with the Change Order until it is authorized in writing by Atara. Atara will be responsible for all agreed upon additional costs and expenses related to any Change Order or continued performance under any existing Work Order, whether proposed by Atara or Manufacturer.

(b) **Changes to Process/Specifications**. Any amendment, change or other modification to the Manufacturing Process or Specifications for any Product must be approved in advance by Atara and will be made in accordance with the change control provisions of the applicable Quality Agreement, if any.

5.4 **Record and Sample Retention.**

(a) **Records**. Manufacturer will keep complete and accurate records (including reports, accounts, notes, data, and records of all information and results obtained from performance of Services) of all work done by it under this Agreement, in form and substance as specified in the applicable Work Order, the applicable Quality Agreement, and this Agreement (collectively, the "**Records**"). All such Records will be the property of Atara. Except as required by or necessary to comply with Applicable Law, Manufacturer will not transfer, deliver or otherwise provide any such Records to any party other than Atara, without the prior written approval of Atara. Records will be available at reasonable times for inspection, examination and copying by or on behalf of Atara. All original Records of the Development and Manufacture of Product under this Agreement will be retained and archived by Manufacturer in accordance with cGMP (if applicable) and Applicable Law, but in no case for less than a period of [*] following completion of the applicable Work Order. Upon Atara's request and at Atara's sole cost and expense, Manufacturer will [*] provide Atara with copies of such Records. [*] after completion of a Work Order, all of the aforementioned records will be sent to Atara or Atara's designee at Atara's sole cost and expense; provided, however, that Atara may elect to have such Records retained in Manufacturer's archives for an additional period of time at a reasonable charge to Atara. Manufacturer will retain copies of all of such Records and Atara will provide Manufacturer full access to all original Records if Manufacturer is required or compelled to furnish any of such original Records in connection with a regulatory inspection by any Authority or otherwise in connection with Applicable Law.

(b) **Sample Retention**. Manufacturer will take and retain, for such period and in such quantities as may be required by cGMP (if applicable) and the applicable Quality Agreement, samples of Product from the Manufacturing Process produced under this Agreement. Further, upon Atara's written request, Manufacturer will submit such samples to Atara at Atara's sole cost and expense.

5.5 **Regulatory Matters.**

(a) **Regulatory Approvals**. Atara will be responsible for obtaining, at its sole cost and expense, all regulatory and governmental approvals and permits necessary for Atara's use of any Product Developed and/or Manufactured under this Agreement, including investigational new drug application, biologics license application, new drug application, and abbreviated new drug application submissions and any analogous submissions filed with the appropriate Authority of a country other than the United States. Manufacturer will be responsible for providing Atara with all supporting data and information relating to the Development and/or Manufacture of Product necessary for obtaining such approvals, including all Records, raw data, reports, authorizations, certificates, methodologies, Batch Documentation, raw material specifications, SOPs or references to a drug master file or international equivalent, as the case may be, standard test methods, Certificates of Analysis, Certificates of Compliance and other documentation, in each case, in the possession or under the control of Manufacturer and applicable to the Development and Manufacture of Product (or any intermediate, or component of Product).

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(b) **Regulatory Inspections**. Manufacturer will permit Atara or its agents to be present and participate in any Authority's regulatory visit or inspection of the Facility with respect to (i) any Product of Atara Manufactured by Manufacturer pursuant to this Agreement or (ii) the Manufacturing Process. Manufacturer will (unless legally prohibited from doing so) give as much advance notice as possible to Atara of any such visit or inspection. Manufacturer will (unless legally prohibited from doing so) provide Atara with a copy of any report or other written communication received from such Authority in connection with such visit or inspection, and any written communication received from any Authority relating to any Product, the Facility (if it addresses or adversely affects the Development and/or Manufacture of Product) or the Manufacturing Process (which communication will be redacted to remove information pertaining to or affecting any other third party, if any), within [*] after receipt, and will consult with, and to the extent not legally prohibited, obtain approval from, Atara before responding to each such communication, which approval will not be unreasonably withheld, conditioned or delayed. Manufacturer will provide Atara with a copy of that portion of Manufacturer's final responses addressing the Manufacture of Product or the Manufacturing Process within [*] after submission to the applicable Authority.

5.6 **Waste Disposal**. The generation, collection, storage, handling, transportation, movement and release of hazardous materials and waste generated in connection with the Services will be the responsibility of Manufacturer [*].

5.7 **Safety Procedures**. Manufacturer will be solely responsible for implementing and maintaining health and safety procedures for the performance of Services and for the handling of any materials or hazardous waste used in or generated by the Services. Manufacturer, in consultation with Atara, will develop safety and handling procedures for API/Drug Substance and Product; provided, however, that Atara [*].

ARTICLE 6
TESTING AND ACCEPTANCE PROCESS

6.1 **Testing by Manufacturer**. The Product Manufactured under this Agreement will be Manufactured in accordance with the Manufacturing Process approved by Atara, and with cGMP (unless otherwise expressly stated in the applicable Work Order). Each Batch of Product will be sampled and tested by Manufacturer, a Permitted Subcontractor, or by a third party retained by Atara, against the Specifications, and the quality assurance department of Manufacturer will review the documentation relating to the Manufacture of the Batch and will assess if the Manufacture has taken place in compliance with cGMP (if applicable) and the Manufacturing Process.

6.2 **Provision of Records**. If, based upon such tests and documentation review, a Batch of Product conforms to the Specifications and was Manufactured according to cGMP (if applicable) and the Manufacturing Process, then a Certificate of Compliance will be completed and approved by the quality assurance department of Manufacturer. This Certificate of Compliance, a Certificate of Analysis, the Specifications, and a complete and accurate copy of the Batch records (collectively, the "**Batch Documentation**") for each Batch of Product will be delivered to Atara by a reputable overnight courier or by registered or certified mail, postage prepaid, return receipt required to verify delivery date. Upon request, Manufacturer will also deliver to

Atara, at Atara's sole cost and expense, all relevant raw data, reports, authorizations, certificates, methodologies, raw material specifications, SOPs, standard test methods, and other documentation, in each case, in the possession or under the control of Manufacturer and relating to the Manufacture of each Batch of Product. If Atara requires additional copies of such Batch Documentation, these will be provided by Manufacturer to Atara at Atara's sole cost and expense. Manufacturer will retain a copies of all of such Batch Documentation and Atara will provide Manufacturer full access to all original Batch Documentation if Manufacturer is required or compelled to furnish any of such original Batch Documentation in connection with a regulatory inspection by any Authority or otherwise in connection with Applicable Law.

6.3 **Review of Batch Documentation** . Atara will review the Batch Documentation for each Batch of Product and may test samples of the Batch of Product against the Specifications. Atara will notify Manufacturer in writing of its acceptance or rejection of such Batch within [*] of receipt of the complete Batch Documentation relating to such Batch. During this review period, the parties agree to respond promptly, but in any event within ten (10) days, to any reasonable inquiry or request for a correction or change by the other party with respect to such Batch Documentation.

6.4 [*]

6.5 **Disputes**. In case of any disagreement between the parties as to whether Product conforms to the applicable Specifications or cGMP (if applicable), the quality assurance representatives of the parties will attempt in good faith to resolve any such disagreement and Atara and Manufacturer will follow their respective SOPs to determine the conformity of the Product to the Specifications and cGMP (if applicable). If the foregoing discussions do not resolve the disagreement in a reasonable time (which will not exceed [*]), a representative sample of such Product and/or relevant documentation will be submitted to an independent testing laboratory (in the case of an alleged failure to meet Specifications) and/or independent cGMP consultant (in the case of an alleged failure to comply with cGMP), as appropriate, that are, in each case, mutually agreed upon by the parties for tests and final determination of whether such Product conforms with such Specifications and/or cGMP (if applicable). The laboratory must meet cGMP (if applicable). The laboratory and consultant, as applicable, must be of recognized standing in the industry, and consent to the appointment of such laboratory and consultant will not be unreasonably withheld or delayed by either party. Such laboratory will use the test methods contained in the applicable Specifications. The determination of conformance by such laboratory and/or cGMP consultant, as applicable, with respect to all or part of such Product will be final and binding on the parties absent manifest error. The fees and expenses of the laboratory and/or consultant, as applicable, incurred in making such determination will be paid by the party against whom the determination is made.

6.6 **Product Non-Compliance and Remedies.**

If the parties agree or if determined in accordance with Section 6.5 above that a Batch of Product (i) fails to conform to the Specifications, (ii) was not Manufactured in compliance with cGMP (if applicable) or (iii) was not Manufactured in compliance with the Manufacturing Process (as modified by any Planned Deviations, if any), then, then Manufacturer will, [*]:

(A) [*] (as evidenced by supporting documentation reasonably satisfactory to Manufacturer), including the [*]; or

(B) [*].

Moreover, the parties will meet to discuss, evaluate and analyze the reasons for and implications of the failure to comply with the Specifications, cGMP (if applicable) and/or the Manufacturing Process and will decide whether to proceed with or to amend the applicable Work Order via a Change Order, or to terminate such Work Order. For clarity, whether the parties agree a Batch is non-conforming or if a Batch is determined to be non-conforming pursuant to Section 6.5, in no event will Manufacturer be responsible for [*] under clause (A) above or for [*] under clause (B) above, if the failure of the Batch to conform is caused by any of the (x) [*], (y) [*], or (z) [*] (except, in each case, to the extent caused by (i) [*] or (ii) [*]).

6.7 **Disposition of Non-Conforming Product**. The ultimate disposition of non-conforming Product will be the responsibility of Atara's quality assurance department.

ARTICLE 7
SHIPPING AND DELIVERY

Manufacturer agrees not to ship Product to Atara or its designee until it has received a written approval from Atara or Atara's designee to release and ship. Manufacturer will ensure that each Batch will be delivered to Atara or Atara's designee, (a) on the delivery date and to the destination agreed to by the parties; and (b) in accordance with the instructions for shipping and packaging agreed to by the parties in the applicable Work Order, or as otherwise agreed to by the parties in writing. Delivery terms will be [*] (Incoterms 2010). A bill of lading will be furnished to Atara with respect to each shipment.

ARTICLE 8
FEES AND PAYMENTS

8.1 **Price**. The price of Product and/or the fees and expenses for the performance of Services will be set forth in the applicable Work Order. All dollar ($) amounts specified in this Agreement are United States dollar amounts and all payments to be made under this Agreement will be made in United States dollars.

8.2 **Invoice**. Manufacturer will invoice Atara according to the invoice schedule in the applicable Work Order, referencing in each such invoice the Work Order(s) to which such invoice relates.Unless otherwise specified in the applicable Work Order, payment of undisputed amounts (other than amounts under invoices disputed with respect to a non-conforming Batch, which dispute will be resolved pursuant to Section 6.5) will be due [*] after Atara's receipt of electronic transmission of the invoice (and reasonable supporting documentation pertaining to any disbursements). Payments will be made in United States Dollars. A [*] service charge will be applied to all undisputed overdue balances (other than overdue balances under invoices disputed with respect to a non-conforming Batch, which dispute will be resolved pursuant to Section 6.5).

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8.3 **Payments**. Atara will make all payments pursuant to this Agreement by wire transfer in immediately available funds to a bank account designated in writing by Manufacturer in the invoice associated with the applicable Work Order.

8.4 **Financial Records**. Manufacturer will keep accurate records of all Services performed and invoice calculations, and, upon the request of Atara, will permit Atara or its duly authorized agents to examine such records during normal business hours and in accordance with the terms of Section 5.2(d) for the purpose of verifying the correctness of all such calculations.

8.5 **Taxes**. All duty, sales, use or excise taxes imposed by any governmental entity that apply to the provision of Services will be borne solely by Atara (other than taxes based upon the income of Manufacturer).

ARTICLE 9
INTELLECTUAL PROPERTY RIGHTS

9.1 **Atara Technology**. All rights to and interests in Atara Technology will remain solely in Atara and no right or interest therein is transferred or granted to Manufacturer under this Agreement. Manufacturer acknowledges and agrees that it does not acquire a license or any other right to Atara Technology except for the limited purpose of carrying out its duties and obligations under this Agreement and that such limited, non-exclusive, license will expire upon the completion of such duties and obligations or the termination or expiration of this Agreement, whichever is the first to occur.

9.2 **Manufacturer Technology**. All rights to and interests in Manufacturer Technology will remain solely in Manufacturer and, except for the limited, non-exclusive license set forth in this Agreement, no right or interest therein is transferred or granted to Atara under this Agreement. Manufacturer hereby grants to Atara a non-exclusive, [*],, license to Atara, [*] use and modify Manufacturer Technology listed on Schedule I of this Agreement (" **Scheduled Manufacturer Technology**") to the extent necessary or useful to [*] Product. Manufacturer covenants and agrees that in the event Manufacturer Technology is used in the Manufacture of Product under this Agreement that is not listed on Schedule I of this Agreement, Manufacturer hereby grants to Atara a non-exclusive, [*] license to Atara [*] to use and modify such Manufacturer Technology to the extent necessary or useful to [*] Product.

9.3 **Improvements**. Manufacturer agrees (a) to promptly disclose all patentable Improvements; (b) that all Improvements will be the sole and exclusive property of Atara; and (c) that Manufacturer will assign and does assign all Improvements to Atara (or its designee) [*]. Manufacturer will take such steps as Atara may reasonably request (at Atara's sole cost and expense) to vest in Atara (or its designee) ownership of the Improvements.

9.4 **Non-Exclusive License**. Atara hereby grants to Manufacturer a non-exclusive, perpetual, irrevocable, fully paid-up, worldwide license, with the right to sub-license, to use Improvements made in the performance of the Services that relate to manufacturing technology, production methods, purification processes and filling processes generally or that are otherwise applicable to performance of development and manufacturing services of products that do not

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involve (a) [*] or (b) use other Confidential Information of Atara (collectively, "**Manufacturing Improvements**").

9.5 **Patent Filings**. Atara will have the exclusive right and option, but not the obligation, to prepare, file, prosecute, maintain and defend, at its sole expense, any patents that claim or cover the Improvements.

9.6 **Technology Transfer**. If Atara elects to Manufacture Product, [*], then [*] in order to Manufacture Product. Atara will compensate Manufacturer for such assistance as set forth in the Work Order attached hereto.

ARTICLE 10
CONFIDENTIALITY

10.1 **Definition**. "**Confidential Information**" means any and all non-public scientific, technical, financial regulatory or business information, or data or trade secrets in whatever form (written, oral or visual) that is furnished or made available by one party (the "**Discloser**") to the other (the " **Recipient**") or developed by either Party under this Agreement. Confidential Information of Atara includes (x) Atara Materials, Atara Technology and Improvements; (y) development and marketing plans, regulatory and business strategies, financial information, and forecasts of Atara; and (z) all information of third parties that Atara has an obligation to keep confidential. Confidential Information of Manufacturer includes (w) this Agreement, (x) Manufacturer Technology; (y) development and marketing plans, regulatory and business strategies, financial information, and forecasts of Manufacturer; and (z) all information of third parties that Manufacturer has an obligation to keep confidential.

10.2 **Confidentiality Obligations**. Recipient agrees to (a) hold in confidence all Discloser's Confidential Information, and not disclose Discloser's Confidential Information except as expressly provided in Sections 5.5(a) and 10.3, without the prior written consent of Discloser; (b) use Discloser's Confidential Information solely to carry out Recipient's obligations under this Agreement; (c) treat Discloser's Confidential Information with the same degree of care Recipient uses to protect Recipient's own confidential information but in no event with less than a reasonable degree of care; and (d) reproduce Discloser's Confidential Information solely to the extent necessary to carry out Recipient's obligations under this Agreement and any agreements executed pursuant to this Agreement, with all such reproductions being considered Discloser's Confidential Information.

10.3 **Permitted Disclosure**. Recipient may provide Discloser's relevant Confidential Information to its Affiliates, and to its and their directors, employees, consultants (including, with respect to Atara, the Man-In-Plant), contractors and agents; provided, however, that in each case (a) each of such Affiliates, directors, employees, consultants, contractors and agents have a bona fide need to know Discloser's Confidential Information to perform its obligations under this Agreement (including any Work Order executed hereunder), (b) are bound by written obligations of confidentiality with respect to the Discloser's Confidential Information that are at least as restrictive as those set forth in this Agreement; and (c) Recipient remains liable for the compliance by and breach of such Affiliates, employees, consultants (including, with respect to Atara, the Man-In-Plant), contractors and agents with such obligations. Recipient may also

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disclose Discloser's Confidential Information to third parties only to the extent such disclosure is required to comply with Applicable Law, the rules of any stock exchange or listing entity, or to defend or prosecute litigation; provided, that to the extent not prohibited by Applicable Law, Recipient provides prior written notice of such disclosure to Discloser, takes all reasonable and lawful actions to avoid or minimize the degree of such disclosure, and cooperates reasonably with Discloser in any efforts to seek a protective order. If disclosure of Discloser's Confidential Information is nevertheless required, Recipient will disclose only that portion of Discloser's Confidential Information that is legally required and then only to those parties legally required. Furthermore, (i) Atara may disclose Confidential Information of Manufacturer relating to the Development and/or Manufacture of Product to [*], and who in each case have a specific need to know such Confidential Information and who are bound by a like obligation of confidentiality and restrictions on use; provided such Confidential Information of Manufacturer shall not include or reference any of the information specified on Exhibit C hereto; and (ii) Manufacturer may disclose the existence and key financial terms of this Agreement and the fact that Manufacturer is performing the Services for Atara to [*], and who in each case have a specific need to know such Confidential Information and who are bound by a like obligation of confidentiality and restrictions on use.

10.4 **Exceptions**. Recipient's obligations of non-disclosure, non-use and confidentiality under this Agreement will not apply to any portion of Discloser's Confidential Information that Recipient can demonstrate, by competent proof:

(a) is generally known to the public at the time of disclosure or becomes generally known through no wrongful act on the part of Recipient or its Affiliates;

(b) is in Recipient's or its Affiliates' possession at the time of disclosure other than as a result of Recipient's or its Affiliate's breach of any legal obligation, as demonstrated by competent and contemporaneous written documentation;

(c) becomes known to Recipient or its Affiliates on a non-confidential basis through disclosure by sources other than the Discloser having the legal right to disclose such Confidential Information; or

(d) is independently developed by Recipient or its Affiliates without reference to or reliance upon Discloser's Confidential Information, as demonstrated by competent and contemporaneous written documentation.

If Recipient is required by a governmental authority or by order of a court of competent jurisdiction to disclose any Confidential Information, Recipient will give Discloser prompt written notice of such requirement or order and Recipient will take all reasonable and lawful actions, at Discloser's cost and expense, to avoid or minimize the degree of such disclosure. Recipient will cooperate reasonably with Discloser, at Discloser's cost and expense, in any efforts to seek a protective order. If disclosure of Discloser's Confidential Information is nevertheless required, Recipient will disclose only that portion of Discloser's Confidential Information that is legally required and then only to those parties legally required.

10.5 **Injunctive Relief**. Recipient agrees that monetary damages would not be a sufficient remedy for any threatened or actual breach by Recipient or its Affiliates, and its and their

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directors, employees, consultants, contractors and agents, of the obligations of confidentiality and limitations on Use of Confidential Information in this Article 10 and that Discloser, without posting any bond and without liability should relief be denied, modified or vacated, is entitled to equitable relief including an injunction to stop any actual breach. Discloser is entitled to pursue all available remedies, at law or in equity, alternatively or cumulatively, in the event of a threatened or actual breach of this Article 10.

ARTICLE 11
REPRESENTATIONS AND WARRANTIES

11.1 **Manufacturer Representations and Warranties**. Manufacturer represents and warrants to Atara that:

(a) it has the full power and right to enter into this Agreement and that there are no outstanding agreements, assignments, licenses, encumbrances or rights of any kind held by other parties, private or public, that are inconsistent with the provisions of this Agreement;

(b) the execution and delivery of this Agreement by Manufacturer has been authorized by all requisite corporate action and this Agreement is and will remain a valid and binding obligation of Manufacturer, enforceable in accordance with its terms, subject to laws of general application relating to bankruptcy, insolvency and the relief of debtors;

(c) the Services will be performed, in all material respects, with requisite care, skill and diligence, by individuals who are appropriately trained and qualified; and in accordance with Applicable Law and industry standards and all applicable provisions of Atara's written policies and procedures that have been provided to Manufacturer and set forth in the applicable Work Order.

(d) the use of the Manufacturer Technology does not violate any patent, trade secret or other proprietary or intellectual property rights of any third party and it will notify Atara in writing should it become aware of any claims asserting such violation;

(e) to the best of Manufacturer's knowledge, the performance of the Services will not violate any patent, trade secret or other proprietary or intellectual property rights of any third party and it will notify Atara in writing should it become aware of any claims asserting such violation. For clarity, the Manufacturer makes no representations or warranties about the intellectual property status of any Atara Technology or its use in connection with the Services;

(f) at the time it is delivered to Atara pursuant to the third sentence of Article 7, the Product Manufactured under this Agreement will (i) have been Manufactured in accordance with cGMP (if applicable) and all other Applicable Law, and subject to Planned Deviations and/or any Change Orders, the Manufacturing Process, the applicable Quality Agreement (if any), and Specifications; and

(g) Manufacturer, its approved subcontractors, and each of their respective officers and directors, as applicable, and any person used by Manufacturer or its approved subcontractors to perform Services under this Agreement: (a) have not been debarred and are not

subject to a pending debarment pursuant to section 306 of the United States Food, Drug and Cosmetic Act, 21 U.S.C. § 335a; (b) are not ineligible to participate in any federal and/or state healthcare programs or federal procurement or non-procurement programs (as that term is defined in 42 U.S.C. 1320a-7b(f)); (c) are not disqualified by any government or regulatory authorities from performing specific services, and are not subject to a pending disqualification proceeding; and (d) have not been convicted of a criminal offense related to the provision of healthcare items or services and are not subject to any such pending action. Manufacturer will notify Atara [*] if Manufacturer, its approved subcontractors, or any person used to perform Services under this Agreement, or any of their respective officers or directors, as applicable, is, to the best of Manufacturer's knowledge, subject to the foregoing, or if any action, suit, claim, investigation, or proceeding relating to the foregoing is pending, or to Manufacturer's knowledge, is threatened.

11.2 **Atara Representations and Warranties**. Atara represents and warrants to Manufacturer that:

(a) it has the full power and right to enter into this Agreement and that there are no outstanding agreements, assignments, licenses, encumbrances or rights held by other parties, private or public, that are inconsistent with the provisions of this Agreement;

(b) the execution and delivery of this Agreement by Atara has been authorized by all requisite corporate action and this Agreement is and will remain a valid and binding obligation of Atara, enforceable in accordance with its terms, subject to laws of general application relating to bankruptcy, insolvency and the relief of debtors; and

(c) to the best of Atara's knowledge, none of (i) the Atara Materials, (ii) any intermediates, components, or derivatives of Atara Materials, (iii) Product or any intermediates, components or derivatives of Product, (iv) Specifications, (v) the Atara Technology or (vi) any intellectual property rights in any of (i) through (v), used in the Services infringes infringe any proprietary or intellectual property rights of any third party; and Atara will notify Manufacturer in writing should it become aware of any claims asserting such violation.

11.3 **Disclaimer of Other Representations and Warranties**. EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER PARTY MAKES ANY REPRESENTATIONS OR EXTENDS ANY WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

ARTICLE 12
INDEMNIFICATION

12.1 **Indemnification by Manufacturer**. Manufacturer will indemnify, defend and hold harmless Atara, its Affiliates and its and their respective officers, directors, employees, subcontractors, and agents (collectively, the "**Atara Indemnitees**") against any and all losses, damages, liabilities or expenses (including reasonable attorneys' fees and other costs of defense) (collectively, "**Losses**") in connection with any and all actions, suits, claims or demands (collectively, "**Claims**") that may be brought or instituted against any Atara Indemnitee by any

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third party to the extent they arise out of or relate to any (a) [*]; or (b) [*], except in the case of (a) or (b), to the extent any of such Claims arise out of or relate to (i) [*], (ii) [*] or (iii) [*].

12.2 **Indemnification by Atara** . Atara will indemnify, defend and hold harmless Manufacturer, its Affiliates and its and their respective officers, directors, employees, Permitted Subcontractors, other approved third parties, and agents (collectively, the "**Manufacturer Indemnitees**") against any and all Losses in connection with any and all Claims that may be brought or instituted against any Manufacturer Indemnitee by any third party to the extent they arise out of or relate to (a) [*] (b)[*] or (c) [*].

12.3 **Indemnification Procedures: Calculation of Losses** . Each party must notify the other party [*] of receipt of any claims made for which the other party might be liable under Section 12.1 or 12.2, as the case may be. Subject to Section 12.4, the indemnifying party will have the sole right to defend, negotiate, and settle such Claims. The indemnified party will be entitled to participate in the defense of such matter and to employ counsel at its expense to assist in such defense; provided, however, that the indemnifying party will have final decision-making authority regarding all aspects of the defense of any Claim, so long as the indemnifying party is solely responsible for fully indemnifying the indemnified party and the indemnified party is fully and finally released from any liability in respect of such Claim. The party seeking indemnification will provide the indemnifying party with such information and assistance as the indemnifying party may reasonably request, at the expense of the indemnifying party.

12.4 **Mitigation**. Each indemnified party shall take all reasonable steps to mitigate Losses for which indemnification may be claimed by them pursuant to this Agreement upon and after becoming aware of any event that could reasonably be expected to give rise to any such Losses.

12.5 **No Duplicate Recovery between Parties.**

Any liability for indemnification under this Article 12 shall be determined without duplication of recovery by reason of the state of facts giving rise to such liability.

12.6 **Settlement**. Neither party will be responsible or bound by any settlement of any claim or suit made without its prior written consent; provided, however, that the indemnified party will not unreasonably withhold, condition, or delay such consent. If a settlement contains an absolute waiver of liability for the indemnified party, and each party has acted in compliance with the requirements of this Article 12, then the indemnified party's consent will be deemed given. If requested by the indemnifying party, the indemnified party will cooperate with the indemnifying party and its counsel in contesting any Claim or, if appropriate and related to the Claim in question, in making any counterclaim against the third party claimant, or any cross complaint against any other party (other than the indemnified party or its Affiliates); provided that the indemnifying party shall reimburse the indemnified party for its reasonable out-of-pocket expenses.

12.7 **Limitation of Liability**. NEITHER PARTY WILL BE LIABLE UNDER ANY LEGAL THEORY (WHETHER TORT, CONTRACT OR OTHERWISE) FOR SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES ARISING OUT OF OR RELATED TO THIS AGREEMENT OR THE EXERCISE OF ITS RIGHTS HEREUNDER,

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INCLUDING LOST PROFITS ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT, HOWEVER CAUSED, EVEN IF THE PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, EXCEPT AS A RESULT OF A BREACH OF THE CONFIDENTIALITY AND NON-USE OBLIGATIONS IN SECTION 10. NOTHING IN THIS SECTION 12.7 IS INTENDED TO (A) LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF EITHER PARTY OR (B) APPLY TO AMOUNTS PAYABLE TO MANUFACTURER BY ATARA UNDER THIS AGREEMENT, INCLUDING UNDER ANY WORK ORDER OR UNDER ARTICLE 14. ATARA 's MAXIMUM AGGREGATE LIABILITY WITH RESPECT TO USE OF ANY SERVICE WILL NOT EXCEED [*] AND THE MANUFACTURER 'S MAXIMUM AGGREGATE LIABILITY WITH RESPECT TO THE PROVISION OF ALL SERVICES UNDER OR IN CONNECTION WITH THIS AGREEMENT WILL NOT EXCEED [*].

ARTICLE 13
INSURANCE

13.1 **Manufacturer Insurance**. Manufacturer will secure and maintain in full force and effect throughout the term of this Agreement (and for at least five (5) years thereafter for claims made coverage), the following minimum insurance coverage with financially sound and nationally reputable insurers with a minimum A. M. Best Rating of A-, VII:

(a) *Workers' Compensation*, including coverage for occupational disease, with benefits determined by statute, including Employers' Liability of at least [*];

(b) *Commercial General Liability* and *Personal/Advertising Injury*, including coverage for contractual liability assumed by Manufacturer and coverage for Manufacturer's independent contractor(s), with at least [*] combined single limit for bodily injury and property damage per occurrence, and a general aggregate limit of at least [*];

(c) *Products Liability*, exclusive of the coverage provided by the Commercial General Liability policy, with at least [*] per occurrence and an aggregate limit of at least [*];

(d) *Business Automobile Liability and including non-owned and hired auto liability* with at least [*] per accident;

(e) *Commercial General Liability, Employers' Liability and Business Automobile Liability* limits may be met with any combination of primary and excess or Umbrella Liability Insurance policy limits to provide at least [*] per occurrence, and a general aggregate limit of at least [*];

(f) "*Special Form*" *Property*, valued at replacement cost, covering loss or damage to the Facility and Atara's property and materials in the care, custody, and control of Manufacturer whether at the Facility, or otherwise with Atara named as loss payee for Atara's property and materials; and

(g) *Crime Insurance* with at least [*] per occurrence including Employee Dishonesty.

13.2 **General**. Liability policies written on a claims-made basis will have a retroactive date no later than the Effective Date of this Agreement. Manufacturer agrees to [*]. Coverage territory will include [*].

13.3 **Intentionally Omitted.**

13.4 **Evidence of Insurance**. Manufacturer will, upon the execution of this Agreement, after each renewal or material change in coverage, and at any time upon request by Atara, promptly provide Atara with a Certificate of Insurance evidencing coverage required under this Section 13, [*] and providing that [*] advance written notice will be given to Atara of any material change or [*] cancellation in coverage or limits. Upon Atara's request, Manufacturer agrees to provide copies of required insurance policies. Manufacturer agrees to maintain, and to require permitted subcontractors to maintain, other types of insurance and/or additional amounts as is reasonable within the industry providing comparable services.

13.5 **Insurance Information**. Manufacturer will comply, at Atara's expense, with reasonable requests for information made by Atara's insurance provider representative(s), including permitting such representative(s) to inspect the Facility during operational hours and upon reasonable notice to Manufacturer. In regard to such inspections, the representative(s) will adhere to such guidelines and policies, including those pertaining to safety and non-disclosure as Manufacturer may reasonably require.

ARTICLE 14
TERM AND TERMINATION

14.1 **Term**. This Agreement will take effect as of the Effective Date and, unless earlier terminated pursuant to this Section 14, will expire on the later of (a) three (3) years from the Effective Date; or (b) the completion of Services under all Work Orders executed by the parties prior to the third anniversary of the Effective Date. The term of this Agreement may be extended by Atara continuously for additional three (3) year periods upon written notice to Manufacturer at least thirty (30) days prior to the expiration of the then-current term.

14.2 **Termination by Atara**. Atara will have the right, in its sole discretion, to terminate this Agreement or any Work Order (a) upon [*] prior written notice to Manufacturer; or (b) immediately upon written notice if (i) Manufacturer is or will be unable to perform the Services in accordance with the terms set forth in the applicable Work Order (as may be amended pursuant to Section 5.3(a)); or (ii) Manufacturer fails to obtain or maintain any material governmental licenses or approvals required in connection with the Services that in Atara's reasonable, good faith judgment would have a material adverse impact on the Services.

14.3 **Termination by Either Party**. Either party will have the right to terminate this Agreement or any signed Work Orders that are pending by written notice to the other party, upon the occurrence of any of the following:

(a) the other party files a petition in bankruptcy, or enters into an agreement with its creditors, or applies for or consents to the appointment of a receiver or trustee, or makes an

assignment for the benefit of creditors, or becomes subject to involuntary proceedings under any bankruptcy or insolvency law (which proceedings remain undismissed for [*] days);

(b) the other party fails to start and diligently pursue the cure of a material breach of this Agreement within [*] days after receiving written notice from the other party of such breach; or

(c) a *force majeure* event that will, or continues to, prevent performance (in whole or substantial part) of this Agreement or any pending Work Order for a period of at least [*] days. In the case of a *force majeure* event relating solely to a pending Work Order, the right to terminate will be limited to such Work Order.

14.4 **Effect of Termination**. Manufacturer will, upon receipt of a termination notice from Atara under Section 14.2 or Section 14.3, promptly cease performance of the applicable Services and will [*]. In particular, Manufacturer will use its reasonable efforts to:

(a) [*];

(b) [*] inform Atara of any irrevocable commitments made in connection with any pending Work Order(s) prior to termination;

(c) [*] return to the vendor for a refund all unused, unopened materials in Manufacturer's possession that are related to any pending Work Order; provided, that Atara will have the option, but not the obligation, to take possession of any such materials;

(d) [*] inform Atara of the cost of any remaining unused, unreturnable materials ordered pursuant to any pending Work Order(s), and either deliver such materials to Atara (or its designee) or properly dispose of them, as instructed by Atara; and

(e) [*].

Notwithstanding anything to the contrary herein, termination or expiration of this Agreement in whole or in part will be without prejudice to (i) Manufacturer's right to receive all fees and expenses accrued and unpaid through the Effective Date of such termination or expiration other than such fees and expenses disputed in good faith by Atara or (ii) any provisions that expressly or necessarily call for performance (including the Manufacturer's right to reimbursement for fees and expenses incurred in connection with such performance) after such termination or expiration.

14.5 **Damages Upon Termination**. Atara acknowledges and hereby agrees that Manufacturer has dedicated significant resources, including human capital to the Development and Manufacture of the Product, including prior to the Effective Date. Accordingly, if Atara terminates this Agreement under Section 14.2(a), Atara will pay Manufacturer the product of (x) [*] and (y) [*] as of the date Manufacture receives Atara's notice that it has decided to terminate this Agreement pursuant to Section 14.2(a):

[*]	[*]	[*]
	[*]	[*]
	[*]	[*]
	[*]	[*]

The amounts payable by Atara under this Section 14.5 are intended to compensate the Manufacturer for damages related to early termination of this Agreement. [*]. Notwithstanding anything herein to the contrary, this Section 14.5 shall terminate and be of no further effect upon [*] under this Agreement.

14.6 **Return of Materials/Confidential Information**. Upon the expiration or termination of this Agreement for any reason, Recipient agrees, except as otherwise provided in this Agreement and to the extent not prohibited by Applicable Law, to return to Discloser all documentation that is not required by law to be retained by the Manufacturer or other tangible evidence or embodiment of Discloser's Confidential Information and not to use such Confidential Information, unless otherwise agreed. Notwithstanding the foregoing, Recipient may retain one archival copy of Discloser's Confidential Information in order to monitor Recipient's ongoing obligations of confidentiality and limitations on Use of Confidential Information under this Agreement; provided, that such archival copy must only be accessed to the extent required comply with Applicable Law, be kept confidential in accordance with and remain subject to the terms of Article 10,and be stored in a secure location, segregated from Recipient's regular files. Manufacturer will also [*] return all Atara Materials, Atara Equipment, retained samples, data, reports and other property, information and know-how in recorded form that was provided by Atara, or developed in the performance of the Services, that are owned by or licensed to Atara; provided that Atara will be responsible for all reasonable and documented costs and expenses associated with the return to Atara of Atara Materials, Atara Equipment and/or Atara Confidential Information by Manufacturer pursuant to this Agreement.

14.7 **Inventories**. Upon expiration or termination of this Agreement or a pending Work Order, Atara at its discretion (a) may purchase from Manufacturer any existing inventory of Product ordered under this Agreement that conforms to the Specifications and is Manufactured in accordance with cGMP (if applicable) and the Manufacturing Process at the price for such Product set forth in the applicable Work Order, plus any additional fee determined in accordance with Section 14.5; and (b) may either (i) purchase any such Product in process held by Manufacturer as of the date of the termination, at a price to be mutually agreed (it being understood that such price will reflect, on a pro rata basis, work performed and non-cancelable out-of-pocket expenses actually incurred by Manufacturer with respect to the Manufacture of such in-process Product); or (ii) direct Manufacturer to dispose of such material at Atara's cost. Notwithstanding the option in the preceding sentence, upon expiration or termination of this

Agreement or a pending Work Order, Atara will purchase from Manufacturer, all inventory of Product ordered and Manufactured, at the price for such Product set forth in the applicable Work Order, plus any additional fee determined in accordance with Section 14.5, if applicable, [*].

14.8 **Payment Reconciliation**. Within [*] after the close-out of a Work Order, Manufacturer will provide to Atara a written statement of all work performed by it in connection with the terminated Work Order, breakdown of the costs associated with that work, and a final invoice for that Work Order.[*].

14.9 **Survival**. Expiration or termination of this Agreement for any reason will not relieve either party of any right or obligation accruing prior to such expiration or termination. Further, the provisions of Sections [*], and any obligation, or liability of either party under this Agreement or under any ancillary agreement executed in connection herewith, or any subsequent addenda hereto or thereto that by its nature and intent remains valid after termination or expiration will survive any termination or expiration of this Agreement; provided, however, that Sections 11.1, 11.2, and 11.3 shall survive until [*] such termination or expiration.

ARTICLE 15
MISCELLANEOUS

15.1 **Independent Contractor**. All Services will be rendered by Manufacturer as an independent contractor for federal, state and local income tax purposes and for all other purposes. Manufacturer will not in any way represent itself to be a partner or joint venturer of or with Atara. This Agreement does not create an employer-employee relationship between Atara on the one hand and Manufacturer or any employee, subcontractors, Affiliate of Manufacturer, or any Manufacturer personnel on the other. Manufacturer is acting under this Agreement as an independent contractor with full power and authority to determine the means, manner and method of performance of Manufacturer's duties. Manufacturer will be responsible for and will withhold and/or pay any and all applicable federal, state or local taxes, payroll taxes, workers' compensation contributions, unemployment insurance contributions, or other payroll deductions from the compensation of Manufacturer's employees and other Manufacturer personnel. Manufacturer understands and agrees that it is solely responsible for such matters and that it will indemnify Atara and hold Atara harmless from all claims and demands in connection with such matters.

15.2 ***Force Majeure***. Except as otherwise expressly set forth in this Agreement, neither party will have breached this Agreement for failure or delay in fulfilling or performing any term of this Agreement when such failure or delay is caused by or results from causes beyond the reasonable control of the affected party, including fire, floods, embargoes, shortages, epidemics, quarantines, war, acts of war (whether war be declared or not), insurrections, riots, civil commotion, strikes, acts of God or acts, omissions, or delays in acting, by any governmental authority ("***force majeure***"). The party affected by any event of *force majeure* will promptly notify the other party, explaining the nature, details and expected duration of the *force majeure* event. Such party will also notify the other party from time to time as to when the affected party reasonably expects to resume performance in whole or in part of its obligations under this Agreement, and to notify the other party of the cessation of any such event. A party affected by an event of *force majeure* will use its reasonable efforts to remedy, remove, or mitigate such

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event and the effects of it with all reasonable dispatch. If a party anticipates that an event of *force majeure* may occur, such party will notify the other party of the nature, details and expected duration of the *force majeure* event. Upon termination of the event of *force majeure*, the performance of any suspended obligation or duty will promptly recommence.

15.3 **Public Statements**. Except to the extent required by applicable law or regulation or the rules of any stock exchange or listing agency, neither party will make any public statement or release concerning this Agreement or the transactions contemplated by this Agreement, or use the other party's name or the name of any Affiliate of the other party in any form of advertising, promotion or publicity, without obtaining the prior written consent of such party.

15.4 **Notices**. All notices must be in writing and sent to the address for the recipient set forth in this Agreement below or at such other address as the recipient may specify in writing under this procedure. All notices must be given by (a) personal delivery, with receipt acknowledged; or (b) prepaid certified or registered mail, return receipt requested; or (c) prepaid recognized next business day or express delivery service. Notices will be effective upon receipt or at a later date stated in the notice.

If to Manufacturer, to:

7513 Connelley Drive, Suite I
Hanover MD 21076

Attention: CEO

If to Atara, to:

701 Gateway Blvd., Suite 200
South San Francisco, CA 94080

Attention: CEO

15.5 **Assignment**. This Agreement may not be assigned or otherwise transferred by either party without the prior written consent of the other party; provided, however, that Atara may, without such consent, but with notice to the Manufacturer, assign this Agreement, in whole or in part, (a) in connection with the transfer or sale of all or substantially all of its assets or the line of business or Product to which this Agreement relates; (b) to a successor entity or acquirer in the event of a merger, consolidation or change of control; or (c) to any Affiliate capable of meeting its financial obligations under this Agreement, as determined in good faith by Atara. Any purported assignment in violation of the preceding sentence will be void. Any permitted assignee will assume the rights and obligations of its assignor under this Agreement.

15.6 **Entire Agreement**. This Agreement, together with the attached Appendices and any fully-signed Work Orders, each of which are incorporated into this Agreement, constitute the entire agreement between the parties with respect to the specific subject matter of this Agreement and all prior agreements with respect such subject matter are superseded.

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15.7 **No Modification**. This Agreement and and/or any Work Order or Quality Agreement may be changed only by a writing signed by authorized representatives of each party.

15.8 **Severability; Reformation**. Each provision in this Agreement is independent and severable from the others, and no provision will be rendered unenforceable because any other provision is found by a proper authority to be invalid or unenforceable in whole or in part. If any provision of this Agreement is found by such an authority to be invalid or unenforceable in whole or in part, such provision will be changed and interpreted so as to best accomplish the objectives of such unenforceable or invalid provision and the intent of the parties, within the limits of applicable law.

15.9 **Governing Law**. This Agreement and any disputes arising out of or relating to this Agreement will be governed by, construed and interpreted in accordance with the internal laws of the laws of the State of New York, U.S.A., without regard to any choice of law principle that would require the application of the law of another jurisdiction. The parties expressly reject any application to this Agreement of (a) the United Nations Convention on Contracts for the International Sale of Goods; and (b) the 1974 Convention on the Limitation Period in the International Sale of Goods, as amended by that certain Protocol, done at Vienna on April 11, 1980.

15.10 **Waiver**. Any delay in enforcing a party's rights under this Agreement, or any waiver as to a particular default or other matter, will not constitute a waiver of such party's rights to the future enforcement of its rights under this Agreement, except with respect to an express written waiver relating to a particular matter for a particular period of time signed by an authorized representative of the waiving party, as applicable.

15.11 **No Benefit to Third Parties** . The representations, warranties, covenants and agreements set forth in this Agreement are for the sole benefit of the parties hereto and their successors and permitted assigns, and they will not be construed as conferring any rights on any other persons.

15.12 **No Strict Construction; Headings**. This Agreement has been prepared jointly and will not be strictly construed against either party. The section headings are included solely for convenience of reference and will not control or affect the meaning or interpretation of any of the provisions of this Agreement. The words "include," "includes" and "including" when used in this Agreement are deemed to be followed by the phrase "but not limited to".

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15.13 **SEC Filings**. If Atara determines that it is legally required to file this Agreement with the Securities and Exchange Commission (SEC), Atara will use commercially reasonable efforts to seek confidential treatment of the terms of this Agreement pursuant to Applicable Law, it being understood that the SEC ultimately will decide whether to grant such request for confidential treatment. Atara will provide the draft confidential treatment request to Manufacturer with the proposed filing at [*] in advance of submission and will in good faith make commercially reasonable efforts to redact any such filing in accordance with Manufacturer's reasonable instructions.

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

[Remainder of page left blank intentionally]

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IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the date first above written.

ATARA BIOTHERAPEUTICS, INC.		**COGNATE BIOSERVICES, INC.**	
By	/s/ John McGrath	By	/s/ J. Kelly Ganjei
Print Name	John McGrath	Print Name	J. Kelly Ganjei
Title	CFO	Title	CEO

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APPENDIX A
INITIAL WORK ORDER
(Separately Attached)

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APPENDIX B
FORM OF
WORK ORDER

THIS WORK ORDER is by and between ATARA BIOTHERAPEUTICS, INC. ("Atara") and COGNATE BIOSERVICES, INC. ("Manufacturer"), will be effective as of the last date of signature below, and upon execution will be incorporated into the Development and Manufacturing Services Agreement between Atara and Manufacturer dated [*INSERT DATE*] (the "Agreement"). Capitalized terms in this Work Order will have the same meanings as set forth in the Agreement.

Atara hereby engages Manufacturer to provide Services, as follows:

1. **API/Drug Substance and Product.**

   Describe the specific API/Drug Substance(s) and Product(s).

2. **Services.** Manufacturer will provide the following Services to Atara:

   Describe the specific Services to be conducted by Manufacturer or attach Manufacturer's proposal.

3. **Facilit(ies).** The Services described above will be rendered at the following facilities of Manufacturer:

   Insert Facility address(es).

4. **Atara Materials.** Atara will provide to Manufacturer the following materials to be used by Manufacturer to perform the Services:

   Describe specific materials being provided by Atara to Manufacturer.

5. **Atara Equipment.**

   Describe any equipment that will be provided by Atara to Manufacturer to be used by Manufacturer in performance of the Services.

Manufacturer Representative. *Name and Title*

6.Manufacturer Representative. *Name and Title*

7. **Atara Representative.***Name and Title*

8. **Compensation; Satisfaction of Invoices.** Manufacturer will invoice Atara for all amounts due under this Work Order. Such amounts will be invoiced in United States Dollars to the attention of ***[INSERT NAME]*** as follows: ***[INSERT]*** Manufacturer will invoice Atara for Batches of Product on the last day of each month, and the invoice will include Product that has completed fill finish or has been terminated by the date of the invoice. Invoices will be sent to accountspayable@atarabio.com Payment of all undisputed amounts

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detailed within invoices (other than payment of amounts under invoices disputed with respect to a non-conforming Batch, which dispute will be resolved pursuant to Section 6.5 of the Agreement) will be made by Atara within [*] of Atara's receipt of electronic transmission of each invoice, and reasonable supporting documentation pertaining to any disbursements.

9. **Conflict.** All terms and conditions of the Agreement will apply to this Work Order. In the event of any conflict between this Work Order and the terms of the Agreement, the terms of the Agreement will control.

[Remainder of page left blank intentionally]

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WORK ORDER AGREED TO AND ACCEPTED BY:

ATARA BIOTHERAPEUTICS, INC.	**COGNATE BIOSERVICES, INC.**
By	By
Print Name	Print Name
Title	Title
Date	Date

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SCHEDULE I
SCHEDULED MANUFACTURER TECHNOLOGY

[*]

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EXHIBIT A
FORM OF
CERTIFICATE OF ANALYSIS

[*]

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EXHIBIT B
FORM OF
CERTIFICATE OF COMPLIANCE

[*]

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EXHIBIT C
MANUFACTURER CONFIDENTIAL INFORMATION
PROHIBITED FROM DISCLOSURE BY ATARA

[*]

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AMENDMENT NO. 1 TO

DEVELOPMENT AND MANUFACTURING SERVICES

AGREEMENT

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AMENDMENT NO. 1 TO DEVELOPMENT AND MANUFACTURING SERVICES AGREEMENT

This Amendment No. 1 to the Development and Manufacturing Services Agreement ("**Amendment**") is made and entered into, effective as of December 21, 2017 ("**Amendment Effective Date**"), by and between **Cognate BioServices, Inc.**, a Delaware corporation with offices at with an office at 7513 Connelly Drive, Suite I, Hanover, MD 21076 ("**Manufacturer**"), and **Atara Biotherapeutics, Inc.**, a Delaware corporation located at 611 Gateway Boulevard, Suite #900, South San Francisco, CA 94080 ("**Atara**"). Each of Atara and Manufacturer are referred to in this Amendment as a "**Party**" and together, the "**Parties**".

Background

WHEREAS, the Parties have entered into that certain Development and Manufacturing Services Agreement (the "**Services Agreement**") effective as of August 10, 2015 (the " **Effective Date**"), pursuant to which Atara engaged Manufacturer to perform certain process development and manufacturing services in relation to Atara's products, as further described in individual work orders entered into thereunder (the "**Services**", as further defined in the Services Agreement);

WHEREAS, the Parties have agreed to amend the Services Agreement to provide for Atara's [*] certain Services at Manufacturer's facility, among other changes set forth in this Amendment; and

WHEREAS, Section 15.7 of the Services Agreement provides that the Services Agreement may only be modified by a writing signed by authorized representatives of each Party.

NOW, THEREFORE, the Parties desire, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, to amend the Services Agreement as set forth in this Amendment.

ARTICLE 1
DEFINITIONS

1.1 **Capitalized Terms**. Capitalized terms used in this Amendment shall have the meanings set forth in the Services Agreement unless otherwise defined and set forth in this Amendment. Except as expressly modified by this Amendment, the remainder of the Services Agreement shall remain in force in accordance with its terms and without any modification.

ARTICLE 2
AMENDMENTS

2.1 **Amendment of Section 1.39** . Section 1.39 of the Services Agreement is hereby amended in its entirety as follows:

> 1.39 "Services" means the Development, Manufacturing and/or other services described in a Work Order or Workstream entered into by the parties.

2.2 **Addition of New Section 1.43** . Article 1 of the Services Agreement is hereby amended by adding a new Section 1.43 thereto as follows:

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1.43 "Workstream" means workstreams entered into between the parties covering the provision of services therein and attached to this Agreement as Exhibit D.

2.3 **Amendment of Section 5.2(d).** Section 5.2(d) (Access to Facility) of the Services Agreement is hereby amended in its entirety as follows:

5.2(d) **Access to Facility**. During the term of this Agreement, with Manufacturer's knowledge (which knowledge shall be deemed given to the extent so stated in the Workstreams listed on Exhibit D), Manufacturer will permit Atara or its duly authorized representatives to [*] certain Services identified in [*] Exhibit D, which Services on Exhibit D may be amended from time to time as set forth therein, including the Manufacturing of any Batch of Product; provided, that, Atara will (i) [*] and (ii) [*]. For clarity, Manufacturer will [*]. Manufacturer also agrees that Atara and its duly authorized agents will have access, during normal business hours and during [*], [*] those portions of the Facility where the Product is Manufactured and [*] the Manufacturing Process to [*], including [*] of (i) the Equipment and materials used in the performance of Services; (ii) the holding facilities for such materials and Equipment; and (iii) all Records relating to such Services and the Facility. In addition to Atara's rights with respect to Person(s)-in-Plant as set forth in Section 6.4, Atara will also have the right, at its expense, to conduct [*] upon reasonable prior written notice to Manufacturer, and Manufacturer agrees to cooperate with Atara [*]. Atara will and will cause its duly authorized representatives (including the Person(s)-In- Plant) to, comply with the Manufacturer's reasonable instructions and/or monitoring policies (as the same may be amended from time to time) at all times any Atara representatives (including Person(s)-in-Plant and all other representatives or agents of Atara) are in the Facility. Subject to Manufacturer's obligations under Applicable Law and obligations of confidentiality to third parties, [*]; provided, that Atara shall not have access to any cleanroom suite or storage areas in the Facility used or allocated for providing services to other current, prospective or future clients of Manufacturer.

2.4 **Amendment of Section 6.4** . Section 6.4 (Man-in-Plant) of the Services Agreement is hereby amended in its entirety as follows:

6.4 **Person(s)-In-Plant**. At Atara's discretion, Atara may designate [*] (the "Person(s)-In-Plant") who will be present in those portions of the Facility where Manufacturer is engaged in the performance of the Services, including without limitation [*]. The Person(s)-in-Plant may [*] in (a) all activities [*], (b) all activities [*] and (c) those activities set forth in Exhibit D. The Parties shall cooperate in relation to the performance of any Services that involve the Person(s)-in-Plant, provided that, subject to Manufacturer's obligations under Applicable Law and obligations of confidentiality to third parties, each Party's [*] shall be as set forth in Exhibit D. All Person(s)-in-Plant shall be employees or consultants engaged by Atara, and Atara shall remain responsible for [*] costs associated with their engagement or employment and provision of services, including when performing activities as Person(s)-in-Plant.

2.5 **Amendment of Section 10.3.** Section 10.3 (Permitted Disclosure) of the Services Agreement is hereby amended and restated in its entirety, as follows:

10.3 **Permitted Disclosure**. Recipient may provide Discloser's relevant Confidential Information to its Affiliates, and to its and their directors, employees, consultants (including, with respect to Atara, the Person(s)-In-Plant and all other agents or representatives of Atara who access the Facility or have access to Manufacturer Confidential Information pursuant to Section 5.2(d)), contractors and agents; provided, however, that in each case (a) each of such Affiliates, directors, employees, consultants, contractors and agents (and with respect to Atara, the Person(s)-In-Plant and all other agents or representatives of Atara who access the Facility or have access to Manufacturer Confidential Information pursuant to Section 5.2(d)), have a *bona fide* need to know Discloser's Confidential Information to perform its obligations under this Agreement (including any Work Order executed hereunder), (b) are bound by written obligations of confidentiality with respect to the Discloser's Confidential Information that are at least as restrictive as those set forth in this Agreement; and (c) Recipient remains liable for the compliance by and breach of such obligations by its Affiliates, employees, consultants (including, with respect to Atara, the Person(s)-In-Plant and all other agents or representatives of Atara who access the Facility or have access to Manufacturer Confidential Information pursuant to Section 5.2(d)), contractors and agents. Recipient may also disclose Discloser's Confidential Information to third parties only to the extent such disclosure is required to comply with Applicable Law, the rules of any stock exchange or listing entity, or to defend or prosecute litigation; provided, that to the extent not prohibited by Applicable Law, Recipient provides prior written notice of such disclosure to Discloser, takes all reasonable and lawful actions to avoid or minimize the degree of such disclosure, and cooperates reasonably with Discloser in any efforts to seek a protective order. If disclosure of Discloser's Confidential Information is nevertheless required, Recipient will disclose only that portion of Discloser's Confidential Information that is legally required and then only to those parties legally required. Furthermore, (i) Atara may disclose Confidential Information of Manufacturer relating to the Development and/or Manufacture of Product to [*] or [*], and who in each case have a specific need to know such Confidential Information and who are bound by a like obligation of confidentiality and restrictions on use; provided such Confidential Information of Manufacturer shall not include or reference any of the information specified on Exhibit C hereto; and (ii) Manufacturer may disclose the existence and key financial terms of this Agreement and the fact that Manufacturer is performing the Services for Atara to [*] or [*], and who in each case have a specific need to know such Confidential Information and who are bound by a like obligation of confidentiality and restrictions on use.

2.6 **Addition of New Section 10.6** . Article 10 of the Services Agreement is hereby amended by adding new Section 10.6 (Restrictive Covenants) immediately following Section 10.5, as follows:

10.6 **Restrictive Covenants.**

(a) For a period of [*] from the termination or expiration of the Services Agreement, (i) Manufacturer will not and will cause its Affiliates, employees, officers, and directors not to, directly or indirectly, hire, engage, employ or solicit for employment (as an employee, consultant or otherwise) any employees or consultants of Atara ("**Atara**

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Employees") or induce or attempt to induce any Atara Employees to leave his or her employment or engagement with Atara, or in any way intentionally interfere with the employment relationship between any Atara Employees and Atara, in each case for the purpose of employing or engaging the services of any such Atara Employee or for soliciting any such Atara Employee to become an employee or consultant of Manufacturer or its Affiliates or any other party; provided, however, that nothing herein shall preclude Manufacturer from employing or soliciting any Atara Employee (A) who independently responds to any public advertisement or general solicitation (such as a newspaper advertisement, recruiter solicitation or internet posting) not specifically targeting such Atara Employee or (B) following the termination of such Atara Employee's employment with Atara for any reason, provided, that Manufacturer has not induced such Atara Employee to terminate his or her employment in breach of Manufacturer's obligations hereunder and (ii) Atara will not and will cause its Affiliates, employees, officers, and directors not to, directly or indirectly, hire, engage, employ or solicit for employment (as an employee, consultant or otherwise) any employees or consultants of Manufacturer ("**Manufacturer Employees**") or induce or attempt to induce any Manufacturer Employees to leave his or her employment or engagement with Manufacturer, or in any way intentionally interfere with the employment relationship between any Manufacturer Employees and Manufacturer, in each case for the purpose of employing or engaging the services of any such Manufacturer Employee or for soliciting any such Manufacturer Employee to become an employee or consultant of Atara or its Affiliates or any other party; provided, however, that nothing herein shall preclude Atara from employing or soliciting any Manufacturer Employee (A) who independently responds to any public advertisement or general solicitation (such as a newspaper advertisement, recruiter solicitation or internet posting) not specifically targeting such Manufacturer Employee or (B) following the termination of such Manufacturer Employee's employment with Manufacturer for any reason, provided, that Atara has not induced such Manufacturer Employee to terminate his or her employment in breach of Atara's obligations hereunder.

(b) Each of Manufacturer and Atara acknowledges and agrees that the restrictive covenants contained in this Section 10.6 are necessary for the protection of the Parties respective businesses and are reasonable in terms of time, geographic area, scope and content.

2.7 **Amendment of Section 12.2** . Section 12.2 (Indemnification by Atara) of the Services Agreement is hereby amended and restated in its entirety as follows:

12.2. **Indemnification by Atara** . Atara will indemnify, defend and hold harmless Manufacturer, its Affiliates and its and their respective officers, directors, employees, Permitted Subcontractors, and agents (collectively, the "**Manufacturer Indemnitees**") against any and all Losses in connection with any and all Claims that may be brought or instituted against any Manufacturer Indemnitee by any third party to the extent they arise out of or relate to (a) [*]; (b) [*]; (c) [*]; or (d) [*].

2.8 **Amendment of Section 13.4.** Section 13.4 (Evidence of Insurance) of the Services Agreement is hereby amended in its entirety as follows:

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

13.4 **Evidence of Insurance**. Manufacturer will, upon the execution of this Agreement, after each renewal or material change in coverage, and at any time upon request by Atara, promptly provide Atara with a Certificate of Insurance evidencing coverage required under this Section 13, [*], and providing that, to the extent possible, [*] advance written notice will be given to Atara of any material change or [*] cancellation in coverage or limits. The insurance policies set forth in Section 13.1(b) will cover any [*]. Atara will maintain insurance comparable to the insurance maintained by Manufacturer under Section 13.1(a) and 13.1(b) [*]. Manufacturer agrees to require Permitted Subcontractors performing Services to maintain, other types of insurance and/or additional amounts of insurance as is reasonable within the industry for service providers providing comparable services.

2.9 **Amendment of Section 14.6.** Section 14.6 (Return of Materials/Confidential Information) of the Services Agreement is hereby amended and restated as follows:

14.6 **Return of Materials/Confidential Information**. Upon the earlier of the request of Discloser or the expiration or termination of this Agreement for any reason, Recipient agrees, except as otherwise provided in this Agreement and to the extent not prohibited by Applicable Law, to return to Discloser all documentation or other tangible evidence or embodiment of Discloser's Confidential Information that is not required by law to be retained by the Recipient and not to use such Confidential Information, unless otherwise agreed by the parties in writing. Notwithstanding the foregoing, Recipient may retain one archival copy of Discloser's Confidential Information in order to monitor Recipient's ongoing obligations of confidentiality and limitations on Use of Confidential Information under this Agreement; provided, that such archival copy must only be accessed to the extent required comply with Applicable Law, be kept confidential in accordance with and remain subject to the terms of Article 10, and be stored in a secure location, segregated from Recipient's regular files. Manufacturer will also [*] return all Atara Materials, Atara Equipment, retained samples, data, reports and other property, information and know-how in recorded form that was provided by Atara, or developed in the performance of the Services, that are owned by or licensed to Atara; provided that Atara will be responsible for all reasonable and documented costs and expenses associated with the return to Atara of Atara Materials, Atara Equipment and/or Atara Confidential Information by Manufacturer pursuant to this Agreement. Upon the written request of Manufacturer, Atara will destroy or return to Manufacturer (as requested by Manufacturer) all tangible copies, extracts or other representations of any portion of any Manufacturer Confidential Information that Atara comes into possession of as a result of Atara's Person(s)-In-Plant, and other representatives' or agents' access to the Facility or Manufacturer Confidential Information pursuant to Section 5.2(d).

2.10 **Addition of Exhibit D**. A new Exhibit D shall be added to the Services Agreement in the form attached to this Amendment.

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

ARTICLE 3
MISCELLANEOUS

3.1 **No Waiver**. Nothing in this Amendment is intended to operate as a waiver of any claims either Party may have against the other Party arising prior to the date of this Amendment, including any claims arising prior to the date of this Amendment with respect to the performance of the Services or otherwise under the Services Agreement. Any delay in enforcing a party's rights under this Amendment or the Services Agreement, or any waiver as to a particular default or other matter, will not constitute a waiver of such party's rights to the future enforcement of its rights under this Amendment or the Services Agreement, except with respect to an express written waiver relating to a particular matter for a particular period of time signed by an authorized representative of the waiving Party, as applicable.

3.2 **Miscellaneous**. This Amendment shall be governed by and interpreted in accordance with the law of the State of New York, U.S.A., without reference to the principles of conflicts of laws. The United Nations Convention on Contracts for the International Sale of Goods shall not apply to the transactions contemplated by this Amendment. Except as specifically amended by this Amendment, the terms and conditions of the Agreement shall remain in full force and effect. This Amendment may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Except to the extent expressly provided herein, the Services Agreement, as amended by this Amendment, including all appendices, exhibits and schedules to each of the foregoing, together with all of the Work Orders executed by the Parties, constitute the entire agreement between the Parties relating to the subject matter of the Services Agreement and supersedes all previous oral and written communications, including all previous agreements, between the Parties.

[Remainder of Page Intentionally Left Blank]

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IN WITNESS WHEREOF, Manufacturer and Atara have executed this Amendment by their respective officers hereunto duly authorized, on the day and year hereinafter written. The Parties acknowledge and agree that the signature date may not be the Amendment Effective Date.

Cognate BioServices, Inc.

By: /s/ J. Kelly Ganjei
Name: /s/ J. Kelly Ganjei
Title: Chief Executive Officer

Atara Biotherapeutics, Inc.

By: /s/ Joe Newell
Name: Joe Newell
Title: Executive Vice President, Technical Operations

Exhibit D to Services Agreement

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

AMENDMENT NO. 2 TO

DEVELOPMENT AND MANUFACTURING SERVICES

AGREEMENT

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AMENDMENT NO. 2 TO DEVELOPMENT AND MANUFACTURING SERVICES AGREEMENT

This Amendment No. 2 to the Development and Manufacturing Services Agreement ("**Second Amendment**") is made and entered into, effective as of May 4, 2018 ("**Second Amendment Effective Date**"), by and between **Cognate BioServices, Inc.**, a Delaware corporation with an office at 7513 Connelly Drive, Suite I, Hanover, MD 21076 ("**Manufacturer**"), and **Atara Biotherapeutics, Inc.**, a Delaware corporation located at 611 Gateway Boulevard, Suite #900, South San Francisco, CA 94080 ("**Atara**"). Each of Atara and Manufacturer are referred to in this Second Amendment as a "**party**" and together, the "**parties**."

Background

WHEREAS, the Parties have entered into that certain Development and Manufacturing Services Agreement (the "**Services Agreement**") effective as of August 10, 2015 (the " **Effective Date**"), pursuant to which Atara engaged Manufacturer to perform certain process development and manufacturing services in relation to Atara's products, as further described in individual work orders entered into thereunder (the "**Services**", as further defined in the Services Agreement);

WHEREAS, the Parties entered into the First Amendment to the Services Agreement effective December 21, 2017 (the "**First Amendment**") to provide for Atara's [*] certain Services at Manufacturer's facility; and

WHEREAS, the Parties have agreed to further amend the Services Agreement to revise certain other terms of the Services Agreement; and

WHEREAS, Section 15.7 of the Services Agreement provides that the Services Agreement may only be modified by a writing signed by authorized representatives of each Party.

NOW, THEREFORE, the Parties desire, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, to amend the Services Agreement as set forth in this Second Amendment.

ARTICLE 1
DEFINITIONS

1.1 **Capitalized Terms.** Capitalized terms used in this Second Amendment shall have the meanings set forth in the Services Agreement, as amended, unless otherwise defined in in this Second Amendment. Except as expressly modified by this Second Amendment, the remainder of the Services Agreement shall remain in force in accordance with its terms and without further modification.

ARTICLE 2
AMENDMENTS

2.1 **Amendment of Section 1.10.** Section 1.10 "Batch" of the Services Agreement is hereby amended in its entirety as follows:

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1.10 "Batch" means a specific quantity of Product that is intended to be of uniform character and quality, within specified limits, and is produced during the same cycle of Manufacture as defined by the applicable Batch record. For clarity, the terms Product and Batch include [*] (in each case as specified in the applicable Work Order).

2.2 **Amendment of Section 1.14.** Section 1.14 "cGMP" of the Services Agreement is hereby amended in its entirety as follows:

1.14 "cGMP" means current good manufacturing practices and regulations applicable to the Manufacture of Product that are promulgated by the applicable Authority, as are applicable to the Product, (a) [*] and (b) [*].

2.3 **Addition of New Section 2.4.** Article 2 of the Services Agreement is hereby amended by adding new Section 2.4 (Commercial Supply Agreement) immediately following Section 2.3, as follows:

2.4 Commercial Supply Agreement. [*] following the Second Amendment Effective Date, the parties will negotiate in good faith a manufacture and supply agreement for the commercial production and supply of Product (the "CSA").

2.4 **Amendment of Section 3.2.** Section 3.2 (Communications) of the Services Agreement is hereby amended in its entirety as follows:

3.2 **Communications**.

(a) Operations Meetings; Production Forecasts. The parties will hold plant leadership team meetings via teleconference or in person, on a periodic basis as agreed upon by the Representatives. Notwithstanding the foregoing, the parties will hold a monthly meeting of the plant leadership team members from each party which shall be held in person, unless the parties mutually agree to hold such meeting by teleconference ("Operations Meeting"). In each Operations Meeting, Atara will provide a rolling written [*] Batch production demand forecast (such [*] forecast, the "Demand Forecast") so that Manufacturer can prepare a production schedule and plan for the purchase of the necessary raw materials and consumables to be provided by Manufacturer under the applicable Work Order. Subject to the remainder of this Section 3.2, the Demand Forecast will be binding on Atara with respect to (i) [*] for production of the full number of Batches of Product set forth in such Demand Forecast (the "Committed Materials Costs"), and (ii) [*]. Atara will also provide to Manufacturer at each Operations Meeting, where reasonably practicable, a non-binding rolling estimated Batch demand forecast covering an additional [*] (i.e. so that the total forecast covers a period of [*]). Atara will be required to (A) pay, [*] following delivery by Manufacturer of an invoice therefor) all Committed Materials Costs (i.e. all raw materials necessary to Manufacture [*] set forth in such Demand Forecast), less any amounts already paid by Atara (or that are the subject to invoices already issued by Manufacturer) for Prepaid Materials Costs. For clarity, for any Committed Materials Costs that are also Prepaid

Materials Costs that have been approved at an Operations Meeting , the payment terms applicable to Prepaid Materials Costs will govern, and (B) execute work orders for the Manufacture of, and purchase [*] of the quantity (by number of Batches) of Product requested in each such Demand Forecast. If Atara orders [*] set forth in the Demand Forecast, then any raw materials and supplies purchased by Manufacturer that have been paid for by Atara as Committed Materials Costs shall be held by Manufacturer and used for Manufacture of Batches ordered by Atara in subsequent periods (and covered by subsequent Demand Forecasts), provided that Manufacturer may, upon prior written notice to Atara, dispose of or destroy any such raw materials that are outside their shelf life, or are otherwise unsuitable for use in Manufacture of subsequent Batches, [*] with respect to [*]. Manufacturer shall provide an update at each Operations Meeting of the quantity of raw materials and supplies that have been paid for by Atara as Committed Materials Costs and are being held for application against subsequent production. The Updated Financial Terms in Section 2 of Exhibit F sets forth the price and payment terms applicable to each of such Batches of Product Manufactured on and after the Second Amendment Effective Date (each such Batch for which Manufacture is commenced after the Second Amendment Effective Date, a "Price Adjusted Batch").

(b) Manufacturer Operations Meeting Reports. In each Operations Meeting, Manufacturer will provide (i) a report identifying the number of (A) Final Batch Dispositions and any (B) [*] Batches produced in the preceding calendar month(s), (ii) a [*], (iii) a [*] forecast of expected costs of raw materials to be provided by Manufacturer under the applicable Work Order (the "Raw Materials Cost Forecast"), (iv) operational and quality metrics as may be mutually agreed to by the parties, and (v) as set forth in the applicable Work Order, such other reports as Atara may reasonably request from time to time. Each party will cover its own expenses with respect to the attendance of all Operations Meetings. Manufacturer will make written reports to Atara to the extent and as specified in the applicable Work Order and as required in connection with any Operations Meeting (including for the purposes of reporting on (i) through (v) of this Section 3.2(b)).

2.5 **Production Forecasts**. Without limiting Atara's obligations to provide the Demand Forecast (and the rolling non-binding forecast of production) at each Operations Meeting, as set forth above, within [*] following the Second Amendment Effective Date, Atara will provide to Manufacturer a non-binding forecast of its estimated production requirements for Product on a [*] during the [*] period immediately following the Second Amendment Effective Date, prepared in good faith and on reasonable grounds, and reflecting Atara's commercially reasonable estimate of its needs for Product over the applicable period.

2.6 **Amendment of Section 4.1.** Section 4.1 (Supply of Materials) of the Services Agreement is hereby amended in its entirety as follows:

4.1 **Supply of Materials**. Manufacturer will supply, in accordance with the payment schedule(s) included in the applicable Work Order and in accordance with the relevant

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approved raw material specifications, all materials to be used by Manufacturer in the performance of Services under a Work Order other than the Atara Materials specified in such Work Order. Without limiting the foregoing, any such materials that the parties, at an Operations Meeting, mutually agree require prepayment will be subject to the Updated Financial Terms set forth in Section 2 of Exhibit F. Atara or its designees will provide Manufacturer with the Atara Materials in accordance with the schedule established at the applicable Operations Meeting. Manufacturer agrees (a) to acknowledge receipt of all Atara Materials received; (b) not to provide Atara Materials to any third party without the express prior written consent of Atara; (c) not to use Atara Materials for any purpose other than conducting the Services, and without limiting the generality of the foregoing, will not analyze, characterize, modify or reverse engineer any Atara Materials or take any action to determine the structure or composition of any Atara Materials unless required pursuant to a signed Work Order (or necessary to confirm that all applicable standards are met, solely in connection with an Investigational Process and with Atara's prior written consent); and (d) to destroy or return to Atara all unused quantities of Atara Materials according to Atara's written directions and at Atara's sole cost and expense.

2.7 **Amendment of Section 6.2.** Section 6.2 (Provision of Records) of the Services Agreement is hereby amended it its entirety as follows:

6.2 **Provision of Records**. If, based upon such tests and documentation review, a Batch of Product conforms to the Specifications and was Manufactured according to cGMP (if applicable) and the Manufacturing Process, then a Certificate of Compliance (or other applicable disposition form) will be completed and approved by the quality assurance department of Manufacturer. Batches for which Manufacture commenced prior to the Second Amendment Effective Date will be invoiced in accordance with the applicable Work Order and Price Adjusted Batches will be invoiced in accordance with Sections 7 and 8 of the Updated Financial Terms in Exhibit F. This Certificate of Compliance (or other applicable disposition form), a Certificate of Analysis, the Specifications, and a complete and accurate copy of the Batch records including those items set forth on Exhibit E (collectively, the "Batch Documentation") for each Batch of Product will be delivered by Manufacturer to Atara electronically.

2.8 **Amendment of Section 6.3.** (Review of Batch Documentation) of the Services Agreement is hereby amended it its entirety as follows:

6.3 **Review of Batch Documentation**. Each party will review the Batch Documentation for each Batch of Product and may test samples of the Batch of Product against the Specifications. Atara will notify Manufacturer in writing of its acceptance or rejection of such Batch based on not more than [*)] review cycles completed within a period of [*] commencing upon Atara's receipt of the Batch Documentation relating to such Batch. Each party will use commercially reasonable efforts to review the Batch Documentation within less than [*] review cycles and within less than [*] following receipt. During this review period, the parties agree to respond promptly, but in any

event within [*], to any reasonable inquiry or request for a correction or change by the other party with respect to such Batch Documentation.

2.9 **Amendment of Section 6.5.** Section 6.5 (Disputes) of the Services Agreement is hereby retitled as " **Non-Conforming Product; Disputes**" and is amended in its entirety as follows:

6.5 **Non-Conforming Product; Disputes**.

(a) Upon Atara's receipt and review of the Batch Documentation within the time period set forth in Section 6.3, Atara shall in accordance with Section 6.3 notify Manufacturer in writing if Atara believes, in good faith and based on reasonable grounds that any Batch (i) fails to conform to the Specifications, (ii) was not Manufactured in compliance with cGMP (if applicable) or (iii) was not Manufactured in compliance with the Manufacturing Process (as modified by any Planned Deviations, if any, that were preapproved in writing by Atara) (such Batch, a "Non-Conforming Batch"). Non-Conforming Batches shall be addressed in accordance with the remainder of this Section 6.5 and Section 6.6.

(b) If a Batch is a Non-Conforming Batch, then a root cause analysis on such Non-Conforming Batch will be undertaken in accordance with subsection (c) below (the "Investigational Process"). Atara will be required to pay for [*] of the amount set forth in invoices for Product that is a Non-Conforming Batch within the time frame required under the applicable Work Order, with the remainder of such invoiced amount held pending the determination of an Investigational Process. Payment of an invoice by Atara will not constitute a waiver of remedies available to Atara under Section 6.6, except for claims that a Batch is or was a Non-Conforming Batch where Product in such Batch is or was approved for Final Disposition (as defined in Exhibit E).

(c) Without limiting subsection (b) above, the parties agree that any Non-Conforming Batch (or where the parties cannot agree, any Batch that either party believes to be Non-Conforming) will first be reviewed through the Investigational Process by a joint "Investigation Team" made up of [*]. If the Investigation Team is unable to make a determination of the root cause within [*] following identification of the Non-Conforming Batch (or submission of a disputed Batch to the Investigational Process for determination of whether it is Non-Conforming), an analysis and review will be performed by the joint "Materials Review Board." The Materials Review Board shall [*]. Either Party may make changes to their members on the Materials Review Board at any time on written notice to the other party, provided that any such replacement shall be of equivalent experience and seniority. This Materials Review Board shall be responsible for making the determination of the root cause. If the Materials Review Board cannot agree as to the root cause of the non-conformance in the Non-Conforming Batch and believe that additional Investigational Processes are needed to make such determination, the Parties may mutually agree to conduct such additional investigations and to return such Non-Conforming Batch for consideration by the joint Materials Review Board with the results of such additional

investigations, if any. If the Materials Review Board cannot agree on the root cause (with or in absence of such additional investigations) within [*] following its first consideration (or such further consideration if additional investigations are conducted), then any dispute shall be referred for final binding resolution to a [*] (the "Quality Expert"). The parties will mutually agree on the Quality Expert, or if unable to agree, each party will propose * , with which neither party has an existing or prior contractual relationship, to serve as the Quality Expert and one of such candidates will be selected, at random (in a blind drawing), to serve as the Quality Expert. Each candidate proposed to serve as such Quality Expert shall have at least [*] of experience in [*]. As necessary or appropriate to permit the Quality Expert to evaluate the root cause of the non-conformance and make a determination, the parties will provide the Quality Expert with the defined terms, a [*], and the Batch Documentation. The Quality Expert will make a determination as to whether or not the Batch is Non-Conforming (if there is a dispute as to whether the Batch is a Non-Conforming Batch), and the root cause of non-conformance using [*] for the Batch. Notwithstanding the foregoing, if the Quality Expert determines that [*] selected by the Quality Expert from among the approved or qualified vendors utilized in the Manufacture of Product. The determination of the root cause by such Quality Expert shall occur within [*] of receiving the necessary information from the joint Materials Review Board, unless [*]. The decision of the Quality Expert will be final and binding on the parties absent manifest error, provided that a failure by any Quality Expert to reach a determination within [*] period (as it may be extended for additional testing) shall not render such decision invalid or unenforceable. [*]. If, however, the Quality Expert cannot establish the root cause of the non-conformance (with or without additional testing), then[*].

(d) Following Investigation Team and/or Materials Review Board review and/or Quality Expert analysis set forth in subsection (c) above:

(i) A Non-Conforming Batch is a "Manufacturer Non-Conforming Batch" if [*] .

(ii) A Non-Conforming Batch is an "Atara Non-Conforming Batch " if [*].

(e) If a Non-Conforming Batch is finally determined pursuant to this Section 6.5 (by agreement of the parties, through the Materials Review Board or the Quality Expert, as applicable) to be (i) a Manufacturer Non-Conforming Batch, then Section 6.6(a) shall apply or (ii) an Atara Non-Conforming Batch, then Section 6.6(b) shall apply.

(f) In addition to carrying out the Investigational Process, the parties will meet to discuss, evaluate and analyze the implications of the failure to comply with the Specifications, cGMP (if applicable) and/or the Manufacturing Process and will decide whether to proceed with or to amend the applicable Work Order via a Change Order, or to terminate such Work Order**.**

(g) Following the execution of the Second Amendment, [*]. For clarity, in the absence of any other written agreement between the parties, the parties will [*] the responsibility for all Standard Costs associated with any [*].

2.10 **Amendment of Section 6.6.** Section 6.6 is hereby retitled as " **Remedies for Non-Conforming Product**", and is hereby amended in its entirety as follows:

6.6 **Remedies for Non-Conforming Product**.

(a) If the parties agree or if determined in accordance with Section 6.5 above that a Batch of Product is a Manufacturer Non-Conforming Batch then, Manufacturer will, [*]:

(i) [*]; or

(ii) [*].

For clarity, performance by Manufacturer, [*], of the remedy under (i) or (ii) satisfies Manufacturer's obligations in respect of any Manufacturer Non-Conforming Batch.

(b) If the parties agree or if determined in accordance with Section 6.5 above that a Batch of Product is an Atara Non-Conforming Batch, then Atara will [*], and shall pay all amounts owed with respect to such Atara Non-Conforming Batch within [*] following delivery of an invoice by Manufacturer after completion of the Investigational Process. Atara will pay Manufacturer the fees, costs and expenses for such Atara Non-Conforming Batch (i) in accordance with the applicable Work Order in respect of Batches for which Manufacture commenced prior to the Second Amendment Effective Date and (ii) in accordance with Sections 7 and 8 of the Updated Financial Terms in Exhibit F in respect of Price Adjusted Batches, and Atara will not be entitled to the remedies set forth in Section 6.6(a).

(c) For clarity, unless the Non-Conforming Batch is determined to be a Manufacturer Non-Conforming Batch pursuant to Section 6.5, and without limiting Section 6.5(g), Manufacturer will not be responsible for [*] under clause (a)(i) of this Section 6.6 or for [*] under clause (a)(ii) of this Section 6.6.

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

2.11 **Amendment of Section 8.1.** Section 8.1 (Price) of the Services Agreement is hereby amended in its entirety as follows:

> 8.1 **Price**. The price of Product and/or the fees and expenses for the performance of Services will be set forth in the applicable Work Order; provided that for all Price Adjusted Batches, the price of Product and the fees and expenses for the performance of Services in connection with such Price Adjusted Batch will be governed by Sections 7 and 8 of the Updated Financial Terms set forth in Exhibit F, unless the applicable Work Order expressly states its intention to supersede the Updated Financial Terms. All dollar ($) amounts specified in this Agreement are United States dollar amounts and all payments to be made under this Agreement will be made in United States dollars.

2.12 **Amendment to Section 14.1** . Section 14.1 of the Services Agreement is hereby amended in its entirety as follows:

> **14.1 Term**. This Agreement will take effect as of the Effective Date and, unless earlier terminated pursuant to this Article 14, will expire on the later of (a) one (1) year from the Second Amendment Effective Date; or (b) the entry by the parties into a CSA.

2.13 **Addition of Exhibit E**. A new Exhibit E ("Batch Disposition Requirements") is hereby added to the Services Agreement in the form attached as Appendix 1 to this Second Amendment.

2.14 **Addition of Exhibit F**. A new Exhibit F ("Updated Financial Terms") is hereby added to the Services Agreement in the form attached as Appendix 2 to this Second Amendment. The Updated Financial Terms shall only apply to Price Adjusted Batches. To the extent the Updated Financial Terms conflict with the payment terms set forth in the Work Order by and between Atara and Manufacturer with an effective date of August 7, 2015, as subsequently modified by a Change Order effective as of March 21, 2016 and amended on June 20, 2016 ("Work Order 1"), the Updated Financial Terms shall govern with respect to all payments for Price Adjusted Batches.

ARTICLE 3
MISCELLANEOUS

3.1 **No Waiver**. Nothing in this Second Amendment is intended to operate as a waiver of any claims either Party may have against the other Party arising prior to the date of this Second Amendment with respect to the performance of the Services or otherwise under the Services Agreement, provided that Atara shall have no right to make a claim for refund or replacement under Section 6.6 (as amended by this Second Amendment) on the basis of Non-Conformance in connection with any Batch approved by Atara for disposition or final disposition prior to the date hereof, and all of such claims are waived and extinguished upon execution of this Second Amendment. For clarity, the waiver in the preceding sentence does not affect the discount set forth in Section 4 of the Updated Financial Terms set forth in Exhibit F. Any delay in enforcing a Party's rights under this Second Amendment or the Services Agreement, or any waiver as to a particular default or other matter, will not constitute a waiver of such Party's rights to the future

enforcement of its rights under this Second Amendment or the Services Agreement, except with respect to an express written waiver relating to a particular matter for a particular period of time signed by an authorized representative of the waiving Party, as applicable.

3.2 **Miscellaneous.** This Second Amendment shall be governed by and interpreted in accordance with the law of the State of New York, U.S.A., without reference to the principles of conflicts of laws. The United Nations Convention on Contracts for the International Sale of Goods shall not apply to the transactions contemplated by this Second Amendment. Except as specifically amended by this Second Amendment, the terms and conditions of the Services Agreement shall remain in full force and effect. This Second Amendment may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Except to the extent expressly provided herein, the Services Agreement, as amended by the First Amendment, and by this Second Amendment, including all appendices, exhibits and schedules to each of the foregoing, together with all Work Orders executed by the Parties, constitute the entire agreement between the Parties relating to the subject matter of the Services Agreement and supersedes all previous oral and written communications, including all previous agreements, between the Parties.

[Remainder of Page Intentionally Left Blank]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

IN WITNESS WHEREOF, Manufacturer and Atara have executed this Second Amendment by their respective officers hereunto duly authorized, on the day and year hereinafter written. The Parties acknowledge and agree that the signature date may not be the Second Amendment Effective Date.

Cognate BioServices, Inc.

By: J. Kelly Ganjei
Name: /s/ J. Kelly Ganjei
Title: Chief Executive Officer

Atara Biotherapeutics, Inc.

By: /s/ Isaac Ciechanover
Name: Isaac Ciechanover
Title: Chief Executive Officer and President

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Appendix 1
Exhibit E (to Services Agreement)

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Appendix 2
Exhibit F (to Services Agreement)

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Schedule 1
[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Schedule 2
[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Exhibit 10.4

ATARA BIOTHERAPEUTICS, INC.

EXECUTIVE EMPLOYMENT AGREEMENT

for

[NAME]

This Executive Employment Agreement (this "**Agreement**"), is made and entered into as of [DATE] (the "**Effective Date**"), by and between [NAME] ("**Executive**") and Atara Biotherapeutics, Inc. (the "**Company**").

1. Employment by the Company.

1.1 Position. Executive shall serve as the Company's [TITLE], reporting to the Company's [SUPERVISOR]. During the term of Executive's employment with the Company, Executive will devote Executive's best efforts and substantially all of Executive's business time and attention to the business of the Company, except for approved vacation periods and reasonable periods of illness or other incapacities permitted by the Company's general employment policies. Executive's anticipated start date will be [DATE] (the "**Start Date**").

1.2 Duties and Location. Executive shall perform such duties as are customarily associated with the position of [TITLE] and such other duties as are assigned to Executive by the Company's [TITLE]. Executive's primary office location shall be the Company's [LOCATION]. Subject to the terms of this Agreement, the Company reserves the right to: (i) reasonably require Executive to perform Executive's duties at places other than Executive's primary office location from time to time and to require reasonable business travel; and (ii) modify Executive's job title and duties as it deems necessary and appropriate in light of the Company's needs and interests from time to time.

1.3 Policies and Procedures. The employment relationship between the parties shall be governed by the general employment policies and practices of the Company, except that when the terms of this Agreement differ from or are in conflict with the Company's general employment policies or practices, this Agreement shall control.

2. Compensation.

2.1 Base Salary. For services to be rendered hereunder, Executive shall receive a base salary at the rate of $[##] per year (the "**Base Salary**"), less standard payroll deductions and withholdings, and payable in accordance with the Company's regular payroll schedule.

2.2 Annual Bonus. Executive will be eligible for an annual discretionary bonus (the "**Annual Bonus**") of up to [##] ([##]%) of Executive's then current Base Salary (the "**Target Bonus Amount**"). Whether Executive receives an Annual Bonus for any given year,

and the amount of any such Annual Bonus, will be determined in the good faith discretion of the Company's Board of Directors ("**Board**") (or the Compensation Committee thereof), based upon the Company's and Executive's achievement of objectives and milestones to be determined on an annual basis by the Board (or Compensation Committee thereof). No Annual Bonus is guaranteed and, in addition to the other conditions for earning such compensation, Executive must remain an employee in good standing of the Company on the scheduled Annual Bonus payment date in order to be eligible for any Annual Bonus. For the current calendar year, Executive's eligibility for the Annual Bonus will be prorated based on Executive's Start Date.

[2.3 [Retention/Sign-On/Relocation] Bonus.][1]

3. Standard Company Benefits. Executive shall, in accordance with Company policy and the terms and conditions of the applicable Company benefit plan documents, be eligible to participate in the benefit and fringe benefit programs provided by the Company to its executive officers and other employees from time to time. Any such benefits shall be subject to the terms and conditions of the governing benefit plans and policies and may be changed by the Company in its discretion.

4. Expenses. The Company will reimburse Executive for reasonable travel, entertainment or other expenses incurred by Executive in furtherance or in connection with the performance of Executive's duties hereunder, in accordance with the Company's expense reimbursement policy as in effect from time to time.

5. Equity.

[**5.1 Options**. The Company will recommend to its Compensation Committee of the Board that Executive be granted an option to purchase [##] shares of the Company's Common Stock ("**Option**"). Grant of the Option is subject to the approval of the Compensation Committee. [If granted, the Option shall vest over four years of continuous service to the Company, with twenty-five percent (25%) of the shares subject to the Option grant becoming vested on the first year anniversary of the Start Date, and the remaining shares becoming vested in equal monthly installments over the following thirty-six (36) months of continuous service.] The exercise price of the Option, as well as all other matters related to the Option, will be governed by and subject to the terms and conditions set forth in the Company's [2014 Equity Incentive Plan/2018 Inducement Plan], and the stock option agreement Executive will be required to execute.]

[**5.2 Restricted Stock Units**. The Company will recommend to its Compensation Committee of the Board that Executive be granted [##] restricted stock units ("**RSUs**"). Grant of the RSUs is subject to the approval of the Compensation Committee. [If granted, the RSUs shall vest over four years of continuous service to the Company, with twenty-five percent (25%) of the RSUs becoming vested on the first year anniversary of the Start Date, and the remaining RSUs becoming vested in equal annual installments over the following three anniversaries of the Start Date of continuous service.] The RSUs will be governed by and subject to the terms and conditions set forth in the Company's [2014 Equity Incentive Plan/2018 Inducement Plan] and the applicable grant documents.]

[1] Certain executive officers may receive retention, sign-on, relocation or other similar cash bonuses.

6. Proprietary Information Obligations.

6.1 Proprietary Information Agreement. As a condition of employment, Executive shall execute and abide by the Company's standard form of Proprietary Information and Invention Assignment Agreement (the "**Proprietary Information Agreement**").

6.2 Third-Party Agreements and Information. Executive represents and warrants that Executive's employment by the Company does not conflict with any prior employment or consulting agreement or other agreement with any third party, and that Executive will perform Executive's duties to the Company without violating any such agreement. Executive represents and warrants that Executive does not possess confidential information arising out of prior employment, consulting, or other third party relationships, that would be used in connection with Executive's employment by the Company, except as expressly authorized by that third party. During Executive's employment by the Company, Executive will use in the performance of Executive's duties only information that is generally known and used by persons with training and experience comparable to Executive's own, common knowledge in the industry, otherwise legally in the public domain, or obtained or developed by the Company or by Executive in the course of Executive's work for the Company. In addition, Executive represents that Executive has disclosed to the Company in writing any agreement Executive may have with any third party (e.g., a former employer) which may limit Executive's ability to perform Executive's duties to the Company, or which could present a conflict of interest with the Company, including but not limited to disclosure (and a copy) of any contractual restrictions on solicitations or competitive activities.

7. Outside Activities and Non-Competition During Employment .

7.1 Outside Activities. Throughout Executive's employment with the Company, Executive may engage in civic and not-for-profit activities so long as such activities do not interfere with the performance of Executive's duties hereunder or present a conflict of interest with the Company or its affiliates. Subject to the restrictions set forth herein, and only with prior written disclosure to and consent of the Board, Executive may engage in other types of business or public activities. The Board may rescind such consent, if the Board determines, in its sole discretion, that such activities compromise or threaten to compromise the Company's or its affiliates' business interests or conflict with Executive's duties to the Company or its affiliates.

7.2 Non-Competition During Employment. Throughout Executive's employment with the Company, Executive will not, without the express written consent of the Board, directly or indirectly serve as an officer, director, stockholder, employee, partner, proprietor, investor, joint ventures, associate, representative or consultant of any person or entity engaged in, or planning or preparing to engage in, business activity competitive with any line of business engaged in (or planned to be engaged in) by the Company or its affiliates; provided, however, that Executive may purchase or otherwise acquire up to (but not more than) one percent (1%) of any class of securities of any enterprise (without participating in the activities of such enterprise) if such securities are listed on any national or regional securities exchange. In addition, Executive will be subject to certain restrictions (including restrictions continuing after Executive's employment ends) under the terms of the Proprietary Information Agreement.

8. Termination of Employment; Severance and Change in Control Benefits .

8.1 At-Will Employment. Executive's employment relationship is at-will. Either Executive or the Company may terminate the employment relationship at any time, with or without Cause (as defined below) or advance notice.

8.2 Termination Without Cause or Resignation for Good Reason Unrelated to Change in Control. In the event Executive's employment with the Company is terminated by the Company without Cause (and other than as a result of Executive's death or disability) or Executive resigns for Good Reason, in either case, at any time except during the Change in Control Period (as defined below), then provided such termination constitutes a "separation from service" (as defined under Treasury Regulation Section 1.409A-1(h), without regard to any alternative definition thereunder, a "**Separation from Service**"), and provided that Executive satisfies the Release Requirement in Section 9 below, and remains in compliance with the terms of this Agreement, the Company shall provide Executive with the following "**Severance Benefits** *"*:

8.2.1 Severance Payments. Severance pay in the form of continuation of Executive's final Base Salary for a period of [##] months following termination, subject to required payroll deductions and tax withholdings (the "**Severance Payments**"). Subject to Section 10 below, the Severance Payments shall be made on the Company's regular payroll schedule in effect following Executive's termination date; provided, however that any such payments that are otherwise scheduled to be made prior to the Effective Date of the Release (as defined below) shall instead accrue and be made on the first regular payroll date following the Effective Date of the Release. For such purposes, Executive's final Base Salary will be calculated prior to giving effect to any reduction in Base Salary that would give rise to Executive's right to resign for Good Reason.

8.2.2 Health Care Continuation Coverage Payments .

(i) COBRA Premiums. If Executive timely elects continued coverage under COBRA, the Company will pay Executive's COBRA premiums to continue Executive's coverage (including coverage for Executive's eligible dependents, if applicable) ("**COBRA Premiums**") through the period starting on the termination date and ending [##] months after the termination date (the "**COBRA Premium Period** "); provided, however, that the Company's provision of such COBRA Premium benefits will immediately cease if during the COBRA Premium Period Executive becomes eligible for group health insurance coverage through a new employer or Executive ceases to be eligible for COBRA continuation coverage for any reason, including plan termination. In the event Executive becomes covered under another employer's group health plan or otherwise ceases to be eligible for COBRA during the COBRA Premium Period, Executive must immediately notify the Company of such event.

(ii) Special Cash Payments in Lieu of COBRA Premiums. Notwithstanding the foregoing, if (a) as of the date of Executive's termination of employment Executive is not a participant in a Company group health plan under which he would otherwise be entitled to continued coverage under COBRA or (b) the Company determines, in its sole discretion, that it cannot pay the COBRA Premiums without potentially incurring financial costs

or penalties under applicable law (including, without limitation, Section 2716 of the Public Health Service Act), regardless of whether Executive or Executive's dependents elect or are eligible for COBRA coverage, the Company instead shall pay to Executive, on the first day of each calendar month following the termination date, a fully taxable cash payment equal to the applicable COBRA premiums for that month (including the amount of COBRA premiums for Executive's eligible dependents), subject to applicable tax withholdings (such amount, the "**Special Cash Payment**"), for the remainder of the COBRA Premium Period. Executive may, but is not obligated to, use such Special Cash Payments toward the cost of COBRA premiums or toward premium costs under an individual health plan.

8.3 Termination Without Cause or Resignation for Good Reason During Change in Control Period. In the event Executive's employment with the Company is terminated by the Company without Cause (and other than as a result of Executive's death or disability) at any time during the Change in Control Period or Executive resigns for Good Reason at any time during the Change in Control Period, in lieu of (and not additional to) the Severance Benefits described in Section 8.2, and provided that Executive satisfies the Release Requirement in Section 9 below and remains in compliance with the terms of this Agreement, the Company shall instead provide Executive with the following "**CIC Severance Benefits**". For the avoidance of doubt: (A) in no event will Executive be entitled to severance benefits under Section 8.2 and this Section 8.3, and (B) if the Company has commenced providing Severance Benefits to Executive under Section 8.2 prior to the date that Executive becomes eligible to receive CIC Severance Benefits under this Section 8.3, the Severance Benefits previously provided to Executive under Section 8.2 of this Agreement shall reduce the CIC Severance Benefits provided under this Section 8.3:

8.3.1 CIC Severance Payment. Severance pay in the form of a lump sum payment of [##], payable within sixty (60) days following the termination date and subject to required payroll deductions and tax withholdings (the "**CIC Severance Payment**"); provided, however that, if the period for satisfaction of the Release Requirement (as defined below) begins in one taxable year and ends in another taxable year, payment shall not be made until the beginning of the second taxable year. For such purposes, Executive's final Base Salary will be calculated prior to giving effect to any reduction in Base Salary that would give rise to Executive's right to resign for Good Reason.

8.3.2 CIC Health Care Continuation Coverage Payments.

(i) COBRA Premiums. If Executive timely elects continued coverage under COBRA, the Company will pay Executive's COBRA premiums to continue Executive's coverage (including coverage for Executive's eligible dependents, if applicable) ("**CIC COBRA Premiums**") through the period starting on the termination date and ending [##] months after the termination date (the "**CIC COBRA Premium Period**"); provided, however, that the Company's provision of such CIC COBRA Premium benefits will immediately cease if during the CIC COBRA Premium Period Executive becomes eligible for group health insurance coverage through a new employer or Executive ceases to be eligible for COBRA continuation coverage for any reason, including plan termination. In the event Executive becomes covered under another employer's group health plan or otherwise ceases to be eligible for COBRA during the CIC COBRA Premium Period, Executive must immediately notify the Company of such event.

(ii) Special Cash Payments in Lieu of CIC COBRA Premiums. Notwithstanding the foregoing, if the Company determines, in its sole discretion, that it cannot pay the CIC COBRA Premiums without potentially incurring financial costs or penalties under applicable law (including, without limitation, Section 2716 of the Public Health Service Act), regardless of whether Executive or Executive's dependents elect or are eligible for COBRA coverage, the Company instead shall pay to Executive, on the first day of each calendar month following the termination date, a fully taxable cash payment equal to the applicable COBRA premiums for that month (including the amount of COBRA premiums for Executive's eligible dependents), subject to applicable tax withholdings (such amount, the "**Special CIC Cash Payment**"), for the remainder of the CIC COBRA Premium Period. Executive may, but is not obligated to, use such Special CIC Cash Payments toward the cost of COBRA premiums.

8.3.3 Target Bonus Amount. Executive shall also receive an amount equal to [XX]% of the Target Bonus Amount, payable in a lump sum within sixty (60) days following the termination date and subject to required payroll deductions and tax withholdings; provided, however that, if the period for satisfaction of the Release Requirement (as defined below) begins in one taxable year and ends in another taxable year, payment shall not be made until the beginning of the second taxable year. For purposes of calculating the Target Bonus Amount, Executive's final Base Salary will be calculated prior to giving effect to any reduction in Base Salary that would give rise to Executive's right to resign for Good Reason.

8.3.4 Equity Acceleration. Notwithstanding anything to the contrary set forth in the Company's [2014 Equity Incentive Plan/2018 Inducement Plan], any prior equity incentive plans or any award agreement, effective as of Executive's employment termination date, the vesting and exercisability of all unvested time-based vesting equity awards then held by Executive shall accelerate such that all shares become immediately vested and exercisable, if applicable, by Executive upon such termination and shall remain exercisable, if applicable, following Executive's termination as set forth in the applicable equity award documents. With respect to any performance-based vesting equity award, such award shall continue to be governed in all respects by the terms of the applicable equity award documents.

8.4 Termination for Cause; Resignation Without Good Reason; Death or Disability. Executive will not be eligible for, or entitled to any severance benefits, including (without limitation) the Severance Benefits and CIC Severance Benefits listed in Sections 8.2 and 8.3 above, if the Company terminates Executive's employment for Cause, Executive resigns Executive's employment without Good Reason, or Executive's employment terminates due to Executive's death or disability.

9. Conditions to Receipt of Severance Benefits and Change in Control Severance Benefits. To be eligible for any of the Severance Benefits or CIC Severance Benefits pursuant to Sections 8.2 and 8.3 above, Executive must satisfy the following release requirement (the "**Release Requirement**"): return to the Company a signed and dated general release of all known and unknown claims in a termination agreement acceptable to the Company (the "**Release**") within the applicable deadline set forth therein, but in no event later than forty-five (45) calendar days following Executive's termination date, and permit the Release to become effective and irrevocable in accordance with its terms (such effective date of the Release, the "**Effective Date**"). No Severance Benefits or CIC Severance Benefits will be paid hereunder prior to the Effective Date of the Release. Accordingly, if Executive breaches the preceding sentence and/or refuses to sign and deliver to the Company an executed Release or signs and delivers to the Company the Release but exercises Executive's right, if any, under applicable law to revoke the Release (or any portion thereof), then Executive will not be entitled to any severance, payment or benefit under this Agreement.

10. Section 409A. It is intended that all of the severance benefits and other payments payable under this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Code Section 409A provided under Treasury Regulations 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9), and this Agreement will be construed to the greatest extent possible as consistent with those provisions, and to the extent not so exempt, this Agreement (and any definitions hereunder) will be construed in a manner that complies with Section 409A. For purposes of Code Section 409A (including, without limitation, for purposes of Treasury Regulation Section 1.409A-2(b)(2)(iii)), Executive's right to receive any installment payments under this Agreement (whether severance payments, reimbursements or otherwise) shall be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this Agreement, if Executive is deemed by the Company at the time of Executive's Separation from Service to be a "specified employee" for purposes of Code Section 409A(a)(2)(B)(i), and if any of the payments upon Separation from Service set forth herein and/or under any other agreement with the Company are deemed to be "deferred compensation", then to the extent delayed commencement of any portion of such payments is required in order to avoid a prohibited distribution under Code Section 409A(a)(2)(B)(i) and the related adverse taxation under Section 409A, such payments shall not be provided to Executive prior to the earliest of (i) the expiration of the six-month and one day period measured from the date of Executive's Separation from Service with the Company, (ii) the date of Executive's death or (iii) such earlier date as permitted under Section 409A without the imposition of adverse taxation. Upon the first business day following the expiration of such applicable Code Section 409A(a)(2)(B)(i) period, all payments deferred pursuant to this Paragraph shall be paid in a lump sum to Executive, and any remaining payments due shall be paid as otherwise provided herein or in the applicable agreement. No interest shall be due on any

amounts so deferred. If the Company determines that any severance benefits provided under this Agreement constitutes "deferred compensation" under Section 409A, for purposes of determining the schedule for payment of the severance benefits, the effective date of the Release will not be deemed to have occurred any earlier than the sixtieth (60th) date following the Separation From Service, regardless of when the Release actually becomes effective. In addition to the above, to the extent required to comply with Section 409A and the applicable regulations and guidance issued thereunder, if the applicable deadline for Executive to execute (and not revoke) the applicable Release spans two calendar years, payment of the applicable severance benefits shall not commence until the beginning of the second calendar year. To the extent required to avoid accelerated taxation and/or tax penalties under Code Section 409A, amounts reimbursable to Executive under this Agreement shall be paid to Executive on or before the last day of the year following the year in which the expense was incurred and the amount of expenses eligible for reimbursement (and in-kind benefits provided to Executive) during any one year may not effect amounts reimbursable or provided in any subsequent year. The Company makes no representation that any or all of the payments described in this Agreement will be exempt from or comply with Code Section 409A and makes no undertaking to preclude Code Section 409A from applying to any such payment.

11. Section 280G; Limitations on Payment .

11.1 If any payment or benefit Executive will or may receive from the Company or otherwise (a "**280G Payment**") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "**Excise Tax**"), then any such 280G Payment provided pursuant to this Agreement (a "**Payment**") shall be equal to the Reduced Amount. The "**Reduced Amount**" shall be either (x) the largest portion of the Payment that would result in no portion of the Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the Payment, whichever amount (i.e., the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in Executive's receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in a Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction shall occur in the manner (the "**Reduction Method**") that results in the greatest economic benefit for Executive. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the "**Pro Rata Reduction Method** ").

11.2 Notwithstanding any provision of Section 11.1 to the contrary, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the Payment being subject to taxes pursuant to Section 409A that would not otherwise be subject to taxes pursuant to Section 409A, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, shall be modified so as to avoid the imposition of taxes pursuant to Section 409A as follows: (A) as a first priority, the modification shall preserve to the greatest extent possible, the greatest economic benefit for Executive as determined on an after-tax basis; (B) as a second priority, Payments that are contingent on future events (*e.g.*, being terminated without Cause), shall be reduced (or eliminated) before Payments that are not contingent on future

events; and (C) as a third priority, Payments that are "deferred compensation" within the meaning of Section 409A shall be reduced (or eliminated) before Payments that are not deferred compensation within the meaning of Section 409A.

11.3 Unless Executive and the Company agree on an alternative accounting firm or law firm, the accounting firm engaged by the Company for general tax compliance purposes as of the day prior to the effective date of the Change in Control transaction shall perform the foregoing calculations. If the accounting firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the Change in Control transaction, the Company shall appoint a nationally recognized accounting or law firm to make the determinations required by this Section 11. The Company shall bear all expenses with respect to the determinations by such accounting or law firm required to be made hereunder. The Company shall use commercially reasonable efforts to cause the accounting or law firm engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to Executive and the Company within fifteen (15) calendar days after the date on which Executive's right to a 280G Payment becomes reasonably likely to occur (if requested at that time by Executive or the Company) or such other time as requested by Executive or the Company.

11.4 If Executive receives a Payment for which the Reduced Amount was determined pursuant to clause (x) of Section 11.1 and the Internal Revenue Service determines thereafter that some portion of the Payment is subject to the Excise Tax, Executive agrees to promptly return to the Company a sufficient amount of the Payment (after reduction pursuant to clause (x) of Section 11.1) so that no portion of the remaining Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) of Section 11.1, Executive shall have no obligation to return any portion of the Payment pursuant to the preceding sentence.

12. Definitions.

12.1 Cause. For the purposes of this Agreement, " **Cause**" means the occurrence of any one or more of the following: (i) Executive's conviction of or plea of guilty or *nolo contendere* to any felony or a crime of moral turpitude; (ii) Executive's willful and continued failure or refusal to follow lawful and reasonable instructions of the Chief Executive Officer of the Company or lawful and reasonable policies and regulations of the Company or its affiliates; (iii) Executive's willful and continued failure to faithfully and diligently perform the assigned duties of Executive's employment with the Company or its affiliates; (iv) unprofessional, unethical, immoral or fraudulent conduct by Executive; (v) conduct by Executive that materially discredits the Company or any affiliate or is materially detrimental to the reputation, character and standing of the Company or any affiliate; or (vi) Executive's material breach of this Agreement, the Proprietary Information Agreement, or any applicable Company policies . An event described in Section 12.1(ii) through Section 12.1(vi) herein shall not be treated as "Cause" until after Executive has been given written notice of such event, failure, conduct or breach and Executive fails to cure such event, failure, conduct or breach within 30 days from such written notice; provided, however, that such 30-day cure period shall not be required if the event, failure, conduct or breach is incapable of being cured.

12.2 Change in Control. For the purposes of this Agreement, " **Change in Control**" shall have the meaning described in the Company's [2014 Equity Incentive Plan /2018 Inducement Plan].

12.3 **Change in Control Period.** For the purposes of this Agreement, " **Change in Control Period**" means the time period commencing three (3) months before the effective date of a Change in Control and ending on the date that is twelve (12) months after the effective date of a Change in Control.

12.4 Good Reason. For purposes of this Agreement, Executive shall have " **Good Reason**" for resignation from employment with the Company if any of the following actions are taken by the Company without Executive's prior written consent: (i) a material reduction in Executive's Base Salary, unless pursuant to a salary reduction program applicable generally to the Company's senior executives; (ii) a material reduction in Executive's duties (including responsibilities and/or authorities), provided, however, that a change in job position (including a change in title) or reporting line shall not be deemed a "material reduction" in and of itself unless Executive's new duties are materially reduced from the prior duties; or (iii) relocation of Executive's principal place of employment to a place that increases Executive's one-way commute by more than fifty (50) miles as compared to Executive's then-current principal place of employment immediately prior to such relocation. In order for Executive to resign for Good Reason, each of the following requirements must be met: (iv) Executive must provide written notice to the Company's Chief Executive Officer within 30 days after the first occurrence of the event giving rise to Good Reason setting forth the basis for Executive's resignation, (v) Executive must allow the Company at least 30 days from receipt of such written notice to cure such event, (vi) such event is not reasonably cured by the Company within such 30 day period (the "**Cure Period**"), and (vii) Executive must resign from all positions Executive then holds with the Company not later than 30 days after the expiration of the Cure Period.

13. **Dispute Resolution.** To ensure the rapid and economical resolution of disputes that may arise in connection with Executive's employment with the Company, Executive and the Company agree that any and all disputes, claims, or causes of action, in law or equity, including but not limited to statutory claims, arising from or relating to the enforcement, breach, performance, or interpretation of this Agreement, Executive's employment with the Company, or the termination of Executive's employment from the Company, will be resolved pursuant to the Federal Arbitration Act, 9 U.S.C. §1-16, and to the fullest extent permitted by law, by final, binding and confidential arbitration conducted in [CITY], California before a single arbitrator by JAMS, Inc. ("**JAMS**") or its successors, under JAMS' then applicable rules and procedures for employment disputes (which will be provided to Executive upon request); provided that the arbitrator shall: (i) have the authority to compel adequate discovery for the resolution of the dispute and to award such relief as would otherwise be permitted by law; and (ii) issue a written arbitration decision including the arbitrator's essential findings and conclusions and a statement of the award. Executive and the Company shall be entitled to all rights and remedies that either would be entitled to pursue in a court of law. Questions of whether a claim is subject to arbitration under this Agreement shall be decided by the arbitrator. Likewise, procedural questions which grow out of the dispute and bear on the final disposition are also matters for the arbitrator. **Both Executive and the Company acknowledge that by agreeing to this arbitration procedure, they waive the right to resolve any such dispute through a trial by**

jury or judge or administrative proceeding. The Company shall pay all filing fees in excess of those which would be required if the dispute were decided in a court of law, and shall pay the arbitrator's fee. Nothing in this Agreement is intended to prevent either the Company or Executive from obtaining injunctive relief in court to prevent irreparable harm pending the conclusion of any such arbitration.

14. General Provisions.

14.1 Notices. Any notices provided must be in writing and will be deemed effective upon the earlier of personal delivery (including personal delivery by fax) or the next day after sending by overnight carrier, to the Company at its primary office location and to Executive at the address as listed on the Company payroll.

14.2 Severability. Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be invalid, illegal or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality or unenforceability will not affect any other provision or any other jurisdiction, but this Agreement will be reformed, construed and enforced in such jurisdiction to the extent possible in keeping with the intent of the Parties.

14.3 Waiver. Any waiver of any breach of any provisions of this Agreement must be in writing to be effective, and it shall not thereby be deemed to have waived any preceding or succeeding breach of the same or any other provision of this Agreement.

14.4 Complete Agreement. This Agreement, together with the Proprietary Information Agreement, constitutes the entire agreement between Executive and the Company with regard to the subject matter hereof and is the complete, final, and exclusive embodiment of the Company's and Executive's agreement with regard to this subject matter. This Agreement is entered into without reliance on any promise or representation, written or oral, other than those expressly contained herein, and it supersedes any other such promises, warranties or representations. It cannot be modified or amended except in a writing signed by a duly authorized officer of the Company, with the exception of those changes expressly reserved to the Company's discretion in this Agreement.

14.5 Counterparts. This Agreement may be executed in separate counterparts, any one of which need not contain signatures of more than one party, but both of which taken together will constitute one and the same Agreement.

14.6 Headings. The headings of the paragraphs hereof are inserted for convenience only and shall not be deemed to constitute a part hereof nor to affect the meaning thereof.

14.7 Successors and Assigns. This Agreement is intended to bind and inure to the benefit of and be enforceable by Executive and the Company, and their respective successors, assigns, heirs, executors and administrators, except that Executive may not assign any of Executive's duties hereunder and Executive may not assign any of Executive's rights hereunder without the written consent of the Company, which shall not be withheld unreasonably.

14.8 Tax Withholding. All payments and awards contemplated or made pursuant to this Agreement will be subject to withholdings of applicable taxes in compliance with all relevant laws and regulations of all appropriate government authorities. Executive acknowledges and agrees that the Company has neither made any assurances nor any guarantees concerning the tax treatment of any payments or awards contemplated by or made pursuant to this Agreement. Executive has had the opportunity to retain a tax and financial advisor and fully understands the tax and economic consequences of all payments and awards made pursuant to this Agreement.

14.9 Choice of Law. All questions concerning the construction, validity and interpretation of this Agreement will be governed by the laws of the State of California.

In Witness Whereof, the Parties have executed this Agreement as of the Effective Date written above.

Atara Biotherapeutics, Inc.

By: _____

Isaac Ciechanover, M.D.
Chief Executive Officer

Executive

_____

[NAME]

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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15(d)-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: August 1, 2018

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

Exhibit 31.2

CERTIFICATION OF THE PRINCIPAL FINANCIAL AND ACCOUNTING OFFICER

PURSUANT TO

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

I, Utpal Koppikar 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15(d)-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: August 1, 2018

/s/ Utpal Koppikar
Utpal Koppikar
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, 2018, as filed with the Securities and Exchange Commission (the "Report"), Isaac Ciechanover, Chief Executive Officer of the Company, and Utpal Koppikar, 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 1, 2018

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

/s/ Utpal Koppikar
Utpal Koppikar
Chief Financial Officer
(Principal Financial and Accounting Officer)