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

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2017

or

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

Commission File Number: 001-32587

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

Delaware	**20-2726770**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
19 Firstfield Road, Gaithersburg, Maryland	**20878**
(Address of principal executive offices)	**(Zip Code)**

(240) 654-1450
(Registrant's telephone number, including area code)

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data file required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§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 smaller 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 Act). Yes ☐ No ☒

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date: The number of shares of the registrant's Common Stock, par value $0.0001 per share, outstanding as of August 8, 2017 was 15,422,913

ALTIMMUNE, INC.

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Part I—FINANCIAL INFORMATION

Item 1. Unaudited Condensed Consolidated Financial Statements.

ALTIMMUNE, INC.
UNAUDITED CONDENSED CONSOLIDATED BALANCE SHEETS

	June 30, 2017	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	$ 8,367,774	$ 2,876,113
Restricted cash	34,174	—
Accounts receivable	3,571,703	383,046
Prepaid expenses and other current assets	1,448,818	420,424
Tax refund receivable	3,573,131	807,507
Total current assets	16,995,600	4,487,090
Property and equipment, net	293,233	177,859
Intangible assets, net	38,132,266	14,954,717
Other assets	22,247	22,248
Goodwill	35,398,960	18,758,421
Total assets	$ 90,842,306	$ 38,400,335
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Notes payable	$ 49,702	$ 458,629
Accounts payable	1,130,797	2,005,208
Accrued expenses and other current liabilities	4,297,996	2,972,745
Current portion of deferred revenue	32,253	19,753
Current portion of deferred rent	17,213	14,388
Total current liabilities	5,527,961	5,470,723
Unvested restricted stock liability	372	1,001
Long-term debt	570,545	525,950
Deferred revenue, long-term portion	169,547	179,424
Deferred rent, long-term portion	6,366	15,914
Deferred tax liability	8,544,195	—
Other long-term liability	46,700	—
Total liabilities	14,865,686	6,193,012
Contingencies (Note 11)		
Stockholders' equity:		
Series B convertible preferred stock; $0.01 par value; 599,285 shares authorized; zero and 599,285 shares issued and outstanding at June 30, 2017 and December 31, 2016, respectively	—	5,993
Common stock, $0.0001 par value; 100,000,000 shares authorized; 15,452,579 and 6,986,780 shares issued; 15,424,891 and 6,917,204 shares outstanding at June 30, 2017 and December 31, 2016, respectively	1,542	692
Additional paid-in capital	120,661,697	71,034,899
Accumulated deficit	(38,948,613)	(31,259,449)
Accumulated other comprehensive loss – foreign currency translation adjustments	(5,738,006)	(7,574,812)
Total stockholders' equity	75,976,620	32,207,323
Total liabilities and stockholders' equity	$ 90,842,306	$ 38,400,335

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

ALTIMMUNE, INC.
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
License revenue	$ 4,938	$ 158,465	$ 9,876	$ 163,403
Research grants and contracts	3,033,035	587,502	3,327,668	1,087,473
Total revenue and grants and contracts	3,037,973	745,967	3,337,544	1,250,876
Operating expenses				
Research and development	5,254,729	1,381,513	8,040,851	2,444,131
General and administrative	1,794,509	966,641	3,825,026	2,011,797
Total operating expenses	7,049,238	2,348,154	11,865,877	4,455,928
Loss from operations	(4,011,265)	(1,602,187)	(8,528,333)	(3,205,052)
Other expense:				
Interest expense	(97,156)	(9,618)	(157,759)	(19,248)
Interest income	4,166	845	4,166	845
Other income (expenses)	164	(6,110)	(947)	(6,471)
Total other expense, net	(92,826)	(14,883)	(154,540)	(24,874)
Net loss before income tax benefit	(4,104,091)	(1,617,070)	(8,682,873)	(3,229,926)
Income tax benefit	993,709	—	993,709	—
Net loss	(3,110,382)	(1,617,070)	(7,689,164)	(3,229,926)
Other comprehensive income (loss) – foreign currency translation adjustments	1,256,970	(2,614,220)	1,836,806	(3,804,294)
Total comprehensive loss	$ (1,853,412)	$(4,231,290)	$ (5,852,358)	$(7,034,220)
Net loss	$ (3,110,382)	$(1,617,070)	$ (7,689,164)	$(3,229,926)
Accumulated dividends on preferred stock prior to conversion to common stock	(44,713)	(87,123)	(163,069)	(143,014)
Net loss attributed to common stockholders	$ (3,155,095)	$(1,704,193)	$ (7,852,233)	$(3,372,940)
Weighted-average common shares outstanding, basic and diluted	12,245,701	6,911,189	9,596,423	6,911,189
Net loss per share attributed to common stockholders, basic and diluted	$ (0.26)	$ (0.25)	$ (0.82)	$ (0.49)

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

ALTIMMUNE, INC.
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

	Six Months Ended June 30, 2017	2016
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (7,689,164)	$(3,229,926)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation	684,088	389,729
Depreciation	37,827	29,726
Amortization	26,152	48,788
Debt discount and deferred financing cost accretion	98,060	—
Loss on disposal of property and equipment	3,523	—
Changes in operating assets and liabilities:		
Accounts receivable	(2,064,194)	206,273
Prepaid expenses and other current assets	(588,251)	44,533
Accounts payable	(1,627,477)	122,918
Accrued expenses and other current liabilities	716,649	(440,139)
Deferred revenue	2,623	(47,137)
Deferred rent	(8,136)	(3,981)
Tax refund receivable	(725,106)	(87,584)
Deferred taxes	(15,822)	—
Net cash used in operating activities	(11,149,228)	(2,966,800)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Cash assumed in acquisition	13,684,535	—
Refund of cash held in escrow	200,000	—
Purchase of property and equipment	(83,898)	(12,524)
Additions to intangible assets	(30,626)	(47,374)
Net cash provided by (used in) investing activities	13,770,011	(59,898)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Repayments of notes payable	(212,431)	(99)
Proceeds from issuance of convertible notes, net of issuance costs	3,018,780	531
Payments of deferred offering costs	—	(319,506)
Proceeds from issuance of preferred stock, net of issuance costs	—	3,673,790
Proceeds from preferred stock subscription	46,700	260,000
Proceeds from exercise of stock options	450	—
Net cash provided by financing activities	2,853,499	3,614,716
EFFECT OF EXCHANGE RATES ON CASH	51,553	(100,082)
Net increase in cash and cash equivalents and restricted cash	5,525,835	487,936
Cash and cash equivalents and restricted cash, beginning of period	2,876,113	4,638,711
Cash and cash equivalents and restricted cash, end of period	$ 8,401,948	$ 5,126,647
SUPPLEMENTAL CASH FLOW INFORMATION:		
Cash paid for interest	$ 5,030	$ 1,662
SUPPLEMENTAL NON-CASH FINANCING ACTIVITIES:		
Accrued expenses and notes payable modified and replaced with convertible notes	$ 1,077,540	$ —
Common stock warrants issued in connection with convertible notes	$ 566,793	$ —
Preferred stock subscription reclassified as additional paid-in capital upon preferred stock issuance	$ —	$ 325,280

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

ALTIMMUNE, INC.
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

1. Nature of Business and Basis of Presentation

Altimmune, Inc., headquartered in Gaithersburg, Maryland, United States, together with its subsidiaries (collectively, "Altimmune") is a clinical stage biopharmaceutical company incorporated in 1997 under the laws of the State of Delaware. Altimmune is focused on discovering and developing immunotherapies and vaccines to address significant unmet medical needs. Since its inception, Altimmune has devoted substantially all of its efforts to business planning, research and development, recruiting management and technical staff, and raising capital, and has financed its operations through the issuance of common and convertible preferred stock, long-term debt, and proceeds from research grants and government contracts. Altimmune has not generated any revenues from the sale of any products to date, and there is no assurance of any future revenues from product sales.

Pursuant to an Agreement and Plan of Merger and Reorganization (the "Merger Agreement") dated January 18, 2017, PharmAthene, Inc. ("PharmAthene"), its wholly owned acquisition subsidiaries Mustang Merger Sub Corp I Inc. ("Merger Sub Corp") and Mustang Merger Sub II LLC ("Merger Sub LLC") agreed to acquire 100% of the outstanding capital stock of Altimmune in a reverse triangular merger and reorganization pursuant to section 368(a) of the Internal Revenue Code (the "Mergers")(Note 3).

As a condition for the Mergers, in January 2017, prior to the Mergers, Altimmune entered into a Convertible Promissory Note Purchase Agreement (the "Note Agreement") for the private placement of $8.6 million of 6% convertible notes (the "Notes") (See Notes 1 and 7) to be issued in two separate closings. The initial closing dated March 9, 2017 resulted in $3,150,630 of gross proceeds. The initial closing also included $196,496 of certain existing outstanding notes payable and $881,044 of certain accrued expenses that were modified and became a component of the Notes on March 9, 2017. The second closing of $5.0 million is conditioned upon certain events, but no later than 135 days after the effective date of the Mergers. In connection with the Notes, Altimmune issued warrants to purchase 49,776 shares of Altimmune's common stock to certain noteholders, with an exercise price of $0.01 per share. The warrants are classified as permanent equity (see Note 9).

On May 4, 2017, Altimmune and PharmAthene closed the Mergers in accordance with the terms of the Merger Agreement. Upon the closing of the Mergers, (i) Merger Sub Corp merged with and into Altimmune, with Altimmune remaining as the surviving corporation; (ii) Altimmune then merged with and into Merger Sub LLC, with Merger Sub LLC (renamed as "Altimmune LLC") remaining as the surviving entity; and (iii) PharmAthene was renamed as "Altimmune, Inc." Upon closing of the Mergers, all equity instruments of Altimmune were exchanged for shares of PharmAthene common stock (see Note 3). Altimmune and PharmAthene and its subsidiaries are hereinafter collectively referred to as the "Company" or "we".

The accompanying unaudited condensed consolidated financial statements are prepared pursuant to the rules and regulations of the U.S. Securities and Exchange Commission ("SEC") regarding interim financial reporting. Accordingly, they do not include all of the information and disclosures required by accounting principles generally accepted in the United States for complete consolidated financial statements and should be read in conjunction with Altimmune's audited consolidated financial statements for the year ended December 31, 2016 included in the Registration Statement on Form S-4/A which was filed with the Securities and Exchange Commission on March 31, 2017. In the opinion of management, the Company has prepared the accompanying unaudited condensed consolidated financial statements on the same basis as our audited consolidated financial statements, and these condensed consolidated financial statements include all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation of the results of the interim periods presented. The operating results for the interim periods presented are not necessarily indicative of the results expected for the full year 2017 or any future years or periods.

The unaudited condensed consolidated financial statements have been prepared on the basis of continuity of operations, realization of assets and the satisfaction of liabilities in the ordinary course of business. The financial statements do not include any adjustments relating to the recoverability and classification of recorded assets and liabilities that might be necessary should the Company be unable to continue as a going concern.

2. Going Concern

The accompanying condensed consolidated financial statements have been prepared assuming the Company will continue as a going concern. We have experienced recurring losses in past years and incurred a net loss of $7,689,164 and used $11,149,228 in cash to fund operations during the six months ended June 30, 2017, and had an accumulated deficit of $38,948,613 as of June 30, 2017. We expect to incur additional losses in the future in connection with our research and development activities. Since inception, we have financed our activities principally from the issuance of equity and debt securities and the receipt of proceeds from research grants and government contracts.

The Company's ability to continue as a going concern is dependent upon our ability to raise additional debt and equity capital. There can be no assurance that such capital will be available in sufficient amounts or on terms acceptable to us. These factors raise substantial doubt about our ability to continue as a going concern. The accompanying condensed consolidated financial statements do not include any adjustments relating to the recoverability of the recorded assets or the classification of liabilities that may be necessary should the Company be unable to continue as a going concern.

As capital resources are consumed to fund our research and development activities, we may not have sufficient capital to fund our plan of operations. In order to address our capital needs, including our planned clinical trials, in addition to the Note Agreement and the private placement described in Notes 1 and 7, we must continue to actively pursue additional equity or debt financing.

Adequate financing opportunities might not be available to us, when and if needed, on acceptable terms, or at all. If we are unable to obtain additional financing in sufficient amounts or on acceptable terms under such circumstances, our operating results and prospects will be adversely affected.

As more fully described in Note 3, in January 2017, in connection with the Mergers, Altimmune entered into the Note Agreement for the private placement of $8.6 million of 6% convertible notes (the "Notes"). The combination of the net proceeds from the Notes, cash assumed from the Mergers, expected tax refunds, committed financing, and revenue from our government sponsored contracts will be insufficient to fund our operations and research and development efforts for at least twelve months from the expected issuance date of our June 2017 financial statements.

3. Business Combination

On May 4, 2017, we closed the Mergers with PharmAthene. In accordance with the terms of the Merger Agreement, PharmAthene issued 0.749106 (the "share exchange ratio") of a share of PharmaAthene common stock for each share of Altimmune's $0.0001 par value common stock ("common stock") outstanding as of the closing date. All historical share and per share information including common and preferred stock, common stock warrants, and stock options, has been retroactively adjusted to reflect the impact of the share exchange ratio. In addition, Altimmune's stock options and warrants were also replaced with options and warrants to purchase PharmAthene's common stock at the same exchange ratio of 0.749106 share. Immediately prior to closing, 599,285 shares of Series B convertible preferred stock ("preferred stock") converted into Altimmune common stock on a 1-for-1 basis. Due to the preferred stock having unique terms and conditions, preferred stock was continued to be presented separately on our balance sheet prior to conversion. In addition, outstanding principal and accrued interest on the Notes converted into 316,735 shares of Altimmune common stock. Further, 39,758 shares of Altimmune common stock were issued pursuant to the accelerated vesting of restricted stock, and 660,715 shares of Altimmune common stock were issued as a result of warrant exercises, both in accordance with their original terms. Upon the closing of the Mergers, Altimmune common stock totaling 8,539,263 shares were exchanged for 8,539,263 shares of PharmAthene common stock.

Although PharmAthene was the issuer of the shares and considered the legal acquirer in the Mergers, following the closing, shareholders of Altimmune held 58.2% of the equity interest of the combined entity and assumed control of the combined entity. As a result, the transaction has been accounted for as a reverse merger, with Altimmune considered the accounting acquirer, and the assets and liabilities of PharmAthene have been recorded at their estimated fair value. The unadjusted purchase price allocated to PharmAthene's assets and liabilities was estimated to be $44,742,737 as of the closing date and consisted of the shares of the combined company retained by PharmAthene shareholders, and the estimated fair value of vested PharmAthene stock options and warrants which remained outstanding as of the closing date. Also at the closing, 7,569 outstanding unvested options of PharmAthene with an estimated fair value of $15,173 remained subject to vesting and service requirements. These unvested options will be recorded as operating expense in future periods as the services are delivered and the options vest.

Headquartered in Annapolis, Maryland, PharmAthene was incorporated in Delaware in April 2005. PharmAthene was a biodefense company engaged in Phase II clinical trials in developing a next generation anthrax vaccine. The next generation vaccine is intended to have more rapid time to protection, fewer doses for protection and less stringent requirements for temperature controlled storage and handling than the currently used vaccine. The Mergers enable the combined company to

become a fully integrated, commercially-focused immunotherapeutics company with the ability to create more value than either company could achieve individually. As a publicly listed entity, the Mergers also provide the Company with additional capital financing alternatives to support the combined entity's planned research and development activities.

In addition to the operating assets and liabilities of PharmAthene, Altimmune also acquired PharmAthene's tax attributes, which primarily consisted of a tax refund receivable and approximately $1 million of net operating losses which were limited under Section 382 of the U.S. Internal Revenue Service and were fully reserved, which begin to expire in 2023. We recorded a deferred tax liability related to future tax benefits arising from an in-process research and development asset ("IPR&D") acquired in the Mergers. Goodwill generated from the Mergers is not expected to be deductible for tax purposes.

For accounting purposes, the historical financial statements of Altimmune have not been adjusted to reflect the Mergers, other than adjustments to the capital structure of Altimmune to reflect the historical capital structure of PharmAthene. No other adjustments to Altimmune's assets and liabilities have been made as a result of the Mergers. In connection with the Mergers, Altimmune incurred $1,673,695 of transaction costs, which have been expensed as incurred in the accompanying condensed consolidated financial statements.

The following table lists the various securities of PharmAthene which were outstanding as of May 4, 2017 and whose rights and obligations were assumed by Altimmune following the Mergers:

Outstanding PharmAthene common stock	6,883,498
Outstanding PharmAthene stock options	123,003
Outstanding PharmAthene stock warrants	4,658
Per share fair value of PharmAthene common stock	$ 6.50
Weighted average per share fair value of PharmAthene stock options	$ 0.26
Per share fair value of PharmAthene stock warrants	$ 0.01
Aggregate fair value of consideration	$44,757,910
Less fair value of unvested common stock options	(15,173)
Total fair value of consideration	$44,742,737

The allocation of the purchase consideration to the assets acquired and liabilities assumed of PharmAthene in these financial statements was preliminary and subject to change as management gathers information regarding these items. The initial allocation of the purchase consideration was as follows:

Cash and cash equivalents	$ 13,684,535
Accounts receivable	1,124,462
Prepaid expenses and other current assets	597,172
Tax refund receivable	2,002,534
Property and equipment	75,779
IPR&D	22,389,000
Goodwill	15,623,057
Total assets acquired	55,496,539
Accounts payable and accrued expenses	(2,193,785)
Deferred tax liability	(8,560,017)
Total liabilities assumed	(10,753,802)
Net assets acquired	$ 44,742,737

We relied on significant level 3 unobservable inputs to estimate the fair value of acquired IPR&D assets using management's estimate of future revenue and expected profitability of the products after taking into account an estimate of future expenses necessary to bring the products to completion. These projected cash flows were then discounted to their present values using a discount rate of 23%, which was considered commensurate with the risks and stages of development of the products.

The operating activities of PharmAthene have been included in the accompanying condensed consolidated financial statements from the date of the Mergers. For the period from May 4, 2017 to June 30, 2017, revenues and net loss of PharmAthene included in the accompanying condensed consolidated financial statements aggregated $427,522 and $447,914, respectively. The following unaudited pro forma information for the six months ended June 30, 2017 and 2016 gives effect to the acquisition of PharmAthene as if the Mergers had occurred at the beginning of the respective full annual reporting period:

	Six Months Ended June 30, 2017	2016
Revenue and grants and contracts	$ 4,443,495	$ 4,367,824
Net (loss) income attributable to common stockholders	$ (6,110,625)	$ 3,077,774
Weighted average common shares outstanding, basic	15,119,716	14,166,825
Net (loss) income per share, basic	$ (0.40)	$ 0.22
Weighted average common shares outstanding, diluted	15,119,716	15,089,819
Net (loss) income per share, diluted	$ (0.40)	$ 0.20

4. Summary of Significant Accounting Policies

Segment information

Operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision maker, our Chief Executive Officer, in making decisions regarding resource allocation and assessing performance. We view our operations and manage our business in one operating segment, the research and development of immunotherapies and vaccines.

Business combination

We use our best estimates and assumptions to accurately assign fair value to the tangible and intangible assets acquired and liabilities assumed at the acquisition date. Our estimates are inherently uncertain and subject to refinement. During the measurement period, which may be up to one year from the acquisition date, we may record adjustments to the fair value of these tangible and intangible assets acquired and liabilities assumed, with the corresponding offset to goodwill. In addition, uncertain tax positions and tax-related valuation allowances are initially established in connection with a business combination as of the acquisition date. Our management collects information and reevaluates these estimates and assumptions quarterly and records any adjustments to our preliminary estimates to goodwill during the measurement period. Upon the conclusion of the measurement period or final determination of the fair value of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to our consolidated statements of operations and comprehensive loss.

Amounts paid for acquisitions are allocated to the assets acquired and liabilities assumed based on their estimated fair values at the date of acquisition. The Company allocates the purchase price in excess of net tangible assets acquired to identifiable intangible assets, including purchased IPR&D assets. The fair value of identifiable intangible assets is based on detailed valuations that use information and assumptions provided by management. We allocate any excess purchase price over the fair value of the net tangible and intangible assets acquired to goodwill.

Our IPR&D assets represent the estimated fair value as of the acquisition date of substantive in-process projects that have not reached technological feasibility. The primary basis for determining technological feasibility of these projects is obtaining regulatory approval.

The valuation of IPR&D assets is determined using the discounted cash flow method. In determining the value of IPR&D assets, management considers, among other factors, the stage of completion of the projects, the technological feasibility of the projects, whether the projects have an alternative future use and the estimated residual cash flows that could be generated from the various projects and technologies over their respective projected economic lives. The discount rate used is determined at the time of acquisition and includes a rate of return which accounts for the time value of money, as well as risk factors that reflect the economic risk that the cash flows projected may not be realized.

Impairment of long-lived assets and goodwill

We evaluate our long-lived tangible and intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Impairment of long-lived assets is assessed by comparing the undiscounted cash flows expected to be generated by the asset to its carrying value. We test goodwill for impairment during the fourth quarter of each year, or more frequently if impairment indicators arise. During the six months ended June 30, 2017, we adopted the Financial Accounting Standards Board ("FASB") Accounting Standards Update ("ASU") No. 2017-04, *Simplifying the Test for Goodwill Impairment* ("ASU 2017-04"), which provides for a one-step quantitative test. If the carrying value of a reporting unit exceeds its fair value, the amount of goodwill impairment is the excess of the reporting unit's carrying amount over its fair value, not to exceed the total amount of goodwill allocated to the reporting unit. We consider multiple methods including both market and income approaches to determine fair value of our one reporting unit, including fair value estimated based on our market capitalization (a level 1 input) as of or near the testing date, adjusted for an estimated control premium.

From the date of the Mergers through June 30, 2017, we experienced a decline in the trading price of our common stock. As of June 30, 2017, our one reporting unit had an estimated average market capitalization through June 30, 2017, excluding an estimated control premium, of approximately $50.9 million as compared to the carrying value of the reporting unit of $76.0 million, which is an impairment indicator. We performed an interim impairment test on our goodwill and a qualitative assessment of our long-lived assets as of June 30, 2017. Based on the result of the goodwill impairment test, the carrying value of the Company's net equity at June 30, 2017 of $76.0 million fell within the high end of an estimated range of control-adjusted fair value. A hypothetical downward adjustment of 10% of the top end of the range of our control premium would have resulted in a potential impairment of our goodwill of $2.2 million. We have concluded that our goodwill and long-lived assets were not impaired at June 30, 2017 and no impairment adjustments were recorded in the six months ended June 30, 2017. We will continue to evaluate our goodwill for impairment based on factors including the overall movements of our market capitalization. Any sustained declines in our stock price from the June 30, 2017 level could result in a future impairment and the overall amount of impairment loss could be material.

Our IPR&D assets are currently non-amortizing. Until such time as the projects are either completed or abandoned, we test those assets for impairment annually by comparing the fair value of such assets to their carrying value. On an interim basis, we consider qualitative factors which could be indicative of impairment; these factors include the current project status, forecasted changes in the timing or amounts required to complete the project, forecasted changes in the future cash flows to be generated by the completed products, and changes to other market based assumptions, such as discount rates. Upon completion or abandonment, the value of the IPR&D assets will be amortized to expense or the anticipated useful life of the developed products, if completed, or charged to expense when abandoned if no alternative future use exists. As of June 30, 2017, the projects continue to progress as originally anticipated, and no significant changes to the timing or amount of cash flows or any other market assumptions appears to have occurred, and management concluded that the IPR&D assets are not impaired.

Income Taxes

We account for income taxes using the asset and liability approach, which requires the recognition of future tax benefits or liabilities on the temporary differences between the financial reporting and tax bases of our assets and liabilities. A valuation allowance is established when necessary to reduce deferred tax assets to the amounts expected to be realized. We also recognize a tax benefit from uncertain tax positions only if it is "more likely than not" that the position is sustainable based on its technical merits.

Pursuant to federal and state tax regulations with respect to carryback periods of certain net operating losses ("NOLs"), in 2017, as a result of the Mergers, we anticipate that we will be able to carryback 2017 NOLs to 2016, which we expect will allow us to recover previously paid federal and state income taxes by PharmAthene of up to approximately $10 million. These anticipated refunds generated through June 30, 2017, are included as a component of tax refund receivable on the unaudited condensed consolidated balance sheet at June 30, 2017 and an income tax benefit during the three and six months ended June 30, 2017.

Stock Compensation

We adopted FASB's ASU No. 2016-09, *Compensation – Stock Compensation* ("ASU 2016-09") on January 1, 2017. The adoption of ASU 2016-09 did not have a material impact on our financial statements. We elected to adopt the cash flow presentation of the excess tax benefits prospectively, commencing with our cash flow statement for the three months ended March 31, 2017. We have elected to continue to estimate the number of stock-based awards expected to vest, rather than electing to account for forfeitures as they occur to determine the amount of compensation cost to be recognized in each period. There was no impact to our computation of dilutive EPS as all securities were considered anti-dilutive.

Recently issued accounting pronouncements

In May 2014, FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* ("ASU 2014-09"), as amended, which amends the guidance for revenue recognition to replace numerous industry specific requirements. ASU 2014-09, as amended, implements a five-step process for customer contract revenue recognition that focuses on transfer of control, as opposed to transfer of risk and rewards. ASU 2014-09, as amended, also requires enhanced disclosures regarding the nature, amount, timing, and uncertainty of revenues and cash flows from contracts with customers. Other major provisions include ensuring the time value of money is considered in the transaction price, and allowing estimates of variable consideration to be recognized before contingencies are resolved in certain circumstances. ASU 2014-09, as amended, is effective for reporting periods beginning after December 15, 2017. Early adoption is permitted, but not before December 15, 2016. Entities can transition to the standard either retrospectively or as a cumulative-effect adjustment as of the date of adoption. We are currently in the process of evaluating the effect the adoption of ASU 2014-09, as amended, may have on our financial statements. As the majority of our revenues relate to research grants and government contracts, we do not expect the adoption of ASU 2014-09, as amended, will have a material impact on our financial statements.

In February 2016, FASB issued ASU No. 2016-02, *Leases* ("ASU 2016-02"). ASU 2016-02 requires a lessee to separate the lease components from the non-lease components in a contract and recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. It also aligns lease accounting for lessors with the revenue recognition guidance in ASU 2014-09. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, and is to be applied at the beginning of the earliest period presented using a modified retrospective approach. We do not expect the adoption of ASU 2016-02 will have a material impact on our financial statements.

5. Net Loss Per Share

Because we have reported a net loss attributable to common stockholders for all periods presented, basic and diluted net loss per share attributable to common stockholders are the same for all periods presented. For periods presented, all preferred stock, unvested restricted stock, common stock warrants, and stock options have been excluded from the computation of diluted weighted-average shares outstanding because such securities would have an antidilutive impact.

The following table sets forth the computation of basic and diluted net loss per share:

	Three Months Ended June 30, 2017	2016	Six Months Ended June 30, 2017	2016
Numerator:				
Net loss	$ (3,110,382)	$(1,617,070)	$(7,689,164)	$(3,229,926)
Less: Accumulated dividends on preferred stock	(44,713)	(87,123)	(163,069)	(143,014)
Net loss attributed to common stockholders	$ (3,155,095)	$(1,704,193)	$(7,852,233)	$(3,372,940)
Denominator:				
Weighted-average common shares outstanding, basic and diluted	12,245,701	6,911,189	9,596,423	6,911,189
Net loss per share attributed to common stockholders, basic and diluted	$ (0.26)	$ (0.25)	$ (0.82)	$ (0.49)

Potential common shares issuable upon conversion, vesting or exercise of preferred stock, unvested restricted stock, common stock warrants, and stock options that are excluded from the computation of diluted weighted-average shares outstanding are as follows:

	Three Months Ended June 30, 2017	2016	Six Months Ended June 30, 2017	2016
Preferred stock	—	449,464	—	449,464
Common stock warrants	4,658	477,613	4,658	477,613
Common stock options	1,469,659	1,308,896	1,469,659	1,308,896
Restricted stock	36,962	—	36,962	—

6. Goodwill and Intangible Assets

Changes in the carrying amounts of IPR&D assets and goodwill for the six months ended June 30, 2017 were:

	IPR&D	Goodwill
Balance, beginning of period	$14,477,019	$18,758,421
Preliminary valuation of assets acquired through the Mergers	22,389,000	15,623,057
Foreign currency translation adjustments	784,075	1,017,482
Balance, end of period	$37,650,094	$35,398,960

Our intangible assets consisted of the following:

	Estimated Useful Lives	December 31, 2016 Gross Carrying Value	Accumulated Amortization	Net Book Value
Internally developed patents	6-10 years	$ 624,454	$ (211,956)	$ 412,498
Acquired licenses	16-20 years	285,000	(219,800)	65,200
Total intangible assets subject to amortization		909,454	(431,756)	477,698
IPR&D assets	Indefinite	14,477,019	—	14,477,019
Total		$15,386,473	$ (431,756)	$14,954,717

	Estimated Useful Lives	June 30, 2017 Gross Carrying Value	Accumulated Amortization	Net Book Value
Internally developed patents	6-10 years	$ 655,080	$ (229,339)	$ 425,741
Acquired licenses	16-20 years	285,000	(228,569)	56,431
Total intangible assets subject to amortization		940,080	(457,908)	482,172
IPR&D assets	Indefinite	37,650,094	—	37,650,094
Total		$38,590,174	$ (457,908)	$38,132,266

Amortization expense of intangible assets subject to amortization totaled $13,597 and $37,035 for the three months ended June 30, 2017 and 2016, and $26,152 and $48,788 for the six months ended June 30, 2017 and 2016, respectively. Amortization expense was classified as research and development expenses in the accompanying unaudited condensed consolidated statements of operations and comprehensive loss.

As of June 30, 2017, future estimated amortization expense is as follows:

Years ending December 31,	
The remainder of 2017	$ 41,612
2018	52,320
2019	47,521
2020	34,075
2021	13,515
2022 and thereafter	293,129
Total	$482,172

7. Notes Payable

As a condition for the Mergers as described in Note 3, Altimmune entered into the Note Agreement on January 18, 2017. The Notes bear interest at a rate of 6% per annum, compounded annually. On February 28, 2017, as part of the initial closing, $196,496 of the Notes were issued upon the conversion of outstanding principal of certain prior notes payable, and $881,044 of the Notes were issued upon the conversion of certain outstanding accrued expenses. The conversion of the prior notes payable into the Notes was accounted for as a modification with no resulting gains or losses being recognized. On March 9, 2017, the remainder of the initial closing of the Notes was issued for an aggregate of $3,150,630 in gross proceeds. In connection with the issuance of the Notes, we granted warrants for the purchase of up to 49,776 shares of our common stock to certain noteholders. The allocated fair value of the warrants on the issuance date of $566,793 was accounted for as a debt issuance discount to be accreted over the term of the Notes using the interest method.

All outstanding principal and accrued interest on the Notes were converted into our common stock upon the close of the Mergers. As of May 4, 2017, the close of the Mergers, outstanding principal and accrued interest, net of unamortized discount and deferred financing costs totaling $3,645,424 were converted into 316,735 shares of our common stock. Interest expense incurred on the Notes prior to conversion totaled $83,207 and $136,629 for the three and six months ended June 30, 2017, respectively.

8. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consist of the following:

	June 30, 2017	December 31, 2016
Accrued professional services	$ 256,737	$ 689,135
Accrued board of director compensation	106,930	606,199
Accrued payroll and employee benefits	555,170	957,719
Accrued interest	536	169,790
Accrued research and development costs	3,378,623	549,902
Total	$4,297,996	$2,972,745

9. Warrants

Our common stock warrants issued to date have been classified as permanent equity and were initially recorded at their grant date fair value, but are not subsequently remeasured.

All warrants reflect the impact of the share exchange ratio discussed in Note 3. A summary of warrant activity during the three and six months ended June 30, 2017 and 2016 is as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Warrants outstanding, beginning of period	666,546	343,114	616,770	208,614
Issuances	—	134,499	49,776	268,999
Exercises and conversions	(661,888)	—	(661,888)	—
Warrants outstanding, end of period	4,658	477,613	4,658	477,613

In connection with Mergers, 660,715 warrants were exercised. Common stock warrants issued in connection with the Notes (see Notes 1 and 7) were accounted for as permanent equity and were recorded at the issuance date using a relative fair value allocation method, and were not subsequently remeasured. The fair value used to determine the warrants' initial carrying value was measured using Level 3 inputs and was estimated using the Black-Scholes option pricing model and the following assumptions:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Expected volatility	64.24%	77.00%	61.00%	76.00%
Expected term (years)	4.75	4.58	0.10	4.82
Risk-free interest rate	1.72%	1.15%	0.74%	1.65%
Expected dividend yield	0.00%	0.00%	0.00%	0.00%

10. Stock-Based Compensation

Stock Options

The Company's stock option awards generally vest over four years and typically have a contractual life of ten years. At June 30, 2017, there was $1,837,776 of unrecognized compensation cost related to stock options, which is expected to be recognized over a weighted-average period of 2.59 years. During the six months ended June 30, 2017, the Company issued 597 shares of common stock as a result of option exercises. There were no option exercises during the three months ended June 30, 2017.

Information related to stock options outstanding at June 30, 2017 is as follows:

	Number of Stock Options	Weighted-average Exercise Price	Weighted-average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding	1,469,659	$ 6.94	3.18	$2,078,412
Exercisable	1,144,535	$ 6.21	2.55	$2,061,156
Expected to vest	325,124	$ 9.51	5.39	$ 17,256

Restricted Stock

At June 30, 2017, we had unvested restricted stock of 27,688 shares with total unrecognized compensation expense of $118,180, which we expect to recognize over a weighted average period of approximately 3.25 years. During the three and six months ended June 30, 2017, the Company released 41,888 and 46,858 shares of common stock from restriction, respectively, as a result of the vesting and accelerated vesting of restricted stock.

Stock-based compensation expense

Stock-based compensation expense is classified in the unaudited condensed consolidated statements of operations and comprehensive loss for the three and six months ended June 30, 2017 and 2016 as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Research and development	$ 81,213	$101,767	$156,288	$152,725
General and administrative	257,774	125,616	527,800	237,004
Total	$338,987	$227,383	$684,088	$389,729

11. Contingencies

The Company is a party in various other contractual disputes, litigation, and potential claims arising in the ordinary course of business. We do not believe that the resolution of these matters will have a material adverse effect on our financial position or results of operations.

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

The following discussion and analysis of our financial condition and results of operations should be read together with our condensed consolidated financial statements and related notes appearing elsewhere in this Quarterly Report on Form 10-Q and our consolidated financial statements and related notes for the year ended December 31, 2016 included in the Registration Statement on Form S-4/A, which was filed with the Securities and Exchange Commission on March 31, 2017 ("Form S-4/A").

This Quarterly Report on Form 10-Q contains forward-looking statements that involve substantial risks and uncertainties. The words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. There are a number of important risks and uncertainties that could cause our actual results to differ materially from those indicated by forward-looking statements. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our

forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this Quarterly Report on Form 10-Q, particularly in the section entitled "Risk Factors" in Part II, Item 1A that could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments that we may make.

We have based the forward-looking statements included in this Quarterly Report on Form 10-Q on information available to us on the date of this Quarterly Report, and we assume no obligation to update any such forward-looking statements, other than as required by law. Although we undertake no obligation to revise or update any forward-looking statements, whether as a result of new information, future events or otherwise, you are advised to consult any additional disclosures that we may make directly to you or through reports that we, in the future, may file with the SEC, including Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K.

Overview

We are a clinical stage immunotherapeutics company focused on the development of products to stimulate robust and durable immune responses for the prevention and treatment of diseases. We have two proprietary platform technologies, RespirVec and Densigen, each of which has been shown, in preclinical studies and early clinical trials, to activate the immune system in distinctly different ways than traditional vaccine methods. Using these technologies, we have generated clinical product candidates which potentially represent an entirely new approach to harnessing the immune system. Our most advanced product candidate, NasoVAX, an intranasally administered recombinant influenza vaccine, uses an adenovector to achieve expression of the influenza antigen in the target cell, thereby potentially stimulating a broader and more rapid immune response than traditional influenza vaccines. Our planned Phase 2 program for NasoVAX is expected to start in third quarter 2017, with initial data anticipated approximately six months following the start of enrollment. Our second most advanced product candidate, HepTcell, is being tested as an immunotherapy for patients chronically infected with the hepatitis B virus (''HBV''), and has the potential to provide a functional cure, something that is not achievable with current treatments. HepTcell is currently in a Phase 1 trial in the United Kingdom and South Korea in patients with chronic HBV. Initial results from this trial are expected by the end of 2017. With the support of the U.S. Biomedical Advanced Research and Development Authority (''BARDA''), we are developing a third product candidate, NasoShield, an anthrax vaccine designed to provide rapid, stable protection after one intranasal administration. Subject to continued financial and other support from BARDA, we anticipate launching a Phase 1 trial for NasoShield in the first quarter of 2018. With the support of the National Institute of Allergy and Infectious Disease ("NIAID"), we are developing a fourth product candidate, SparVax-L, a recombinant protein based anthrax vaccine designed to require fewer doses and have a longer shelf-life than the only currently licensed anthrax vaccine.

Pursuant to the Agreement and Plan of Merger and Reorganization (the "Merger Agreement") dated January 18, 2017, PharmAthene, Inc. ("PharmAthene"), its wholly owned acquisition subsidiaries Mustang Merger Sub Corp I Inc. ("Merger Sub Corp") and Mustang Merger Sub II LLC ("Merger Sub LLC") agreed to acquire 100% of Altimmune's outstanding capital stock in a reverse triangular merger and reorganization pursuant to section 368(a) of the Internal Revenue Code (the "Mergers"). Upon the closing of the Mergers, (i) Merger Sub Corp merged with and into Altimmune, with Altimmune remaining as the surviving corporation; (ii) Altimmune then merged with and into Merger Sub LLC, with Merger Sub LLC (renamed as "Altimmune LLC") remaining as the surviving entity; and (iii) PharmAthene was renamed as "Altimmune, Inc."

As a condition for the Mergers, in January 2017, Altimmune entered into a Convertible Promissory Note Purchase Agreement (the "Note Agreement") for the private placement of $8.6 million of 6% convertible notes (the "Notes") to be issued in two separate closings. The initial closing dated March 9, 2017 resulted in $3,150,630 of gross proceeds. The initial closing also included $196,496 of certain existing outstanding notes payable and $881,044 of certain accrued expenses that were modified and became a component of the Notes on February 28, 2017. The second closing of $5.0 million is conditioned upon certain events, but no later than 135 days after the effective date of the Mergers. In connection with the Notes, Altimmune issued warrants to purchase 49,776 shares of Altimmune's common stock to certain noteholders, with an exercise price of $0.01 per share.

In accordance with the terms of the Merger Agreement, PharmAthene issued 0.749106 (the "share exchange ratio") of a share of PharmaAthene common stock for each share of Altimmune common stock outstanding as of the closing date. All historical share and per share information has been retroactively adjusted to reflect the impact of the share exchange ratio. In addition, Altimmune stock options and warrants were also replaced with options and warrants to purchase PharmAthene's common stock at the same

exchange ratio of 0.749106 share. Immediately prior to closing, 599,285 shares of our Series B convertible preferred stock ("preferred stock") were converted into Altimmune common stock on a 1-for-1 basis. In addition, outstanding principal and accrued interest on the Notes were converted into 316,735 shares of Altimmune common stock. Further, 39,758 shares of Altimmune common stock were issued pursuant to the accelerated vesting of restricted stock, and 660,715 shares of Altimmune common stock were issued as a result of warrant exercises, both in accordance with their original terms. Upon the closing of the Mergers, all outstanding shares of Altimmune common stock were exchanged for 8,539,263 shares of PharmAthene common stock.

Following the closing, shareholders of Altimmune held 58.2% of the equity interest of the combined entity and assumed control of the combined entity. As a result, the transaction has been accounted for as a reverse merger, and the assets and liabilities of PharmAthene will be recorded at their estimated fair value. The unadjusted purchase price to be allocated to PharmAthene's assets and liabilities was estimated to be $44,742,737 as of the closing date and consisted of the shares of the combined company retained by PharmAthene shareholders, and the estimated fair value of vested PharmAthene stock options and warrants which remained outstanding as of the closing date. Also at the closing, 7,569 shares of PharmAthene outstanding stock options with an estimated fair value of $15,173 remained subject to vesting and service requirements. These unvested options will be recorded as operating expense in future periods as the services are delivered and the options vest.

We have incurred accumulated losses since inception. Our ability to continue as a going concern is dependent upon our ability to raise additional debt and equity capital. There can be no assurance that such capital will be available in sufficient amounts or on terms acceptable to us. These factors raise substantial doubt about our ability to continue as a going concern. The accompanying condensed consolidated financial statements do not include any adjustments relating to the recoverability of the recorded assets or the classification of liabilities that may be necessary should the Company be unable to continue as a going concern.

As capital resources are consumed to fund our research and development activities, we may not have sufficient capital to fund our plan of operations. In order to address its capital needs, including our planned clinical trials, in addition to the Note Agreement and the private placement, we must continue to actively pursue additional equity or debt financing.

Adequate financing opportunities might not be available to us, when and if needed, on acceptable terms, or at all. If we are unable to obtain additional financing in sufficient amounts or on acceptable terms under such circumstances, our operating results and prospects will be adversely affected. As of June 30, 2017, the combination of the net proceeds from the Notes, cash assumed from the Mergers, the anticipated receipt of tax refunds, committed financing, and revenue from our government sponsored contracts will be insufficient to fund our operations and research and development efforts for at least twelve months from the expected issuance date of our June 2017 financial statements.

Critical Accounting Policies and Significant Judgment and Estimates

Other than described below, there were no material changes in the first six months of 2017 to the information provided under the heading "Critical Accounting Policies and Significant Judgment and Estimates" or in the significant accounting policies in our consolidated financial statements for the year ended December 31, 2016 included in Form S-4/A.

Business combination

We use our best estimates and assumptions to accurately assign fair value to the tangible and intangible assets acquired and liabilities assumed at the acquisition date. Our estimates are inherently uncertain and subject to refinement. During the measurement period, which may be up to one year from the acquisition date, we may record adjustments to the fair value of these tangible and intangible assets acquired and liabilities assumed, with the corresponding offset to goodwill. In addition, uncertain tax positions and tax-related valuation allowances are initially established in connection with a business combination

as of the acquisition date. Our management collects information and reevaluates these estimates and assumptions quarterly and records any adjustments to our preliminary estimates to goodwill during the measurement period. Upon the conclusion of the measurement period or final determination of the fair value of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to our consolidated statements of operations and comprehensive loss.

Amounts paid for acquisitions are allocated to the assets acquired and liabilities assumed based on their estimated fair values at the date of acquisition. We allocate the purchase price in excess of net tangible assets acquired to identifiable intangible assets, including purchased IPR&D assets. The fair value of identifiable intangible assets is based on detailed valuations that use information and assumptions provided by management. We allocate any excess purchase price over the fair value of the net tangible and intangible assets acquired to goodwill.

Our IPR&D assets represent the estimated fair value as of the acquisition date of substantive in-process projects that have not reached technological feasibility. The primary basis for determining technological feasibility of these projects is obtaining regulatory approval.

The valuation of IPR&D assets is determined using the discounted cash flow method. In determining the value of IPR&D assets, management considers, among other factors, the stage of completion of the projects, the technological feasibility of the projects, whether the projects have an alternative future use and the estimated residual cash flows that could be generated from the various projects and technologies over their respective projected economic lives. The discount rate used is determined at the time of acquisition and includes a rate of return which accounts for the time value of money, as well as risk factors that reflect the economic risk that the cash flows projected may not be realized.

Impairment of long-lived assets and goodwill

We evaluate our long-lived tangible and intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Impairment of long-lived assets is assessed by comparing the undiscounted cash flows expected to be generated by the asset to its carrying value. We test goodwill for impairment during the fourth quarter of each year, or more frequently if impairment indicators arise. During the six months ended June 30, 2017, we adopted the Financial Accounting Standards Board ("FASB") Accounting Standards Update ("ASU") No. 2017-04, *Simplifying the Test for Goodwill Impairment*, ("ASU 2017-04") which provides for a one-step quantitative test. If the carrying value of a reporting unit exceeds its fair value, the amount of goodwill impairment is the excess of the reporting unit's carrying amount over its fair value, not to exceed the total amount of goodwill allocated to the reporting unit. We consider multiple methods including both market and income approaches to determine fair value of our one reporting unit including fair value estimated based on our market capitalization (a level 1 input) as of or near the testing date, adjusted for an estimated control premium.

From the date of the Mergers through June 30, 2017, we experienced a decline in the trading price of our common stock. As of June 30, 2017, our one reporting unit had an estimated average market capitalization through June 30, 2017, defined as the number of common shares outstanding multiplied by the traded market price of our common stock on June 30, 2017, excluding an estimated control premium, of approximately $50.9 million as compared to the carrying value of the reporting unit of $76.0 million, which is an indicator of impairment. We performed an interim impairment test on our goodwill and a qualitative assessment of our long-lived assets as of June 30, 2017. Based on the result of the goodwill impairment test, the carrying value of the Company's net equity at June 30, 2017 of $76.0 million fell within the high end of an estimated range of control-adjusted fair value. A hypothetical downward adjustment of 10% of the top end of the range of our control premium would have resulted in a potential impairment of our goodwill of $2.2 million. We have concluded that our goodwill and long-lived assets were not impaired at June 30, 2017 and no impairment adjustments were recorded in the six months ended June 30, 2017. We will continue to evaluate our goodwill for impairment based on factors including the overall movements of our market capitalization. Any sustained declines in our stock price from the June 30, 2017 level could result in a future impairment and the overall amount of impairment loss could be material.

Our IPR&D assets are currently non-amortizing. Until such time as the projects are either completed or abandoned, we test those assets for impairment annually by comparing the fair value of such assets to their carrying value. On an interim basis, we consider qualitative factors which could be indicative of impairment; these factors include the current project status, forecasted changes in the timing or amounts required to complete the project, forecasted changes in the future cash flows to be generated by the completed products, and changes to other market based assumptions, such as discount rates. Upon completion or abandonment, the value of the IPR&D asset will be amortized to expense or the anticipated useful life of the developed product, if completed, or charged to expense when abandoned if no alternative future use exists. As of June 30, 2017, the projects continue to progress as originally anticipated, and no significant changes to the timing or amount of cash flows or any other market assumptions appears to have occurred, and management concluded that the IPR&D assets are not impaired.

Income Taxes

We account for income taxes using the asset and liability approach, which requires the recognition of future tax benefits or liabilities on the temporary differences between the financial reporting and tax bases of our assets and liabilities. A valuation allowance is established when necessary to reduce deferred tax assets to the amounts expected to be realized. We also recognize a tax benefit from uncertain tax positions only if it is "more likely than not" that the position is sustainable based on its technical merits.

Pursuant to federal and state tax regulations with respect to carryback periods of net operating losses ("NOLs"), in 2017, as a result of the Mergers, we anticipate that we will be able to carryback 2017 NOLs to 2016, which we expect will allow us to recover previously paid federal and state income taxes. These anticipated refunds generated through June 30, 2017, are included as a component of tax refund receivable on the unaudited condensed consolidated balance sheet at June 30, 2017 and an income tax benefit during the three and six months ended June 30, 2017.

Recently issued accounting pronouncements

In May 2014, FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* ("ASU 2014-09"), as amended, which amends the guidance for revenue recognition to replace numerous industry specific requirements. ASU 2014-09, as amended, implements a five-step process for customer contract revenue recognition that focuses on transfer of control, as opposed to transfer of risk and rewards. ASU 2014-09, as amended, also requires enhanced disclosures regarding the nature, amount, timing, and uncertainty of revenues and cash flows from contracts with customers. Other major provisions include ensuring the time value of money is considered in the transaction price, and allowing estimates of variable consideration to be recognized before contingencies are resolved in certain circumstances. ASU 2014-09, as amended, is effective for reporting periods beginning after December 15, 2017. Early adoption is permitted, but not before December 15, 2016. Entities can transition to the standard either retrospectively or as a cumulative-effect adjustment as of the date of adoption. We are currently in the process of evaluating the effect the adoption of ASU 2014-09, as amended, may have on our financial statements. We do not expect the adoption of ASU 2014-09, as amended, will have a material impact on our financial statements.

In February 2016, FASB issued ASU No.2016-02, *Leases* ("ASU 2016-02"). ASU 2016-02 requires a lessee to separate the lease components from the non-lease components in a contract and recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. It also aligns lease accounting for lessors with the revenue recognition guidance in ASU 2014-09. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, and is to be applied at the beginning of the earliest period presented using a modified retrospective approach. We do not expect the adoption of ASU 2016-02 will have a material impact on our financial statements.

Results of Operations

Comparison of the three months ended June 30, 2017 and 2016

	Three Months Ended June 30,			
	2017	2016	Increase (Decrease)	
License revenue	$ 4,938	$ 158,465	$ (153,527)	(97)%
Research grants and contracts	3,033,035	587,502	2,445,533	416
Total revenue and grants and contracts	3,037,973	745,967	2,292,006	307
Operating expenses				
Research and development	5,254,729	1,381,513	3,873,216	280
General and administrative	1,794,509	966,641	827,868	86
Total operating expenses	7,049,238	2,348,154	4,701,084	200
Loss from operations	(4,011,265)	(1,602,187)	2,409,078	150
Other expenses:				
Interest expense	(97,156)	(9,618)	87,538	910
Interest income	4,166	845	3,321	393
Other income (expenses)	164	(6,110)	6,274	103
Total other expenses, net	(92,826)	(14,883)	77,943	524
Net loss before income tax benefit	(4,104,091)	(1,617,070)	2,487,021	154
Income tax benefit	993,709	—	993,709	—
Net loss	$(3,110,382)	$(1,617,070)	$1,493,312	92%

Comparison of the six months ended June 30, 2017 and 2016

	Six Months Ended June 30,			
	2017	2016	Increase (Decrease)	
License revenue	$ 9,876	$ 163,403	$ (153,527)	(94)%
Research grants and contracts	3,327,668	1,087,473	2,240,195	206
Total revenue and grants and contracts	3,337,544	1,250,876	2,086,668	167
Operating expenses				
Research and development	8,040,851	2,444,131	5,596,720	229
General and administrative	3,825,026	2,011,797	1,813,229	90
Total operating expenses	11,865,877	4,455,928	7,409,949	166
Loss from operations	(8,528,333)	(3,205,052)	5,323,281	166
Other expenses:				
Interest expense	(157,759)	(19,248)	138,511	720
Interest income	4,166	845	3,321	393
Other expenses	(947)	(6,471)	(5,524)	(85)
Total other expenses, net	(154,540)	(24,874)	129,666	521
Net loss before income tax benefit	(8,682,873)	(3,229,926)	5,452,947	169
Income tax benefit	993,709	—	993,709	—
Net loss	$ (7,689,164)	$(3,229,926)	$4,459,238	138%

Revenue and grants and contracts

Revenue and grants and contracts for the three and six months ended June 31, 2016 consisted primarily of research grants from BARDA in the United States for our anthrax vaccine product candidate. During July 2016, we signed a new contract with BARDA resulting in an increase in research grants and contracts by $1.9 million and $1.8 million during the three and six months ended June 30, 2017 as compared to the same period in 2016. Research grants and contracts for the three months ended June 30, 2017 also included $0.4 million revenue from a contract with NIAID that was acquired in the Mergers with PharmAthene.

Research and development expenses

Research and development operating expenses increased by $3.9 million, or 280%, and $5.6 million, or 229%, for the three and six months ended June 30, 2017, respectively, as compared to the same periods in 2016. The increase in research and development expenses was the combination of (i) the addition of $509,000 research and development costs for the SparVax-L asset acquired in the Mergers with PharmAthene; (ii) an increase of $1.5 million and $1.4 million in spending on the development of the NasoShield product on behalf of BARDA for the three and six months ended June 30, 2017, respectively; (iii) an increase of $964,000 and $1.7 million in HepTCell development and Phase 1 trial costs incurred during the three and six months ended June 30, 2017, respectively; and (iv) an increase of $1.0 million and $2.0 million in manufacturing and other costs in preparation for NasoVAX Phase 2 trial during the three and six months ended June 30, 2017, respectively.

General and administrative expenses

General and administrative expenses increased by $828.000, or 86%, and $1.8 million, or 90%, for the three and six months ended June 30, 2017, respectively, as compared to the same periods in 2016. The increase was the combined result of (i) the addition of $208,000 general and administrative expenses from the Mergers with PharmAthene during the three months ended June 30, 2017, and (ii) an increase in legal and professional costs, primarily as a result of the Mergers, by $716,000 and $1.6 million during the three and six months ended June 30, 2017, respectively, offset by (iii) a decrease of $96,000 and $117,000 in other costs during the three and six months ended June 30, 2017, respectively.

Other expenses, net

The increase in other expenses, net, by $77,900 and $130,000 during the three and six months ended June 30, 2017, respectively, was primarily the result of an increase in interest expense from the issuance of the Notes during the periods presented.

Income tax benefit

We recorded an income tax benefit of $994,000 during the three and six months ended June 31, 2017 which reflected an estimated tax refunds we expect to receive from carrying back our estimated 2017 NOLs to offset the 2016 federal and state income taxes paid by PharmAthene.

Liquidity and Capital Resources

Overview

Our primary sources of cash during the three and six months ended June 30, 2017 were $3.0 million net proceeds received from the issuance of the Notes, and $13.7 million cash assumed from the Mergers. Our primary source of cash during the comparable period in 2016 was $3.7 million net proceeds received from the issuance of our Series B convertible preferred stock ("preferred stock"). Our cash and cash equivalents were $8.4 million at June 30, 2017. We believe, based on the operating cash requirements and capital expenditures expected for 2017, our cash on hand at June 30, 2017, committed financing; expected tax refunds, and revenue from our government sponsored contracts, are adequate to fund operations through June 2018. The Company's ability to continue as a going concern is dependent upon our ability to raise additional debt and equity capital. There can be no assurance that such capital will be available in sufficient amounts or on terms acceptable to us. These factors raise substantial doubt about our ability to continue as a going concern. Our condensed consolidated financial statements do not include any adjustments relating to the recoverability of the recorded assets or the classification of liabilities that may be necessary should the Company be unable to continue as a going concern.

We have not generated any revenues from the sale of any products to date, and there is no assurance of any future revenues from product sales. Our sources of revenue consist of revenues under our contract with BARDA and NIAID for the development of NasalShield and SparVax-L, respectively, and to a lesser degree from other licensing arrangements. We have incurred significant losses since we commenced operations. As of June 30, 2017, we had accumulated losses of $38.9 million since our inception. In addition, we have not generated positive cash flows from operations. We have had to rely on a variety of financing sources, including the issuance of debt and equity securities. As capital resources are consumed to fund our research and development activities, we may not have sufficient capital to fund our plan of operations. In order to address our capital needs, including our planned clinical trials, we must continue to actively pursue additional equity or debt financing.

In July 2016, we signed a five-year contract with BARDA which was amended in March 2017. The contract has a total value of up to $127.5 million and is used to fund clinical development of NasoShield. Under the contract, BARDA pays us a fixed fee and reimburses certain costs for the research and development of an Ad5-vectored, protective antigen-based intranasal anthrax vaccine through GMP manufacture and conduct of a Phase 2 clinical trial dose ranging assessment of safety and immunogenicity. The contract consists of an initial base performance period providing approximately $21.6 million in funding for the period July 2016 through July 2018. BARDA has seven options to extend the contract to fund certain continued development and manufacturing activities for the anthrax vaccine, including Phase 2 clinical studies. Each option, if exercised by BARDA, would provide additional funding ranging from approximately $1.1 million to $34.4 million for the period July 2018 through July 2021. Through June 30, 2017, we have received an aggregate of approximately $695,000 under the current BARDA contract.

As part of the Mergers, we assumed a PharmAthene contract with NIAID. The NIAID contract is incrementally funded. Over the base period of the contract, PharmAthene was awarded initial funding of approximately $5.2 million, which includes a cost reimbursement component and a fixed fee component payable upon achievement of certain milestones. NIAID exercised four options under this agreement to provide additional funding of approximately $8.8 million and an extension of the period of performance through December 31, 2017. The contract had a maximum total value of up to approximately $28.1 million if all technical milestones were met and all eight contract options were exercised by NIAID. In April 2017, PharmAthene was notified by NIAID that it will exercise only one of the additional remaining options under the contract to provide funding for a rabbit challenge study. Work under all exercised options will bring total committed and final funding under the NIAID contract to $15.1 million.

Cash Flows

The following table provides information regarding our cash flows for the six months ended June 30, 2017 and 2016:

	Six Months Ended June 30, 2017	2016
Net cash provided by (used in):		
Operating activities	$(11,149,228)	$(2,966,800)
Investing activities	$ 13,770,011	$ (59,898)
Financing activities	$ 2,853,499	$ 3,614,716

Operating Activities

Net cash used in operating activities was $11.1 million for the six months ended June 30, 2017 compared to $3.0 million during the three months ended March 31, 2016.

Net cash used in operating activities of $11.1 million during the six months ended June 30, 2017 included our net loss of $7.7 million, adjusted for $684,000 stock-based compensation expense; $98,000 accretion of debt discount and deferred financing costs; $2.1 million increase in accounts receivable; $1.6 million decrease in accounts payable; $588,000 increase in prepaid expenses and other current assets; $717,000 increase in accrued expenses and other current liabilities; $725,000 increase in tax refund receivable; and $46,000 from net changes in other balances.

Net cash used in operating activities during the six months ended June 30, 2016 included our net loss of $3.2 million, adjusted for stock-based compensation expense of $390,000; a $206,000 decrease in accounts receivable; a $440,000 decrease in accrued expenses and other current liabilities; and $419,000 from net changes in other balances.

Investing Activities

During the six months ended June 30, 2017, net cash provided by investing activities of $13.7 million was primarily the result of cash assumed from the Mergers with PharmAthene that closed in May 2017.

Financing Activities

Net cash provided by financing activities during the six months ended June 30, 2017 was primarily the result of $3.0 million net proceeds received from the private placement of convertible note financing that closed in May 2017, offset by repayment of notes payable for $212,000.

Net cash provided by financing activities during the six months ended June 30, 2016 was primarily the result of $3.3 million proceeds received from the issuance of Series B preferred stock, net of issuance costs, in April 2016, and $260,000 received in advance of the August 2016 Series B preferred stock financing.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

Item 3. Quantitative and Qualitative Disclosures about Market Risk.

The market risk inherent in our financial instruments and in our financial position represents the potential loss arising from adverse changes in interest rates. As of June 30, 2017, we had cash and cash equivalents of $8.4 million. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates. Because most of our cash is held in bank deposit accounts without restriction, an immediate 100 basis point change in interest rates would not have a material effect on our financial position or the results of our operations. We are subject to interest rate risk from our outstanding notes and borrowings under our credit facility. Borrowings under our credit facility bear interest at an annual rate equal to the bank's prime rate (4.75% at June 30, 2017) plus 2%.

In addition, we are subject to currency risk for cash held in British pounds and Euros in our UK and French subsidiaries. Fluctuations in the exchange rates for the British pound since January 2016 have been about 23% comparing the high and low during the period. Transactions of our UK subsidiary predominantly settled in British pounds and transactions of our French subsidiary settled predominantly in Euros; therefore, we believe that we have minimal exposure to foreign currency exchange risks. We do not hedge against foreign currency risks.

We do not believe that inflation and changing prices had a significant impact on our results of operations for any periods presented herein.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and principal financial officer, evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15 under the Securities Exchange Act of 1934, as of the end of the period covered by this Quarterly Report on Form 10-Q.

Based on this evaluation, our principal executive officer and principal financial officer concluded that, as of June 30, 2017, our disclosure controls and procedures were effective to provide reasonable assurance that information we are required to disclose in reports that 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 principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

Our management, including our principal executive and principal financial officers, has evaluated any changes in our internal control over financial reporting that occurred during the three and six months ended June 30, 2017, and has concluded that there was no change that occurred during the three and six months ended June 30, 2017 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting, except as follows:

On May 4, 2017, we completed the Mergers with PharmAthene described in Items 1 and 2 above.

PART II — OTHER INFORMATION

Item 1. Legal Proceedings

None.

Item 1A. Risk Factors

We encourage you to carefully consider the risk factors identified in the "Risk Factors" section of our Form S-4/A filed with the Security and Exchange Commission on March 31, 2017, and our Form 10-K for the year ended December 31, 2016. These risk factors could materially affect our business, financial condition, and future results and could cause our actual business and financial results to differ materially from those contained in forward-looking statements made in this Quarterly Report on Form 10-Q or elsewhere by management from time to time. Except for the information presented below, which updates, and should be read in conjunction with, the risk factors and information disclosed in our Form S-4/A and Form 10-K, there have been no material changes during the six months ended June 30, 2017 to the risk factors disclosed in our Form S/A filed with the Security and Exchange Commission on March 31, 2017, and our Annual Report on Form 10-K for the year ended December 31, 2016.

Future conditions might require us to make substantial write-downs in our assets, which would adversely affect our balance sheet and results of operations.

We review our long-lived tangible and intangible assets for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. We also test our goodwill and indefinite-lived intangible assets for impairment at least annually in the fourth quarter, or when events or changes in the business environment indicate that the carrying value of the reporting unit may exceed its fair value. As of June 30, 2017, as a result of our declining share price, we tested our goodwill and indefinite-lived intangible assets for impairment. Based on the result of the test, we have determined that no asset write-downs were required as of June 30, 2017. However, if our stock price continues to remain low or decline, we may determine that certain of our assets, including goodwill, were impaired and we may be required to write-down the carrying value for such assets. Any such significant write-downs could adversely affect our balance sheet and results of operations.

Our acquisitions may expose us to unknown liabilities.

Because we have acquired all the outstanding shares of most of our acquired companies, our investment in those companies are or will be subject to all of their liabilities other than their respective debts which we paid or will pay at the time of the acquisitions. If there are unknown liabilities or other obligations, our business could be materially affected. We may also experience issues relating to internal control over financial reporting, issues that could affect our ability to comply with the Sarbanes-Oxley Act, or issues that could affect our ability to comply with other applicable laws.

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

None.

Item 3. Default upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

No.	Description
3.1*	Certificate of Amendment (Reverse Stock Split) to the Restated Certificate of Incorporation of the Company, dated May 4, 2017 (incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed on May 8, 2017)
3.2*	Certificate of Amendment (Name Change) to the Restated Certificate of Incorporation of the Company, dated May 4, 2017 (incorporated by reference to Exhibit 3.2 to the Company's Form 8-K filed on May 8, 2017)
3.3*	Amended and Restated Bylaws of Altimmune, Inc. (incorporated by reference to Exhibit 3.3 to the Company's Form 8-K filed on May 8, 2017)
10.1*†	Altimmune, Inc. 2017 Omnibus Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed on May 8, 2017)
10.2*†	Form of Incentive Stock Option Agreement under the Altimmune, Inc. 2017 Omnibus Incentive Plan (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K filed on May 8, 2017)
10.3*†	Form of Non-Qualified Stock Option Agreement under the Altimmune, Inc. 2017 Omnibus Incentive Plan (incorporated by reference to Exhibit 10.3 to the Company's Form 8-K filed on May 8, 2017)
10.4*†	Altimmune, Inc. 2001 Employee Stock Option Plan (incorporated by reference to Exhibit 99.1 filed with the Company's Form S-8 filed on May 10, 2017)
10.5*†	Altimmune, Inc. 2001 Non-Employee Stock Option Plan (incorporated by reference to Exhibit 99.2 filed with the Company's Form S-8 filed on May 10, 2017)
10.6§	Contract Award issued by Biomedical Advanced Research and Development Authority of the United States Department of Health and Human Services, dated July 27, 2016.
10.7§	Amendment No. 1 to Contract Award issued by Biomedical Advanced Research and Development Authority of the United States Department of Health and Human Services, dated March 27, 2017.
10.8§	Amended and Restated Exclusive License Agreement, dated as of June 2, 2014, between the UAB Research Foundation and Vaxin Inc.
10.9	First Amendment to Amended and Restated Exclusive License Agreement, effective as of October 16, 2015, between UAB Research Foundation and Altimmune, Inc. (f/k/a Vaxin Inc.)
10.10§	Second Restated License Agreement, effective as of October 4, 2005, between Crucell Holland B.V. and Vaxin Inc.
10.11§	Amendment No. 1 to Second Restated License Agreement, effective as of September 25, 2015, between Crucell Holland B.V. and Altimmune, Inc.
10.12	Form of Director and Officer Indemnification Agreement
10.13†	Amended and Restated Employment Agreement, dated December 7, 2015, between William J. Enright and Altimmune, Inc.
10.14†	Amendment No. 1 to Amended and Restated Employment Agreement, dated January 18, 2017, between William J. Enright and Altimmune, Inc.
10.15†	Employment Agreement, dated December 7, 2015, between Elizabeth Czerepak and Altimmune, Inc.
10.16†	Amendment No. 1 to Employment Agreement, dated January 18, 2017, between Elizabeth Czerepak and Altimmune, Inc.

10.17†	Employment Agreement, dated December 7, 2015, between M. Scot Roberts and Altimmune, Inc.
10.18†	Employment Agreement, dated April 4, 2016, between Sybil Tasker and Altimmune, Inc.
10.19	Convertible Promissory Note Purchase Agreement, dated January 18, 2017, by and between Altimmune, Inc. and the purchasers listed therein
31.1	Certification of Principal Executive Officer Pursuant to SEC Rule 13a-14(a)/15d-14(a)
31.2	Certification of Principal Financial Officer Pursuant to SEC Rule 13a-14(a)/15d-14(a)
32.1	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350
32.2	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350
(101)	The following unaudited condensed consolidated financial statements from the Altimmune, Inc. Quarterly Report on Form 10-Q for the three and six months ended June 30, 2017, formatted in Extensive Business Reporting Language ("XBRL"): (i) Unaudited Condensed Consolidated Balance Sheets as of June 30, 2017 and December 31, 2016, (ii) Unaudited Condensed Consolidated Statements of Operations and Comprehensive Loss for the three and six months ended June 30, 2017 and 2016, (iii) Unaudited Condensed Consolidated Statements of Stockholder's Equity for the six months ended June 30, 2017, (iv) Unaudited Condensed Consolidated Statements of Cash Flows for the six months ended June 30, 2017 and 2016, and (v) Notes to Unaudited Condensed Consolidated Financial Statements.
101.INS	Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

* Incorporated by reference.
† Indicates a management contract or compensatory plan.
§ Indicates confidential treatment requested.

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SIGNATURES

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

ALTIMMUNE, INC.

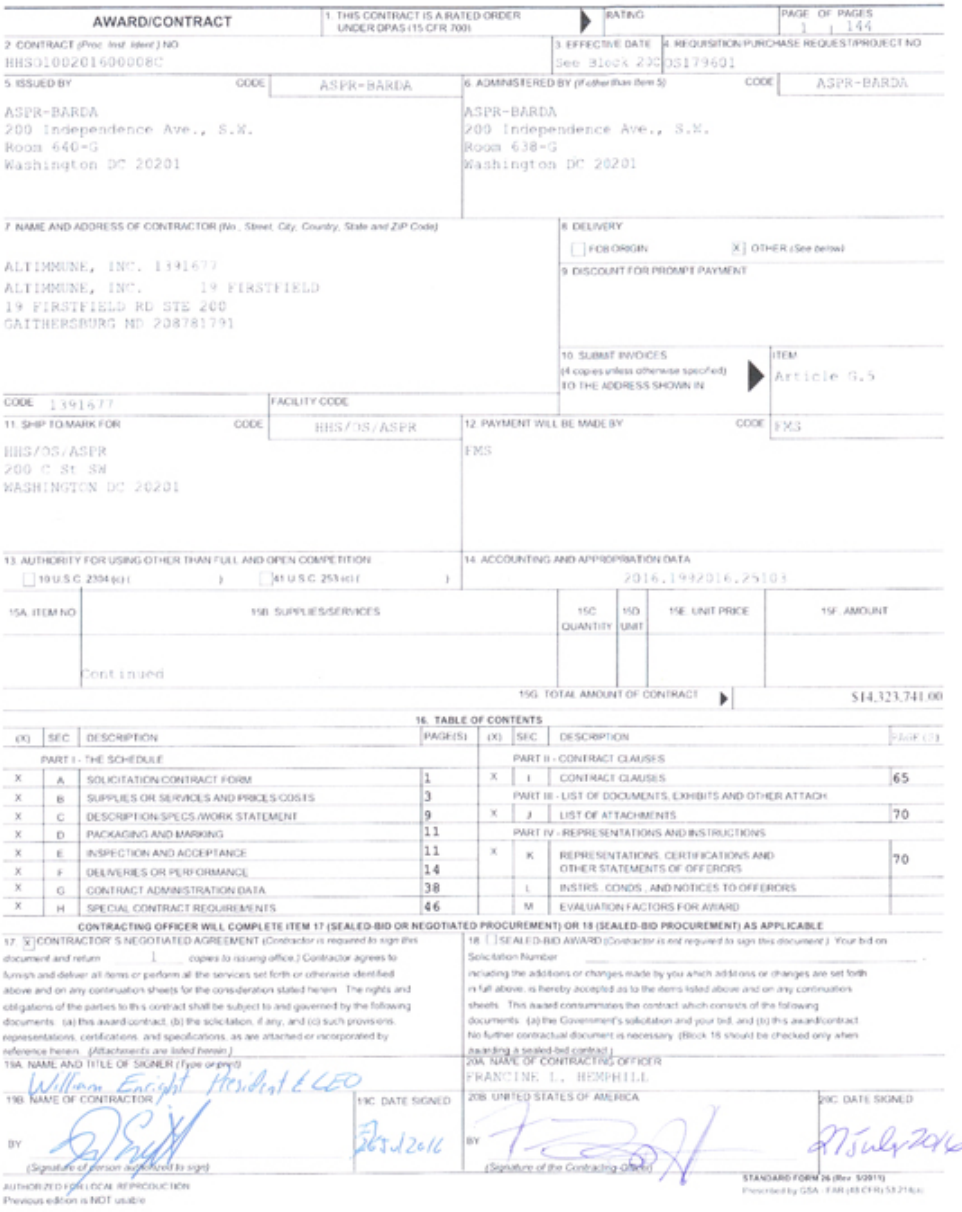
Dated: August 11, 2017

By: /s/ William Enright
Name: William Enright
Title: President and Chief Executive Officer (principal executive officer)

Dated: August 11, 2017

By: /s/ Elizabeth A. Czerepak
Name: Elizabeth A. Czerepak
Title: Chief Financial Officer and Executive Vice President of Corporate Development (principal financial and accounting officer)

Confidential Treatment Requested — Certain Portions of this Exhibit, Marked as [***], Have Been Omitted Pursuant to a Pending Request for Confidential Treatment and Have Been Filed Separately with the Securities and Exchange Commission



AWARD/CONTRACT

1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700) — RATING — PAGE 1 OF 144 PAGES

2. CONTRACT (Proc. Inst. Ident.) NO: HHSO100201600008C

3. EFFECTIVE DATE: See Block 23C

4. REQUISITION/PURCHASE REQUEST/PROJECT NO: OS179601

5. ISSUED BY — CODE: ASPR-BARDA

ASPR-BARDA
200 Independence Ave., S.W.
Room 640-G
Washington DC 20201

6. ADMINISTERED BY (If other than Item 5) — CODE: ASPR-BARDA

ASPR-BARDA
200 Independence Ave., S.W.
Room 638-G
Washington DC 20201

7. NAME AND ADDRESS OF CONTRACTOR (No., Street, City, Country, State and ZIP Code)

ALTIMMUNE, INC. 1391677
ALTIMMUNE, INC. 19 FIRSTFIELD
19 FIRSTFIELD RD STE 200
GAITHERSBURG MD 208781791

8. DELIVERY
[ ] FOB ORIGIN [X] OTHER (See below)

9. DISCOUNT FOR PROMPT PAYMENT

10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN IN: ITEM: Article G.5

CODE 1391677 — FACILITY CODE

11. SHIP TO/MARK FOR — CODE: HHS/OS/ASPR

HHS/OS/ASPR
200 C St SW
WASHINGTON DC 20201

12. PAYMENT WILL BE MADE BY — CODE: FMS

FMS

13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION
[ ] 10 U.S.C. 2304(c)( ) [ ] 41 U.S.C. 253(c)( )

14. ACCOUNTING AND APPROPRIATION DATA: 2016.1982016.25103

15A. ITEM NO	15B. SUPPLIES/SERVICES	15C. QUANTITY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
	Continued				

15G. TOTAL AMOUNT OF CONTRACT: $14,323,741.00

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(X)	SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
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X	B	SUPPLIES OR SERVICES AND PRICES/COSTS	3			PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH	
X	C	DESCRIPTION/SPECS./WORK STATEMENT	9	X	J	LIST OF ATTACHMENTS	70
X	D	PACKAGING AND MARKING	11			PART IV - REPRESENTATIONS AND INSTRUCTIONS	
X	E	INSPECTION AND ACCEPTANCE	11	X	K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	70
X	F	DELIVERIES OR PERFORMANCE	14		L	INSTRS., CONDS., AND NOTICES TO OFFERORS	
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CONTRACTING OFFICER WILL COMPLETE ITEM 17 (SEALED-BID OR NEGOTIATED PROCUREMENT) OR 18 (SEALED-BID PROCUREMENT) AS APPLICABLE

17. [X] CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 1 copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)

18. [ ] SEALED-BID AWARD (Contractor is not required to sign this document.) Your bid on Solicitation Number _____ including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your bid, and (b) this award/contract. No further contractual document is necessary. (Block 18 should be checked only when awarding a sealed-bid contract.)

19A. NAME AND TITLE OF SIGNER (Type or print): William Enright President & CEO

20A. NAME OF CONTRACTING OFFICER: FRANCINE L. HEMPHILL

19B. NAME OF CONTRACTOR — 19C. DATE SIGNED: 7/5/2016

BY (Signature of person authorized to sign)

20B. UNITED STATES OF AMERICA — 20C. DATE SIGNED: 7/5/2016

BY (Signature of the Contracting Officer)

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Previous edition is NOT usable

STANDARD FORM 26 (Rev. 5/2011)
Prescribed by GSA - FAR (48 CFR) 53.214(a)

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED HHSO100201600008C	PAGE 2	OF 144

NAME OF OFFEROR OR CONTRACTOR

ALTIMMUNE, INC. 1391677

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Tax ID Number: 63-1190888 DUNS Number: 032198363 Delivery: 07/31/2018 Appr. Yr.: 2016 CAN: 1992016 Object Class: 25103 FOB: Destination Period of Performance: 07/27/2016 to 07/31/2018				
1	ASPR-16-05121 -- Base period fund to Altimmune Inc to support the clinical development of AdVaV Obligated Amount: $14,323,741.00				14,323,741.00

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SECTION J - LIST OF ATTACHMENTS	**70**
PART IV – REPRESENTATIONS AND INSTRUCTIONS	**70**
SECTION K– REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF OFFERORS	**70**

PART I – THE SCHEDULE

SECTION B – SUPPLIES OR SERVICES AND PRICES/COSTS

ARTICLE B.1. BRIEF DESCRIPTION OF SUPPLIES OR SERVICES

The Research and Development (R&D) effort is for the development of an Ad5-vectored protective antigen (PA)-based intranasal anthrax vaccine candidate through the GMP manufacture and conduct of a Phase 1 clinical trial dose ranging assessment of safety and immunogenicity (CLIN 0001). Work performed during the base segment and during each option segment constitutes an independent, non-severable discrete work segment that cannot be subdivided for separate performance and is necessary to support R&D tasks related to the anthrax vaccine candidate. The R&D effort may progress into further work (CLINs 0002 through 0008) that could include a dose-selection Phase 1b study; scale-up in manufacturing; non-clinical studies; Phase 2 studies for immunogenicity, effectiveness, and interactions with antibiotics; regulatory efforts, and formulation development to improve stability. These efforts would be supported by a number of options included in the contract. The contractor must complete specific tasks required in discrete work segments before the Government will exercise follow-on option segments. Exercise of any option is at the sole discretion of the government. The contractors success in completing the required tasks under each work segment must be demonstrated through the Deliverables and Milestones specified under Article F.2.

The Government has determined a *Bona Fide Need* for each non-severable discrete work segment which will conclude upon the completion of a defined task(s) that provides independent merit and value to the Government. The Contractor's success in completing the required tasks under each work segment must be demonstrated through the Deliverables and Milestones specified under Article F of this contract. Those deliverables will support the GO/NO GO Contract Milestones and Decision Gates specified therein. As set forth in the Contract WBS Milestones/Deliverables and Technical Deliverables chart under Article F of this contract, the GO/NO GO Contract Milestones and Decision Gates will constitute the basis for the Government's decision, at its sole discretion, to exercise any follow-on option segment(s).

Work under this contract will proceed for a maximum of 5 years. The base and options under the Contract Line Items (CLINs) are event driven work segments rather than time driven work segments. The periods of performance listed under each of the CLINs under Article B.2 and B.3 are estimated time periods. It is possible that more than one option segment (requirement), may be awarded at one time and that individual CLINs may overlap and/or proceed concurrently. However, if exercised, the completion of the final tasks required under the base segment and option segments must be completed no later than 5 years after the initial award of this contract.

ARTICLE B.2. ESTIMATED COST AND FIXED FEE

a. The total estimated cost of ***the base performance segment*** **(CLIN 0001)** is **$[***]**.

b. The total fixed fee ***of the base performance segment*** is **$[***]**. The fixed fee shall be paid subject ot the Allowable Cost and Payment and Fixed Fee Clauses.

c. The total amount of ***the base performance segment***, CLIN 0001, represented by the sum of the total estimated cost plus fixed fee is **$[***]**. The total amount for ***the base performance segment shall not exceed*** **$[***]**. The total amount obligated by the Government for the base segment of the contract shall not exceed

$[***] and the Government will not be responsible for any Contractor incurred costs that exceed this amount unless a modification to the contract is signed by the Contracting Officer which expressly increases this amount.

d. It is estimated that the amount current allotted will cover performance of the contract through **31 July 2018**.

CLIN	Estimated Period of Performance	Supplies/Services	Estimated Cost	Estimated Fixed Fee	Total Estimated Cost Plus Fixed Fee
0001	July 27 2016 – July 31 2018	Perform activities to support the conduct of a Phase 1a clinical study and demonstrate safety and immunogenicity in accordance with Article C.1 Statement of Work Study reports, development reports, IND	$[***]	$[***]	$[***]

ARTICLE B. 3. OPTION PRICES

a. Unless the government exercises its option pursuant to the option clause contained in ARTICLE I.2, the contract consists only of the Base Work segments (CLIN 0001)specified in the Statement of Work as defined in SECTONS C and F, for the price set forth in ARTICLE B.2 of the contract.

b. Pursuant to FAR Clause 52.217-9 (Option to Extend the Term of the Contract), the Government may, by unilateral contract modification, require the Contractor to perform the Option Work Segments specified in the Statement of Work as defined in SECTIONS C and F of this contract. If the Government decides to exercise an option(s), the Government will provide the Contractor a preliminary written notice of its intent to exercise the option at least 30 days before the contract expires. Specific information regarding the time frame for this notice is set forth in the OPTION CLAUSE Article in SECTION G of this contract. The estimated cost of the contract will be increased as set forth below:

OPTIONS

Option 1 (CLIN 0002)
Option 2 (CLIN 0003)
Option 3 (CLIN 0004)
Option 4 (CLIN 0005)
Option 5 (CLIN 0006)
Option 6 (CLIN 0007)
Option 7 (CLIN 0008)

CLIN	Estimated Period of Performance	Supplies/Services	Estimated USG Cost	Estimated Fixed Fee	Total Estimated Cost Plus Fixed Fee
0002	July 27 2018 – July 31 2021	Qualify and/or validate key assays, Regulatory communications, program management and reporting in accordance with Article C.1 Statement of Work Qualification/validation reports, Regulatory communication log, program reports and plans	$[***]	$[***]	$[***]
0003	July 27 2018 – July 31 2021	Transfer to commercial manufacturer, scale-up to intended commercial scale, manufacture CTM, WVB and WCB in accordance with Article C.1 Statement of Work Study reports, batch records	$[***]	$[***]	$[***]
0004	July 27 2018 – July 31 2021	Formulation development/lyophilization in accordance with Article C.1 Statement of Work Development and stability reports	$[***]	$[***]	$[***]
0005	July 27 2018 – July 31 2021	Conduct animal studies in support of Animal Rule licensure in accordance with Article C.1 Statement of Work Study reports	$[***]	$[***]	$[***]
0006	July 27 2018 – July 31 2021	Conduct a Phase 1b clinical study to establish a safe and immunogenic vaccine dose accordance with Article C.1 Statement of Work Clinical Study Report	$[***]	$[***]	$[***]
0007	July 27 2018 – July 31 2021	Conduct a Phase 2 clinical study to establish a safe and immunogenic vaccine dose accordance with Article C.1 Statement of Work Clinical Study Report	$[***]	$[***]	$[***]

****** Confidential treatment requested***

CLIN	Estimated Period of Performance	Supplies/Services	Estimated USG Cost	Estimated Fixed Fee	Total Estimated Cost Plus Fixed Fee
0008	July 27 2018 – July 31 2021	Conduct a Phase 2 clinical study with the vaccine + antibiotic in accordance with Article C.1 Statement of Work Clinical Study Report	$[***]	$[***]	$[***]
		Total Potential Value **(assuming all options are exercised):**			**$[***]**

ARTICLE B. 4. LIMITATIONS APPLICABLE TO DIRECT COSTS

a. Items Unallowable Unless Otherwise Provided

Notwithstanding the clauses and unless authorized in writing by the Contracting Officer, the cost of the following items or activities shall be unallowable as direct costs:

1) Acquisition, by purchase or lease, of any interest in real property;

2) Special rearrangement or alteration of facilities;

3) Accountable Government Property (*see* the HHS Contracting Guide for Control for Government Property incorporated by ARTICLE G.10. of this contract);

Note: this includes the lease or purchase of any item of general purpose office furniture or office equipment regardless of dollar value.

4) Purchase or lease scientific instruments or equipment over $1,500;

5) Travel to attend general scientific meetings/conferences;

6) Printing Costs (as defined in the Government Printing and Binding Regulations);

7) Overtime (premium) compensation

8) Entering into certain types subcontract of arrangements (See Article B.5(c) for specific obligations). Note that most consulting agreements require CO's written consent.

9) Foreign Travel (see Subparagraph b.3);

10) Patient care costs (see Attachment 6);

11) Light Refreshment and Meal Expenditures - Requests to use contract funds to provide light refreshments and/or meals to either federal or nonfederal employees must be submitted to the Contracting Officer's Representative (COR), with a copy to the Contracting Officer, at least six (6) weeks in advance of the event and are subject to "HHS Policy on Promoting Efficient Spending: Use of Appropriate Funding for Conferences and Meetings, Food and Promotional Items and Printing and

Publications." The request shall contain the following information: (a) name, date, and location of the event at which the light refreshments and/or meals will be provide; (b) a brief description of the purpose of the event; (c) a cost breakdown of the estimated light refreshments and/or meals costs; (d) the number of nonfederal and federal attendees receiving light refreshments and/or meals; and (e) if the event will be held at a government facility.

b. Travel Costs

1. Total expenditures for travel (transportation, lodging, subsistence, and incidental expenses) incurred in direct performance of this contract during the base segment (CLINs 0001) shall not exceed **$[***]** without the prior written approval of the Contracting Officer. The Contractor shall notify the Contracting Officer in writing when travel expenditures have exceeded [***]% (**$[***]**) of the base segment travel expenses. Cost must be consistent with Federal Acquisition Regulations (FAR) 52.247- 63 – Preference for U.S. Air Flag carriers.

2. Subject to the annual dollar limitation specified under B.4.b.1. above, the Contactor shall invoice and be reimbursed for all travel costs in accordance with Federal Acquisition Regulation (FAR) 31.2 – Contracts with Commercial Organizations, Subsection 31.205- 46, Travel Costs.

3. If foreign travel is necessary, a Contracting Officer Authorization (COA) will be required. Expenditures for foreign travel (transportation, lodging, subsistence, and incidental expenses) incurred in direct performance of this contract shall not exceed the amount specified in each approved COA, without the prior written approval of the Contracting Officer.

   Requests for foreign travel must be submitted at least four weeks in advance and shall contain the following:

   (a) meeting(s) and place(s) to be visited, with costs and dates;

   (b) name(s) and title(s) of Contractor personnel to travel and their functions in the contract project;

   (c) contract purposes to be served by the travel;

   (d) how travel of Contractor personnel will benefit and contribute to accomplishing the contract project, or will otherwise justify the expenditure of ASPR contract funds;

   (e) how such advantages justify the costs for travel and absence from the project of more than one person if such are suggested; and

   (f) what additional functions may be performed by the travelers to accomplish other purposes of the contract and thus further benefit the project.

ARTICLE B.5. ADVANCE UNDERSTANDINGS

a. **Man-in-Plant**

With seven (7) days advance notice to the Contractor in writing from the Contracting Officer, the Government may place a man-in-plant in the Contractor's facility, who shall be subject to the Contractor's policies and procedures regarding security and facility access at all times while in the Contractor's facility. As determined by federal law, no Government representative shall publish, divulge, disclose, or make known in any manner, or to any extent not authorized by law, any information coming to him in the course of employment or official duties, while stationed in a contractor plant.

b. **Security**

No Security Plan is required at this point for this effort. It is anticipated that a security waiver will be approved.

c. **Subcontracts**

Prior written consent from the Contracting Officer in the form of Contracting Officer Authorization (COA) is required for any subcontract that:

- Is of the cost-reimbursement type; or
- Is Fixed-Price and exceeds $[***] or [***]% of the total estimated cost of the Contract, whichever value is greater.

The Contracting Officer shall request appropriate supporting documentation in order to review and determine authorization, pursuant with FAR Clause 52.244-2, Subcontracts. After receiving written consent of the subcontract by the Contracting Officer, the Contractor shall provide a copy of the signed, executed subcontract and consulting agreement to the Contracting Officer.

Note: Consulting services are treated as subcontracts and subject to the 'consent to subcontract' provisions set forth in this Article.

d. **Confidential Treatment of Sensitive Information**

The Contractor shall guarantee strict confidentiality of any information/data of a sensitive nature that is provided to the Contractor by the Government during the performance of the contract. The Government has determined that the information/data that the Contractor will be provided during the performance of the contract is of a sensitive nature.

Disclosure of information/data that is sensitive in nature, in whole or in part, by the Contractor can only be made after the Contractor receives prior written approval from the Contracting Officer. Whenever the Contractor is uncertain with regard to the proper handling of information/data under the contract, the Contractor shall obtain a written determination from the Contracting Officer (see also HHSAR clause 352.224-70).

Notwithstanding the foregoing, such information/data shall not be deemed of a sensitive nature with respect to the Contractor for purposes of this contract if such information/data: (a) was already known to the Contractor at or prior to the time of its disclosure to the Contractor; (b) was generally available or known, or was otherwise part of the public domain, at the time of its disclosure to the Contractor; (c) became generally available or known, or otherwise became part of the public domain, after its disclosure to, or, with respect to the information/data by, the Contractor through no fault of the Contractor; (d) was disclosed to the Contractor, other than under an obligation of confidentiality or non-use, by a third party who had no obligation to the Government that controls such information/data not to disclose such information/data to others; or (e) was independently discovered or developed by the Contractor, as evidenced by its written records, without the use of information/data belonging to the Government.

Contractor may disclose information/data of a sensitive nature provided by the Government to the extent that such disclosure is: (a) made in response to a valid order of a court of competent jurisdiction or other supra-national, federal, national, regional, state, provincial or local governmental or regulatory body of competent jurisdiction; provided, however, that the Contractor shall first have given notice to the Government and give the Government a reasonable opportunity to quash such order and to obtain a protective order requiring that the information/data of a sensitive nature that is the subject of such order be held in confidence by such court or agency or, if disclosed, be used only for the purposes for which the order was issued; and provided further that if a disclosure order is not quashed or a protective order is not obtained, the information/data disclosed in response to such court or governmental order shall be limited to that information which is legally required to be disclosed in response to such court or governmental order; (b) otherwise required by law, in the opinion of legal counsel to the Contractor as expressed in an opinion letter in form and substance reasonably satisfactory to the Government, which shall be provided to the Government at least two (2) business days prior to the Contractor's disclosure of the information/data; or (c) made by the Contractor to the regulatory authorities as required in connection with any filing, application or request for regulatory approval; provided, however, that reasonable measures shall be taken to assure confidential treatment of such information/data.

e. **Sharing of contract deliverables within United States Government (USG)**

In an effort to build a robust medical countermeasure pipeline through increased collaboration, BARDA may share technical deliverables set forth in Article F.2 with Government entities responsible for Medical Countermeasure Development. In accordance with recommendations from the Public Health Emergency Medical Countermeasure Enterprise Review, agreements established in the Integrated Portfolio's Portfolio Advisory Committee (PAC) Charter, Technology Transfer Agreements (TTA) between BARDA and the Defense Threat Reduction Agency and the National Institute of Allergies and Infectious Diseases (NIAID), BARDA may share technical deliverables set forth in Article F.2 with colleagues within the Integrated Portfolio. This provision applies to all deliverables and data developed during performance including deliverables and data paid for by the Contractor under the cost sharing arrangement all exercised CLINs herein. This advance understanding does not authorize BARDA to share financial information outside HHS. The Contractor is advised to review the terms of FAR Clause 52.227-14 regarding the Government's rights to deliverables submitted during performance as well as the Government's rights to data contained within those deliverables.

f. **Overtime Compensation**

No overtime (premium) compensation is authorized under the subject contract.

g. **Use of CIADM-TAMUS**

The tech transfer, scale-up, process development and GMP manufacturing will be done at Fujifilm Diosynth Biotechnologies (FDBT) as a subcontractor to CIADM-TAMUS under Task Order HHSO10033001T, Contract HHSO1002012000021.

SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

ARTICLE C.1. STATEMENT OF WORK

Independently and not as an agent of the Government, the Contractor shall furnish all the necessary services, qualified personnel, material, equipment, and facilities not otherwise

provided by the Government as needed to perform the Statement of Work attached to this contract as Attachment 1 (SECTION J-List of Attachments).

ARTICLE C.2. REPORTING REQUIREMENTS

Refer to ARTICLE F.2. for specific instructions regarding Reporting Requirements.

ARTICLE C.3. EARNED VALUE MANAGEMENT SYSTEM (EVMS) IMPLEMENTATION REQUIREMENTS

The Contractor and the Government agree that the EVMS implementation requirements that are contained in this contract are limited to the implementation requirements outlined by the 7 Principles of Earned Value Management Tier 2 System Implementation Intent Guide contained as Attachment 9 (see SECTION J-List of Attachments) to the contract. The total amount of this contract reflects the use of the 7 Principles of EVMS Implementation. Any EVMS implementation requirements that are beyond the intent of the 7 Principles of EVMS Implementation shall not proceed until the Contracting Officer sends a written request for a proposal to the Contractor and a bilateral modification is issued to the contract for the purposes of incorporating the additional costs for the performance of these requirements into the contract.

Refer to ARTICLE F.2. for specifics on EVMS deliverables.

ARTICLE C.4. PROJECT MEETING CONFERENCE CALLS

A teleconference call between the Contracting Officer's Representative and the Contractor's Program Manager shall occur bi-weekly (every two weeks), or at the discretion of the Government. During this call, the Program Manager will discuss the activities during the reporting period, any problems that have arisen, and the activities planned for the ensuing reporting period. The Contractor's Program Manager may choose to include other key personnel on the conference call to give detailed updates on specific projects or this may be requested by the Contracting Officer's Representative.

Contractor will be responsible for preparing an agenda for the conference call and providing it to the Government no later than 2 business days prior to the scheduled conference call.

ARTICLE C.5. PROJECT MEETINGS

The Contractor shall participate in Project Meetings to coordinate the performance of the contract, as requested by the Contracting Officer's Technical Representative. These meetings may include face-to-face meetings with BARDA/AMCG in Washington, D.C. and at work sites of the Contractor and its subcontractors. Such meetings may include, but are not limited to, meetings of the Contractor (and subcontractors invited by the Contractor) to discuss study designs, site visits to the Contractor's and subcontractor's facilities, and meetings with the Contractor and HHS officials to discuss the technical, regulatory, and ethical aspects of the program. The Contractor must provide data, reports, and presentations to groups of outside experts (subject to appropriate protections for Contractor confidential or proprietary data) and USG personnel as required by the Contracting Officer's Technical Representative in order to facilitate review of contract activities.

a. Kickoff Meeting

The Contractor shall complete a Kickoff meeting within 30 days after contract award. Contractor shall provide an itinerary/agenda no later than 5 business days before meeting.

b. Quarterly and Ad-Hoc Meetings

At the discretion of BARDA, the Contractor shall participate in Project Meetings to coordinate the performance of the contract, as requested by the Contracting Officer's Representative. These meetings may include teleconferences or face-to-face meetings with BARDA/AMCG in Washington, D.C. or at work sites of the Contractor and its subcontractors. Such meetings may include, but are not limited to, meetings of the Contractor (and subcontractors invited by the Contractor) to discuss study designs, site visits to the Contractor's and subcontractor's facilities, and meetings with the Contractor and HHS officials to discuss the technical, regulatory, and ethical aspects of the program. The Contractor must provide data, reports, and presentations to groups of outside experts (subject to appropriate protections for Contractor's confidential or proprietary data) and Government personnel as required by the Contracting Officer's Representative, giving reasonable prior notice of such requirement to Contractor, in order to facilitate review of contract activities.

Contractor shall provide itinerary/agenda at least 5 business days in advance of face-to-face meeting.

c. Face-to-Face Project Review Meetings

The Contractor shall, at a time to be determined later, present a comprehensive review of contract progress to date in a face-to-face meeting in Washington, DC. The Contractor will be responsible for updating BARDA program on technical progress under the Statement of Work. Presentation must be delivered seven (7) business days prior to the scheduled meeting.

SECTION D – PACKAGING, MARKING, AND SHIPPING

All deliverables required under this contract shall be packaged, marked and shipped in accordance with Section F. At a minimum, all deliverables shall be marked with the contract number and Contractor name. The Contractor shall guarantee that all required materials shall be delivered in immediate usable and acceptable condition

Unless otherwise specified by the Contracting Officer, delivery of reports to be furnished to the USG under this contract (including invoices) shall be delivered to AMCG and BARDA electronically along with a concurrent email notification to the Contracting Officer, Contract Specialist, and COR (as defined in SECTION F.3. ELECTRONIC SUBMISSION) summarizing the electronic delivery.

SECTION E – INSPECTION AND ACCEPTANCE

ARTICLE E.1. FAR 52.252-2, CLAUSES INCORPORATED BY REFERENCE (FEBRUARY 1998)

This contract incorporates the following clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at these addresses: http://farsite.hill.af.mil . HHSAR Clauses at: http://www.hhs.gov/grants/contracts/contract-policies-regulations/hhsar/tocindetail/index.html

FAR Clause	Title and Date
52.246-9	Inspection of Research and Development (Short Form) (Apr 1984)

ARTICLE E.2. DESIGNATION OF GOVERNMENT PERSONNEL

For the purpose of this SECTION E, the designated Contracting Officer's Representative (COR) is the authorized representative of the Contracting Officer. The COR will assist in resolving technical issues that arise during performance. The COR however is not authorized to change any contract terms or authorize any changes in the Statement of Work or modify or extend the period of performance, or authorize reimbursement of any costs incurred during performance.

ARTICLE E.3. INSPECTION, ACCEPTANCE AND CONTRACT MONITORING

Inspection and acceptance of the materials services and documentation called for herein shall be accomplished by the Contracting Officer or a duly authorized representative.

Inspection and acceptance will be performed at:

Office of Acquisition Management, Contracts, and Grants (AMCG) Office of the Assistant Secretary for Preparedness and Response

U.S. Department of Health and Human Services 330 Independence Avenue, S.W., Room G644 Washington, D.C. 20201

a. **Site Visits and Inspections**

At the discretion of the USG and independent of activities conducted by the Contractor, with 48 hours' notice to the contractor, the USG reserves the right to conduct site visits and inspections on an as needed basis, including collection of product samples and intermediates held at the location of the contractor, or subcontractor. All costs reasonably incurred by the Contractor and subcontractor for such visit and/or inspection shall be allowable costs subject to the Allowable cost requirements in FAR Subpart 31.2. The Contractor shall coordinate these visits and shall have the opportunity to accompany the USG on any such visits. Under time-sensitive or critical situations, the USG reserves the right to suspend the 48 hour notice to the Contractor. The areas included under the site visit could include, but are not limited to: security, regulatory and quality systems, manufacturing processes and cGMP/GLP/GCP compliance.

If the USG, Contractor, or other party identifies any issues during an audit, the Contractor shall capture the issues, identify potential solutions, and provide a report to the USG for review and acceptance.

- If issues are identified during the audit, the Contractor shall submit a report to the CO and COR within ten (10) business days detailing the finding and corrective action(s) of the audit.
- COR and CO will review the report and provide a response to the Contractor within ten (10) business days.
- Once corrective action is completed, the Contractor will provide a final report to the CO and COR.

SECTION F – DELIVERIES OR PERFORMANCE

ARTICLE F.1. ESTIMATED PERIOD OF PERFORMANCE

The estimated period of performance for this contract shall be consistent with the dates set forth in the base performance segment CLIN 0001 set forth in ARTICLE B.2. If the Government exercises its Option(s) pursuant to the Option Clause in ARTICLE I.3 of the contract, the period of performance shall be increased as shown in the table in Article B.3.

ARTICLE F.2. DELIVERABLES

Successful performance of the final contract shall be deemed to occur upon completion of performance of the work set forth in the Statement of Work dated June 24, 2016, set forth in SECTION J - List of Attachments of this contract and upon delivery and acceptance, as required by the Statement of Work, by the Contracting Officer, of each of the deliverables described in SECTION C, SECTION F, and SECTION J.

All deliverables and reporting documents listed within this section shall be delivered electronically (as defined in SECTION F.3. ELECTRONIC SUBMISSION) to the CO, CS, and the COR unless otherwise specified by the Contracting Officer.

a. **Summary of Contract Deliverables**

Unless otherwise specified by the Contracting Officer, the deliverables identified in this SECTION F shall also be delivered electronically to the designated eRoom along with a concurrent email notification sent to the Contracting Officer, Contract Specialist, COR, and Alternate COR stating delivery has been made.

All paper/hardcopy documents/reports submitted under this contract shall beprinted or copied, double-sided, on at least 30 percent post-consumer fiber paper, whenever practicable, in accordance with FAR 4.302(b). Hard copies of deliverables and reports furnished to the USG under the resultant Contract (including invoices) shall be addressed as follows:

HHS/ASPR/AMCG
ATTN: George Keane, Contracting Officer
330 Independence Avenue, S.W., Room G640 Washington, DC 20201
Email: george.keane@hhs.gov

HHS/ASPR/BARDA
ATTN: Adam Clark, Ph.D.
Contracting Officer's Representative
330 Independence Avenue, S.W., Room G640
Washington, DC 20201
Email: adam.clark@hhs.gov

1. Summary of Contract Deliverables - Unless otherwise stated, each deliverable in the table below shall be provided as one (1) electronic copy to the COR, CS, and CO as set forth in SECTION D.

TECHNICAL DELIVERABLES

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
01	Kickoff Meeting	The Contractor shall complete a Kickoff meeting after contract award	• Within a month of contract award. • Contractor shall provide itinerary and agenda at least 5 business days in advance of site visit. • COR approves and distributes itinerary and agenda within 3 business days. • Contractor provides meeting minutes to COR within 5 business days after the meeting. • COR reviews, comments, and approves minutes within 10 business days.
02	Quarterly Meetings	The Contractor shall hold recurring teleconference or face-to-face Program Review Meetings approximately every third month either in Washington D.C or at work sites of the Contractor or subcontractors. The meetings will be used to discuss contract progress in relation to the Program Management deliverables described below as well as study designs, technical, regulatory , and ethical aspects of the program.	• Contractor shall provide itinerary and agenda at least 5 business days in advance of site visit • COR approves and distributes itinerary and agenda within 3 business days. • Contractor provides meeting minutes to COR within 5 business days after the meeting. • COR reviews, comments, and approves minutes within 10 business days.
03	Biweekly Teleconference Meetings	The Contractor shall participate in teleconferences every two weeks with BARDA to discuss the performance of the contract.	• Contractor provides agenda to COR no later than 2 business days in advance of meeting. • COR approves and distributes agenda prior to meeting. • Contractor provides meeting minutes to COR within 5 business days following the meeting. • COR reviews, comments, and approves minutes within 10 business days following the meeting.
04 (Monthly) 05 (Annual)	Monthly & Annual Technical Progress Reports	The Monthly and Annual Technical Progress report shall address each of the below items and be cross-referenced to the Work Breakdown Structure (WBS), Statement of Work (SOW), Integrated Master Schedule (IMS), Performance Measurement Baseline Review report (PMBR), Earned Value Management (EVM), and Contract Performance Report (CPR).	• Monthly Reports shall be submitted on the 20th day of the month after the end of each month with an Annual Report submitted on the 30th calendar day of the final month of each contract year for the previous twelve calendar months. Monthly progress reports are not required for the periods when the Annual Report(s) and Final Report are due. The COR and CO will review the monthly reports with the Contractor and provide feedback.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
		1. An Executive Summary highlighting the progress, issues and relevant manufacturing, non-clinical, clinical and regulatory activities. The Executive Summary should highlight only critical issues for that reporting period and resolution approach; limited to 2-3 pages. 2. Progress in meeting contract milestones – broken out by subtasks within each milestone, overall project assessment, problems encountered and recommended solutions. The reports shall detail the planned and actual progress during the period covered, explaining occurrences of any differences between the two and the corrective steps. 3. The reports shall also include a three-month rolling forecast of the key planned activities, referencing the WBS/IMS. 4. A tracking log of progress on regulatory submissions with the FDA number, description of submission, date of submission, status of submission and next steps. 5. Provide updated EVM/CPR. 6. Estimated and Actual Expenses. 7. This report shall also contain a narrative or table detailing whether there is a significant discrepancy (>10%) at this time between the % of work completed and the cumulative costs incurred to date. Monthly and actual expenses should be broken down to the appropriate WBS level. This section of the report should also contain estimates for the Subcontractors' expenses from the previous month if the Subcontractor did not submit a bill in the previous month. If the subcontractor(s) was not working or did not incur any costs in the previous month, then a statement to this effect should be included in this report for those respective subcontractors.	
06	Earned Value Management (EVM) / Contract Performance Report (CPR)	Contractor will provide a monthly Contract Performance Report (CPR) Format 1 at an agreed upon reporting level using the BARDA provided WBS and a Variance Analysis Report (Format 5). The supplemental monthly CAP report shall contain, at the work package level, time phased budget (budgeted cost of work scheduled), earned value (budgeted cost of work performed), and actual costs of work performed as captured in Contractor's EVM systems. The Contractor shall provide a rationale in the package of its use of % complete as EVMS methodology or identity if any other EVMS methodology is being used.	• Contractor shall provide EVM/CPR as part of the Monthly Progress Report on the 20th day of the month after the end of each month (this requirement begins only as set forth in the Contract Milestones & Related Deliverables table. • Contractor shall provide top level or key changes in baseline cost as a result of anticipated cost savings or risks. • BARDA may request, on a monthly or ad hoc basis that the Contractor provide raw data at a reporting level or lower level as BARDA deems necessary . • BARDA may raise, in writing, concerns for Contractor to address; Contractor must address, in writing, all concerns raised by BARDA.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
			• Reporting will commence after the EVM system has been implemented but no later than 3 months after start of base period.
07	Performance Measurement Baseline Review (PMBR)	PMBR Report shall address each of the items listed below and be cross-referenced to the IMP, WBS, SOW, and Risk Management Plan. 1. Contractor provides baseline proposal. 2. Responsibility Assignment Matrix . 3. A description of the work scope through control account Work Authorization Documents and/or WBS Dictionary down to the control account level. 4. Template for work packages. 5. IMS with the inclusion of agreed major milestones and control account plans for all control accounts. 6. Baseline revision documentation and program log(s) risk management plan.	• Due within 90 days of contract award. • Contractor shall provide baseline proposal .ppt briefing 10 business days prior to meeting. • Contractor provides agenda to COR 2 business days in advance of meeting. • COR approves (with CO concurrence) and distributes agenda no later than 2 business days in advance of meeting. • COR approves (with CO concurrence) all meeting material no later than 2 business days in advance of meeting. • Contactor provides minutes within 5 business days of the meeting. • COR reviews and approves (with CO concurrence) minutes. • BARDA will review documentation and provide written comments and questions to Contractor. Contractor shall address BARDA's comments and resubmit PMBR report for BARDA approval within 10 business days.
08	Risk Management Plan	The Contractor shall provide a Risk Management Plan that outlines the impacts of each risk in relation to the cost, schedule, and performance objectives. The plan shall include risk mitigation strategies. Each risk mitigation strategy will capture how the corrective action will reduce impacts on cost, schedule and performance.	• Due within 90 days of contract award. • Contractor provides updated Risk Management Plan in Monthly Progress Report. • BARDA shall provide Contractor with a written list of concerns in response plan submitted. • Contractor must address, in writing, all concerns raised by BARDA within 20 business days of Contractor's receipt of BARDA's concerns.
09	Deviation Notification and Mitigation Strategy	Process for changing IMS activities associated with cost and schedule as baselined at the PMBR. Contractor shall notify BARDA of significant changes the IMS defined as increases in cost above 5% or schedule slippage of more than 30 days, which would require a PoP extension. Contractor shall provide a high level management strategy for risk mitigation.	• Due as needed.
10	Go/No-Go Decision Gate Presentation	Contractor shall provide a presentation detailing technical progress made towards completion of Go/No-Go decision gate milestones following a prescribed template provided by BARDA prior to the IPR.	• Contractor shall provide presentation in .ppt format 10 business days prior to the In-Process Review (IPR). • Contractor shall submit written justification of progress towards satisfying Go/No-Go criteria. • After reviewing, BARDA COR and CO will provide a written response.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
11	Incident Report	Contractor shall communicate and document all critical programmatic concerns, risks, or potential risks with BARDA.	• Due within 48 hours of activity or incident or within 24 hours for a security activity or incident. • Email or telephone with written follow-up to COR and CO. • Additional updates due to COR and CO within 48 hours of additional developments. • Contractor shall submit within 5 business days a Corrective Action Plan (if deemed necessary by either party) to address any potential issues. • If corrective action is deemed necessary, Contractor must address in writing, its consideration of concerns raised by BARDA within 5 business days of receiving such concerns in writing.
12	Draft and Final Reports for Clinical and Non-Clinical Studies	Contractor shall provide Draft and Final Clinical/Non-Clinical Study Reports to BARDA for review and comment.	• Draft report due within 45 calendar days after completion of analysis and at least 15 business days prior to submission to FDA. • Subcontractor prepared reports received by the Contractor shall be submitted to the Contracting Officer's Technical Representative and Contracting Officer (CO) for review and comment no later than 5 business days after receipt by Contractor. • The Government shall provide written comments to the Draft Final Report for Clinical and Non-Clinical Studies within 15 business days after the submission. • Final report due 30 calendar days after receiving comments on the Draft Final Report for Clinical and Non-Clinical Studies. If corrective action is recommended, Contractor must address, in writing, all concerns raised by BARDA in writing. • Contractor shall consider revising reports to address BARDA's recommendations prior to FDA submission. • Final FDA submissions shall be provided to BARDA concurrently or no later than 1 business day after submission to the FDA.
13	Standard Operating Procedures	The Contractor shall make internal and, to the extent possible, subcontractor Standard Operating Procedures (SOPs) available for review electronically .	Upon request from the Project Officer/Contracting Officer.
14	Manufacturing Campaign Reports	Contractor shall provide Manufacturing Campaign Reports to BARDA for review and comment prior to submission to FDA. The COR and CO reserve the right to request within the PoP a non-proprietary Manufacturing Campaign Report for distribution within the USG.	• Contractor will submit Manufacturing Campaign Reports at least 15 business days prior to FDA submission. • If corrective action is recommended, Contractor must address, in writing, all concerns raised by BARDA in writing.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
			• Contractor shall consider revising reports to address BARDA's concerns and/or recommendations prior to FDA submission. • Final FDA submission shall be submitted to BARDA concurrently or no later than 1 business day after submission to the FDA.
15	FDA Correspondence	The Contractor shall memorialize any correspondence between Contractor and FDA and submit to BARDA. All documents shall be duly marked as either "Draft" or " Final".	• Contractor shall provide written summary of any FDA correspondence within 5 business days of correspondence.
16	FDA Meetings	The Contractor shall forward the dates and times of any meeting with the FDA to BARDA and make arrangements for appropriate BARDA staff to attend the FDA meetings. BARDA staff shall include up to a maximum of four people (COR, CO and up to 2 subject matter experts).	• Contractor shall notify BARDA of upcoming FDA meeting within 24 hours of scheduling Type A, B or C meetings OR within 24 hours of meeting occurrence for ad hoc meetings. • The Contractor shall forward initial Contractor and FDA-issued draft minutes and final minutes of any meeting with the FDA to BARDA within 5 business days of receipt. All documents shall be duly marked as either "Draft" or "Final".
17	FDA Submissions	The Contractor shall provide BARDA the opportunity to review and comment upon all draft submissions before submission to the FDA. Contractor shall provide BARDA with an electronic copy of the final FDA submission. All documents shall be duly marked as either "Draft" or "Final".	• Contractor shall submit draft FDA submissions to BARDA at least 15 business days prior to FDA submission. • BARDA will provide feedback to Contractor within 10 business days of receipt. • If corrective action is recommended, the Contractor must address, in writing, its consideration of all concerns raised by BARDA. • The Contractor shall consider revising their documents to address BARDA's concerns and/or recommendations prior to FDA submission. • Final FDA submissions shall be submitted to BARDA concurrently or no later than 1 calendar day of its submission to CDER.
18	FDA Audits	In the event of an FDA inspection which occurs as a result of this contract and for the product, or for any other FDA inspection that has the reasonable potential to impact the performance of this contract, the Contractor shall provide the USG with an exact copy (non-redacted) of the FDA Form 483 and the Establishment Inspection Report (EIR). The Contractor shall provide the COR and CO with copies of the plan for addressing areas of non-conformance to FDA regulations for GLP, GMP, or GCP guidelines as identified in the audit report, status updates during the plans execution and a copy of all final responses to the FDA. The Contractor shall also provide redacted copies of any FDA audits received from subcontractors that occur as a result of this contract or for this product. The Contractor shall make arrangements for BARDA representative(s) to be present during the final debrief by the regulatory inspector.	• Contractor shall notify CO and COR within 10 business days of a scheduled FDA audit or within 24 hours of an ad hoc site visit/audit if the FDA does not provide advanced notice. • Contractor shall provide copies of any FDA audit report received from subcontractors that occur as a result of this contract or for this product within 5 business days of receiving correspondence from the FDA or third party . • Within 10 business days of audit report, Contractor shall provide CO with a plan for addressing areas of nonconformance, if any are identified.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
19	QA Audit Reports	BARDA reserves the right to participate in QA audits. Upon completion of the audit/site visit the Contractor shall provide a report capturing the findings, results and next steps in proceeding with the subcontractor. If action is requested of the subcontractor, detailed concerns for addressing areas of non-conformance to FDA regulations for GLP, GMP, or GCP guidelines, as identified in the audit report, must be provided to BARDA. The Contractor shall provide responses from the subcontractors to address these concerns and plans for corrective action execution.	• Contractor shall notify CO and COR 10 days in advance of upcoming, ongoing, or recent audits/site visits of subcontractors as part of weekly communications. • Contractor shall notify the COR and CO within 5 business days of report completion.
20	BARDA Audit	Contractor shall accommodate periodic or ad hoc site visits by BARDA. If BARDA, the Contractor, or other parties identifies any issues during an audit, the Contractor shall capture the issues, identify potential solutions, and provide a report to BARDA.	• If issues are identified during the audit, Contractor shall submit a report to BARDA detailing the finding and corrective action(s) within 10 business days of the audit. • COR and CO will review the report and provide a response to the Contractor with 10 business days. • Once corrective action is completed, the Contractor will provide a final report to BARDA.
21	Technical Documents	Upon request, Contractor shall provide CO and COR with deliverables from the following contract funded activities: process Development Reports, Assay Qualification Plan/Report, Assay Validation Plan/Report, Assay Technology Transfer Report, Batch Records, SOPs, Master Production Records, Certificate of Analysis, Clinical Studies Data or Reports. The CO and COR reserve the right to request within the PoP a non-proprietary technical document for distribution within the Government.	• Contractor shall provide technical document within 10 business days of CO or COR request. Contractor can request additional time on an as needed basis. • If corrective action is recommended, the Contractor must address, in writing, concerns raised by BARDA in writing.
22	Animal Model or Other Technology Transfer Package	Contractor shall provide Animal Model or Other Technology Transfer Package relevant data.	• Contractor shall provide data within 10 business days of COR or CO request.
23	Raw Data or Data Analysis	Contractor shall provide raw data or data analysis to BARDA upon request.	• Contractor shall provide data or data analysis to CO and COR within 20 business days of request.
24	Product Transition Strategy	Contractor shall provide a 2-4 page summary document containing a Product Transition Strategy to support transition of the product(s) prior to end of the base and/or option(s) POP. The Product Transition Strategy should provide a strategic plan for further development and/or stockpiling of the product. The transition strategy shall provide options and/or a specific approach for the transition of MCM product for further development, procurement, approval and/or stockpile.	• Contractor shall provide a Product Transition Strategy to support transition of the product(s) 90 days prior to the end of the (base/option) POP as addendum to the Quarterly Project Status Report.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
25	Publications	Any manuscript or scientific meeting abstract containing data generated under this contract must be submitted to BARDA for review prior to submission.	• Contractor must submit all manuscript or scientific meeting abstract to PO and CO within 30 business days for manuscripts and 15 business days for abstracts. • Contractor must address in writing all concerns raised by BARDA in writing. • Final submissions shall be submitted to BARDA concurrently or no later than one (1) calendar day of its submission.
26	Press Releases	Contractor agrees to accurately and factually represent the work conducted under this contract in all press releases.	• With the exeption of ad-hoc press releases required by applicable law or regulations, Contractor shall ensure that the CO has received and approved an advanced copy of any press release to this contract not less than 2 business days prior to the issuance of the press release. • If corrective action is required, the Contractor agrees to accurately and factually represent the work conducted under this contract in all press releases. • Any final press releases shall be submitted to BARDA no later than 1 (one) calendar day prior to its release.
27	Integrated Master Plan (IMP)	The Contractor shall provide an IMP including WBS, critical path milestones, and Earned Value Management Plan.	• Contractor shall provide the draft IMP within 90 days of contract award with final due 8 months after award and updated monthly as part of the Monthly Progress Report. • Contractor must address, in writing, all concerns raised by BARDA in writing.
28	Draft and Final Technical Progress Report	A Draft Final Technical Progress Report containing a summation of the work performed and the results obtained for the entire contract PoP. The draft report shall be duly marked as 'Draft'. The Final Technical Progress Report incorporating feedback received from BARDA and containing a summation of the work performed and the results obtained for the entire contract PoP. The final report shall document the results of the entire contract. This report shall be in sufficient detail to fully describe the progress achieved under all milestones. The final report shall be duly marked as 'Final'.	• Contractor shall provide a draft Technical Progress Report 75 calendar days before the end of the PoP and the Final Technical Progress Report on or before the completion date of the PoP. • Subcontractor prepared reports received by the Contractor shall be submitted to the COR and CO for review and comment no later than 5 business days after receipt by the Contractor. • COR shall provide feedback on draft report within 15 calendar days of receipt, which the Contractor shall consider incorporating into the Final Report. • Contractor shall submit, with the Final Technical Progress Report, a summary (not to exceed 200 words) of salient results achieved during the performance of the contract.
29	Draft and Final Study Protocols	Contractor shall provide all Draft and Final Study Protocols to BARDA for evaluation. (The CO and PO reserves the right to request within the period of performance a non-proprietary Study Protocol for distribution within the United States Government (USG))	• The Contractor will submit all proposed protocols to BARDA at least 10 business days prior to study start. If corrective action is required, the Contractor must address in writing all concerns raised by BARDA to the satisfaction of BARDA before study execution and provide BARDA a revised draft protocol that addresses BARDA's comments and requested changes.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
			• After receiving the revised Study Protocol that satisfies BARDA, the CO will approve the revised Study Protocol and will provide a written approval to the Contractor that provides authorization to the Contractor to execute the specific study. • Contractor shall not proceed with any study protocol until BARDA gives its approval and the Contractor has provided BARDA with a final and approved Study Protocol.
30	Clinical Study Status Update	Contractor shall provide PO with a status update of clinical studies that are actively enrolling patients to include by study site: cumulative enrollment; new enrollments; screen failures; patients dropped from study; AE and SAEs; activation or inactivation of study sites; investigator appointments or changes; and status of IRB/IEC review/approval/renewal. Contractor will provide proposed format for BARDA PO review and approval.	• Update will be submitted by e-mail or other electronic format to be provided by BARDA by the end of the 20th business day of each new month. • Updates, to the extent they are available, will be presented during biweekly teleconferences. • If no changes have occurred since the prior update only a simple statement that there is no new data is required.

[***]
CLIN 0001

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
			Manufacturing Process Development (WBS 1.1)				
1	[***]	[***]	[***]	[***]	[***]	1.1.6	[***]
			GMP Manufacturing (WBS 1.2)				
2	[***]	[***]	[***]	[***]	[***]	1.2.4	[***]
			Assay Development (WBS 1.3)				
3	[***]	[***]	[***]	[***]	[***]	1.3.1	[***]
4	[***]	[***]	[***]	[***]	[***]	1.3.2	[***]
5	[***]	[***]	[***]	[***]	[***]	1.3.3	[***]
6	[***]	[***]	[***]	[***]	[***]	1.3.4	[***]
			Clinical Development (WBS 1.5)				
7	[***]	[***]	[***]	[***]	[***]	1.5.1	[***]
			Regulatory (WBS 1.6)				
8	[***]	[***]	[***]	[***]	[***]	1.6.1	[***]
9	[***]	[***]	[***]	[***]	[***]	1.6.2	[***]

*** ***Confidential treatment requested***

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
10	[***]	[***]	[***]	[***]	[***]	1.6.3	[***]
			Program Management (WBS 1.7)				
11	[***]	[***]	[***]	[***]	[***]	1.7.1	[***]
12	[***]	[***]	[***]	[***]	[***]	1.7.2	[***]
13	[***]	[***]	[***]	[***]	[***]	1.7.3	[***]

Option 1, CLIN 0002: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
			Analytical Development (WBS 2.3)				
1	[***]	[***]	[***]	[***]	[***]	2.3.1	[***]
2	[***]	[***]	[***]	[***]	[***]	2.3.2	[***]
3	[***]	[***]	[***]	[***]	[***]	2.3.3	[***]
			Regulatory (WBS 2.6)				
4	[***]	[***]	[***]	[***]	[***]	2.6.1	[***]
			Program Management (WBS 2.7)				
5	[***]	[***]	[***]	[***]	[***]	2.7.1	[***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
6	[***]	[***]	[***]	[***]	[***]	2.7.2	[***]
7	[***]	[***]	[***]	[***]	[***]	2.7.3	[***]

Option 2, CLIN 0003: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
Manufacturing Process Development (WBS 2.1)							
1	[***]	[***]	[***]	[***]	[***]	2.1.1	[***]
2	[***]	[***]	[***]	[***]	[***]	2.1.2	[***]
3	[***]	[***]	[***]	[***]	[***]	2.1.3	[***]
4	[***]	[***]	[***]	[***]	[***]	2.1.4	[***]
5	[***]	[***]	[***]	[***]	[***]	2.1.5	[***]
6	[***]	[***]	[***]	[***]	[***]	2.1.6	[***]
7	[***]	[***]	[***]	[***]	[***]	2.1.8	[***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
			GMP Manufacturing (WBS 2.2)				
8	[***]	[***]	[***]	[***]	[***]	2.2.1	[***]
9	[***]	[***]	[***]	[***]	[***]	2.2.2	[***]
10	[***]	[***]	[***]	[***]	[***]	2.3.3	[***]
11	[***]	[***]	[***]	[***]	[***]	2.3.4	[***]
12	[***]	[***]	[***]	[***]	[***]	2.2.5	[***]

Option 3, CLIN 0004: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
1	[***]	[***]	[***]	[***]	[***]	2.1.7	[***]

Option 4, CLIN 0005: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
			Non-clinical Development (WBS 2.4)				
1	[***]	[***]	[***]	[***]	[***]	2.4.1	[***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
2	[***]	[***]	[***]	[***]	[***]	2.4.2	[***]
3	[***]	[***]	[***]	[***]	[***]	2.4.3	[***]
4	[***]	[***]	[***]	[***]	[***]	2.4.4	[***]
5	[***]	[***]	[***]	[***]	[***]	2.4.5	[***]
6	[***]	[***]	[***]	[***]	[***]	2.4.6	[***]
7	[***]	[***]	[***]	[***]	[***]	2.4.7	[***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
8	[***]	[***]	[***]	[***]	[***]	2.4.8	[***]

Option 5, CLIN 0006: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
Clinical Development (WBS 2.5)							
1	[***]	[***]	[***]	[***]	[***]	2.5.1	[***]

Option 6, CLIN 0007: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
Clinical Development (WBS 2.5)							
1	[***]	[***]	[***]	[***]	[***]	2.5.2	[***]

Option 7, CLIN 0008: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name , Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
Clinical Development (WBS 2.5)							
1	[***]	[***]	[***]	[***]	[***]	2.5.3	[***]

NOTE: Pursuant to federal law, no Government personnel shall publish, divulge, disclose, or otherwise make known to any non-government entity any Contractor data marked according to FAR 52.227-14, unless permitted to do so by law or regulation.

2. **Detailed Description of Select Contract Deliverables**

A. Monthly and Annual Progress Reports

In addition to those reports required by the other terms of this contract, the Contractor shall prepare and submit the following reports in the manner stated below and in accordance with this Article F of this contract, and in the Statement of Work, attached to this contract as Attachment 1 (SECTION J-List of Attachments).

i. **Monthly Progress Report**

This report shall include a description of the activities during the reporting period, and the activities planned for the ensuing reporting period. The first reporting period consists of the first full month of performance plus any fractional part of the initial month. Thereafter, the reporting period shall consist of each calendar month.

The Contractor shall submit a Monthly Progress Report according to the dates set forth in the summary table ("Summary of Contract Deliverables") under this article. The progress report shall conform to the requirements set forth in the DELIVERIES Article in SECTION F of this contract.

The format should include:

- A cover page that includes the contract number and title; the type of report and period that it covers; the Contractor's name, address, telephone number, fax number, and e-mail address; and the date of submission;
- SECTION I – EXECUTIVE SUMMARY
- SECTION II - PROGRESS
- SECTION II Part A: OVERALL PROGRESS - A description of overall progress.
- SECTION II Part B: MANAGEMENT AND ADMINISTRATIVE UPDATE - A description of all meetings, conference calls, etc. that have taken place during the reporting period. Include progress on administration and management issues (e.g., evaluating, and managing subcontractor performance, and personnel changes).
- SECTION II Part C: TECHNICAL PROGRESS - For each activity related to Gantt chart, document the results of work completed and cost incurred during the period covered in relation to proposed progress, effort and budget. The report shall be in sufficient detail to explain comprehensively the results achieved. The description shall include pertinent data and/or graphs in sufficient detail to explain any significant results achieved and preliminary conclusions resulting from analysis and scientific evaluation of data accumulated to date under the contract. The report shall include a description of problems encountered and proposed corrective action; differences between planned and actual progress, why the differences have occurred and what corrective actions are planned; preliminary conclusions resulting from analysis and scientific evaluation of data accumulated to date under the project.

- SECTION II Part D: PROPOSED WORK - A summary of work proposed related to Gantt chart for the next reporting period and preprints/reprints of papers and abstracts.
- SECTION III: Estimated and Actual Expenses.
  a. This section of the report shall contain a narrative or table detailing whether there is a significant discrepancy (>10%) at this time between the % of work completed and the cumulative costs incurred to date. Monthly and actual expenses should be broken down to the appropriate WBS level.

  b. This section of the report should also contain estimates for the Subcontractors' expenses from the previous month if the Subcontractor did not submit a bill in the previous month. If the subcontractor(s) was not working or did not incur any costs in the previous month, then a statement to this effect should be included in this report for those respective subcontractors.
- SECTION IV: Earned Value Management Reporting: Contractor will provide a monthly Contract Performance Report (CPR) at an agreed upon reporting level (WBS level 3) using the BARDA provided WBS and a Variance Analysis Report. EVMS shall be applied to all CLINs as part of the Integrated Master Project Plan following the Seven Principles of Earned Value Management. In accordance with FAR 52.215-2, Audit and Records-Negotiation, BARDA may request, on a quarterly or ad hoc basis, that the Contractor provide raw data. BARDA may request additional data at a reporting level or at lower levels, as BARDA deems necessary.

A Monthly Progress Report will not be required in the same month that the Annual Progress Report is submitted.

ii. **Annual Progress Report**

This report shall include a summation of the results of the entire contract work for the period covered. Monthly Progress Reports shall not be submitted in the same month when an Annual Progress Report is due. Furthermore, an Annual Progress Report will not be required for the period when the Final Report is due.

The first Annual Progress Report shall be submitted in accordance with the date set forth in the table ("Summary of Contract Deliverables") under ARTICLE F.2. of this contract. The progress report shall conform to the requirements set forth in the DELIVERIES Article in SECTION F of this contract.

Each Annual Progress Report shall include:

- A Cover page that includes the contract number and title; the type of report and period that it covers; the Contractor's name, address, telephone number, fax number, and email address; and the date of submission;
- SECTION I: EXECUTIVE SUMMARY - A brief overview of the work completed, and the major accomplishments achieved during the reporting period.

- SECTION II: PROGRESS
- SECTION II Part A: OVERALL PROGRESS - A description of overall progress.
- SECTION II Part B: MANAGEMENT AND ADMINISTRATIVE UPDATE - A high level summary of critical meetings, etc. that have taken place during the reporting period. Include progress on administration and management to critical factors of the project (e.g. regulatory compliance audits and key personnel changes).
- SECTION II Part C: TECHNICAL PROGRESS - A detailed description of the work performed structured to follow the activities and decision gates outlined at the Integrated Baseline Review and as described in the Integrated Master Plan. The Report should include a description of any problems (technical or financial) that occurred or were identified during the reporting period, and how these problems were resolved.
- SECTION II Part D: PROPOSED WORK - A summary of work proposed for the next year period to include an updated Gantt Chart.
- SECTION III: Estimated and Actual Expenses.

  a. This section of the report shall contain a narrative or table detailing whether there were discrepancies between estimated and actual expenses over the past year. Actual expenses should be broken down to the appropriate WBS level. This section of the report should also contain estimates for outstanding costs for the previous year which may have been incurred, but not yet billed.
- SECTION IV: EARNED VALUE MANAGEMENT REPORTING - Contractor will provide a quarterly Contract Performance Report (CPR) at an agreed upon (WBS level 3) reporting level using the BARDA provided WBS and a Variance Analysis Report. EVMS shall be applied to all Cost Plus Fixed Fee CLINs as part of the Integrated Master Project Plan following the Seven Principles of Earned Value Management. In accordance with FAR 52.215-2, Audit and Records-Negotiation, BARDA may request, on a quarterly or ad hoc basis, that the Contractor provide raw data. BARDA may request additional data at a reporting level or at lower levels, as BARDA deems necessary.

Contractor also should include the following in the Annual Progress Report:

1. Copies of manuscripts (published and unpublished), abstracts, and any protocols or methods developed specifically under the contract during the reporting period; and
2. A summary of any Subject Inventions per the requirements under FAR Clause 52.227-11.

iii. **Draft Final Report and Final Report**

These reports are to include a summation of the work performed and results obtained for the entire contract period of performance. This report shall be in sufficient detail to describe comprehensively the results achieved. The Draft Final Report and Final Report shall be submitted in accordance with the DELIVERIES Article in SECTION F of the contract. An Annual Progress Report will not be required for the period when the Final Report is due. The Draft Final Report and the Final Report shall be submitted in accordance with the dates set forth in the table ("Summary of Contract Deliverables") under ARTICLE F.2. of this contract. The report shall conform to the following format:

1. Cover page to include the contract number, contract title, performance period covered, Contractor's name and address, telephone number, fax number, email address and submission date.
2. SECTION I: EXECUTIVE SUMMARY - Summarize the purpose and scope of the contract effort including a summary of the major accomplishments relative to the specific activities set forth in the Statement of Work.
3. SECTION II: RESULTS - A detailed description of the work performed related to WBS and Gantt chart, the results obtained, and the impact of the results on the scientific and/or public health community including a listing of all manuscripts (published and in preparation) and abstracts presented during the entire period of performance and a summary of all inventions.

Draft Final Report: The Contractor is required to submit the Draft Final Report to the Contracting Officer's Representative and Contracting Officer. The Contracting Officer's Representative and Contracting Officer will review the Draft Final Report and provide the Contractor with comments in accordance with the dates set forth in ARTICLE F.2. of this contract.

Final Report: The Contractor will deliver the final version of the Final Report on or before the completion date of the contract. The final version shall include or address the COR's and CO's written comments on the draft report. Final Report shall be submitted on or before the completion date of the contract.

iv. **Summary of Salient Results**

The Contractor shall submit, with the Final Report, a summary (not to exceed 200 words) of salient results achieved during the performance of the contract.

v. **Audit Reports**

Within thirty (30) calendar days of an audit related to conformance to FDA regulations and guidance, including adherence to GLP, GMP, GCP guidelines, the Contractor shall provide copies of the audit report (so long as received from the FDA) and a plan for addressing areas of nonconformance to FDA regulations and guidelines for GLP, GMP, or GCP guidelines as identified in the final audit report.

vi. **Other Technical Reports**

1. Draft Report for Clinical and Non-Clinical Studies and Final Report for Clinical and Non-Clinical Studies

- The clinical trial reports shall follow the format of International Conference on Harmonization document ICH E3 "Guideline for Industry on Structure and Content of Clinical Study Reports"
    - Draft Final Report for Clinical and Non-Clinical Studies funded by this contract will be submitted to the Contracting Officer's Representative and Contracting Officer (CO) for review and comment within the time frames set forth in the table ("Summary of Contract Deliverables") under ARTICLE F.2.
    - Subcontractor prepared reports received by the Contractor shall be submitted to the Contracting Officer's Representative and Contracting Officer (CO) for review and comment as set forth by the table in this Article. Contractor shall consider revising reports to address BARDA's recommendations prior to FDA submission.
    - The Government shall provide written comments to the Draft Final Report for Clinical and Non-Clinical Studies in accordance with the dates set forth by the table in this Article.
    - The comprehensive Final Report for Clinical and Non-Clinical Studies will be submitted to the Contracting Officer and the Contracting Officer's Representative set forth by the table in this Article.

2. Supplemental Technical Documents

Upon request, Contractor shall provide CO and COR with the following contract funded documents as specified below but not limited to: Process Development Reports; Assay Qualification Plan/Report, Assay Validation Plan/Report, Assay Technology Transfer Report, Batch Records, Contractor/Subcontractor Standard Operating Procedures (SOP's), Master Production Records, Certificate of Analysis, Clinical Studies Data or Reports. The CO and COR reserve the right to request within the Period of Performance a non-proprietary technical document for distribution within the USG. Contractor shall provide technical document within 10 business days of CO or COR request. Contractor can request additional time on an as needed basis. If edits are recommended, the Contractor must address, in writing, concerns raised by BARDA in writing.

B. Deliverables Arising from FDA Correspondence

i. **FDA Meetings**

The Contractor shall forward the dates and times of any meeting with the FDA to BARDA and make arrangements for appropriate BARDA staff to attend the FDA meetings. BARDA staff shall include up to a maximum of four people (COR, CO and up to 2 subject matter experts).

- Contractor shall notify BARDA of upcoming FDA meeting within 24 hours of scheduling Type A, B or C meetings OR within 24 hours of meeting occurrence for ad hoc meetings.

- The Contractor shall forward initial Contractor and FDA-issued draft minutes and final minutes of any meeting with the FDA to BARDA within 5 business days of receipt. All documents shall be duly marked as either "Draft" or "Final."

ii. **FDA Submissions**

The Contractor shall provide BARDA all documents submitted to the FDA.
Contractor shall provide BARDA with an electronic copy of the final FDA submission. All documents shall be duly marked as either "Draft" or "Final."

- If draft documents are submitted for BARDA review, BARDA will provide feedback to Contractor within 10 business days of receipt.
- If BARDA reviews draft documents, the Contractor shall revise their documents to address BARDA's written concerns and/or recommendations prior to FDA submission.
- Final FDA submissions shall be submitted to BARDA concurrently or no later than 1 calendar day of their submission to FDA.

iii. **FDA Audits**

In the event of an FDA inspection which occurs as a result of this contract and for the product, or for any other FDA inspection that has the reasonable potential to impact the performance of this contract, the Contractor shall provide the USG with an exact copy (non-redacted) of the FDA Form 483 and the Establishment Inspection Report (EIR) within five (5) business days after the Contractors receipt of those documents. The Contractor shall provide the COR and CO with copies of the plan for addressing areas of non-conformance to FDA regulations for GLP, GMP, or GCP guidelines as identified in the audit report, status updates during the plans execution and a copy of all final responses to the FDA. The Contractor shall also provide redacted copies of any FDA audits received from subcontractors that occur as a result of this contract or for this product. The Contractor shall make arrangements for BARDA representative(s) to be present during the final debrief by the regulatory inspector.

- Contractor shall notify CO and COR within 10 business days of a scheduled FDA audit or within 24 hours of an ad hoc site visit/audit if the FDA does not provide advanced notice.
- Contractor shall provide copies of any FDA audit report received from subcontractors that occur as a result of this contract or for this product within 5 business days of receiving correspondence from the FDA, Subcontractor, or third party.
- Within 10 business days of audit report, Contractor shall provide CO with a plan for addressing areas of nonconformance, if any are identified.

iv. **Manufacturing Campaign Reports**

Contractor shall provide Manufacturing Campaign Reports to BARDA for review and comment prior to submission to FDA.

The COR and CO reserve the right to request within the Period of Performance (PoP) a non-proprietary Manufacturing Campaign Report for distribution within the USG.

- Contractor will submit Manufacturing Campaign Reports at least 15 business days prior to FDA submission.
- If corrective action is recommended, Contractor must address, in writing, all concerns raised by BARDA.
- Contractor shall revise the reports to address BARDA's concerns and/or recommendations prior to FDA submission.
- Final FDA submission shall be submitted to BARDA concurrently or no later than 1 business day after submission to the FDA.

v. **Other FDA Correspondence**

The Contractor shall memorialize any correspondence between Contractor and FDA and submit to BARDA. All documents shall be duly marked as either "Draft" or "Final." Contractor shall provide written summary of any FDA correspondence within 5 business days of correspondence.

C. Earned Value Management (EVM) Deliverables

i. **Earned Value Management (EVM) / Contract Performance Report (CPR)**

Contractor will provide a monthly CPR at an agreed upon reporting level using WBS and Variance Analysis report formats agreed upon by BARDA.

The supplemental monthly Control Account Plan (CAP) report shall contain, at the work package level, time phased budget (budgeted cost of work scheduled), earned value (budgeted cost of work performed), and actual costs of work performed as captured in Contractor's EVM systems. The Contractor shall provide a rationale in the package of its use of % complete as EVMS methodology, or identity if any other EVMS methodology is being used.

- Contractor shall provide EVM/CPR as part of the Monthly Progress Report (this requirement begins only as set forth in the Contract Milestones & Related Deliverables table, see CDRL #4)
- Contractor shall provide top level or key changes in baseline cost as a result of anticipated cost savings or risks
- BARDA may request, on a monthly or ad hoc basis that the Contractor provide raw data at a reporting level or lower level as BARDA deems necessary.
- Contractor must address, in writing, all concerns raised by BARDA.
- Reporting will commence after the EVM system has been implemented but no later than 90 days after start of base period and each exercised option period.

ii. **Integrated Master Plan (IMP)**

The Contractor shall provide an IMP including WBS, critical path milestones, and Earned Value Management Plan

- Contractor shall provide the draft IMP within 90 days of contract award with final due 8 months after award and updated monthly as part of the Monthly Progress Report
- Contractor must address, in writing, all concerns raised by BARDA

iii. **Performance Measurement Baseline Review (PMBR)**

PMBR Report shall address each of the items listed below and be cross- referenced to the IMP, WBS, SOW, and Risk Management Plan.

1. Contractor provides baseline proposal
2. Responsibility Assignment Matrix
3. A description of the work scope through control account Work Authorization Documents and/or WBS Dictionary down to the agreed upon control account level.
4. Template for work packages
5. Integrated Master Schedule (IMS) with the inclusion of agreed major milestones and control account plans for all control accounts
6. Baseline revision documentation and program log(s) risk management plan

- PMBR is due within 90 days of contract award
- Contractor shall provide baseline proposal .ppt briefing 10 business days prior to meeting
- Contractor provides agenda to COR 2 business days in advance of meeting
- COR approves (with CO concurrence) and distributes agenda
- COR approves (with CO concurrence) all meeting material
- Contactor provides minutes with 3 business days of the meeting
- COR reviews and approves (with CO concurrence) minutes
- BARDA will review documentation and provide written comments and questions to Contractor
- Contractor shall address BARDA's comments and resubmit PMBR report for BARDA approval within 10 business days.

iv. **Risk Management Plan**

The Contractor shall provide a Risk Management Plan that outlines the impacts of each risk in relation to the cost, schedule, and performance objectives. The plan shall include risk mitigation strategies. Each risk mitigation strategy will capture how the corrective action will reduce impacts on cost, schedule and performance.

- Due within 90 days of contract award
- Contractor provides updated Risk Management Plan in Monthly Progress Report
- BARDA shall provide Contractor with a written list of concerns in response plan submitted Contractor must address, in writing, all concerns raised by BARDA within 20 business days of Contractor's receipt of BARDA's concerns.

v. **Requirement for Notification of Deviation and Mitigation Strategy**

Process for changing IMS activities associated with cost and schedule as baselined at the PMBR. Contractor shall notify BARDA of significant changes the IMS defined as increases in cost above 5% or schedule slippage of more than 30 days, which would require an extension to the period of performance. Contractor shall provide a high level management strategy for risk mitigation. Notice due as needed.

ARTICLE F.3. ELECTRONIC SUBMISSION

For electronic delivery, the Contractor shall upload documents to the appropriate folder on https://eroom.bardatools.hhs.gov/eRoom ("eRoom") whichis the designated USG file sharing system. The USG shall provide two contractor representatives authorized log in access to the file share program. Each representative must complete a mandatory training provided by the USG prior to gaining user access. A notification email should be sent to the CO and COR upon electronic delivery of any documents.

ARTICLE F.4. SUBJECT INVENTION REPORTING REQUIREMENT

All reports and documentation required by FAR Clause 52.227-11, Patent Rights-Ownership by the Contractor, including, but not limited to, the invention disclosure report, the confirmatory license, and the government support certification, one copy of an annual utilization report, and a copy of the final invention statement, shall be submitted to the Contracting Officer. A final invention statement (see FAR 27.303 (b)(2)(ii)) shall be submitted to the Contracting Officer on the expiration date of the contract.

Reports and documentation submitted to the Contracting Officer shall be sent to the address set forth in SECTION G – CONTRACT ADMINISTRATION DATA.

If no invention is disclosed or no activity has occurred on a previously disclosed invention during the applicable reporting period, a negative report shall be submitted to the Contracting Officer at the address listed above.

SECTION G - CONTRACT ADMINISTRATION DATA

ARTICLE G.1. CONTRACTING OFFICER

The following Contracting Officers (CO) will represent the USG for the purpose of this contract:

Francine L. Hemphill
Contracting Officer
DHHS/OS/ASPR/AMCG
330 Independence Avenue, S.W. Room G640 Washington, D.C. 20201
(202) 205-9271
francine.hemphill@hhs.gov

George Keane
Contracting Officer
DHHS/OS/ASPR/AMCG
330 Independence Avenue, S.W. Room G640 Washington, D.C. 20201
(202) 260-5169
george.keane@hhs.gov

1) The Contracting Officer is the only individual who can legally commit the Government to the expenditure of public funds. No person other than the Contracting Officer can make any changes to the terms, conditions, general provisions, or other stipulations of this contract.

2) The Contracting Officer is the only person with the authority to act as agent of the Government under this contract. Only the Contracting Officer has authority to (1) direct or negotiate any changes in the statement of work; (2) modify or extend the period of performance; (3) change the delivery schedule; (4) authorize reimburse to the Contractor of any costs incurred during the performance of this contract; (5) otherwise change any terms and conditions of this contract.

3) No information other than that which may be contained in an authorized modification to this contract, duly issued by the Contracting Officer, which may be received from any person employed by the US Government, other otherwise, shall be considered grounds for deviation from any stipulation of this contract.

4) The Government may unilaterally change its CO designation, after which it will notify Contractor in writing of such change.

ARTICLE G.2. CONTRACTING OFFICER'S REPRESENTATIVE (COR)

The following Contracting Officer's Representative (COR) will represent the Government for the purpose of this contract:

Adam Clark
Contracting Officer's Representative (COR)
Biomedical Advanced Research and Development Authority (BARDA)
Office of the Assistant Secretary for Preparedness and Response
Department of Health and Human Services

Mailing Address:
330 Independence Avenue, S.W.
Room G644
Washington, D.C. 20201
202-692-4619 (Office)
Email: adam.clark@hhs.gov

Alternate COR:

Eric Espeland, PhD
Branch Chief – CBRN Vaccines
Division of CBRN Countermeasures
Biomedical Advanced Research & Development Authority (BARDA) Office of Secretary for Preparedness & Response (ASPR) Department of Health and Human Services

Mailing Address:

330 Independence Avenue, S.W.
Room G644
Washington, D.C. 20201
202-205-3633 (Office)
Email: eric.espeland@hhs.gov

The COR is responsible for:

1) Monitoring the Contractor's technical progress, including the surveillance and assessment of performance and recommending to the Contracting Officer changes in requirements;

2) Assisting the Contracting Officer in interpreting the statement of work and any other technical performance requirements;

3) Performing technical evaluation as required;

4) Performing technical inspections and acceptances required by this contract; and

5) Assisting in the resolution of technical problems encountered during performance. The Government may unilaterally change its COR designation, after which it will notify Contractor in writing of such change.

ARTICLE G.3. KEY PERSONNEL

Pursuant to the Key Personnel clause incorporated in Section I of this contract, the following individuals are considered to be essential to the work being performed hereunder:

#	NAME	ORGANIZATION	TITLE
1	[***]	Altimmune, Inc.	[***]
2	[***]	Altimmune, Inc.	[***]
3	[***]	Altimmune, Inc	[***]

The key personnel specified in this contract are considered to be essential to work performance. At least thirty (30) business days prior to diverting any of the specified individuals to other programs or contracts, including, where practicable, an instance when an individual must be replaced as a result of leaving the employ of the Contractor, the Contractor shall notify the Contracting Officer and shall submit comprehensive justification for the diversion or replacement request (including proposed substitutions for key personnel) to permit evaluation by the Government of the impact on performance under this contract. The Contractor shall not divert or otherwise replace any key personnel without the written consent of the Contracting Officer.

ARTICLE G.4. CONTRACT FINANCIAL REPORT

a. Financial reports on the attached Financial Report of Individual Project/Contract shall be submitted by the Contractor to the CO with a copy to the COR in accordance with the instructions for completing this form, which accompany the form, in an original and one electronic copy, not later than the 30th business day after the close of the reporting period. The line entries for subdivisions of work and elements of cost (expenditure categories), which shall be reported within the total contract, are discussed in paragraph e., below. Subsequent changes and/or additions in the line entries shall be made in writing.

b. Unless otherwise stated in the instructions for completing this form, all columns A through J, shall be completed for each report submitted.

c. The first financial report shall cover the period consisting of the first full three calendar months following the date of the contract, in addition to any fractional part of the initial month. Thereafter, reports will be on a quarterly basis.

d. The Contracting Officer may require the Contractor to submit detailed support for costs contained in one or more interim financial reports. This clause does not supersede the record retention requirements in FAR Part 4.7.

e. The listing of expenditure categories to be reported is incorporated as a part of this contract and can be found under SECTION J Attachment 3 entitled, “Financial Report of Individual Project/Contract,”.

f. The USG may unilaterally revise the “Financial Report of Individual Project/Contract” to reflect the allotment of additional funds.

ARTICLE G.5. INVOICE/FINANCING REQUEST AND CONTRACT FINANCIAL REPORTING

Include Program Support Center (PSC) in Receipt of Invoices:

Documents shall be delivered electronically to the Contracting Officer (CO), the Contracting Specialist (CS), the Contracting Officer’s Representative (COR) and PSC. Unless otherwise specified by the Contracting Officer all deliverables and reports furnished to the Government under the resultant contract (including invoices) shall be addressed as follows:

Francine L. Hemphill Contracting Officer HHS/ASPR/AMCG 330 Independence Ave., S.W., Room G640 Washington, DC 20201 Email: francine.hemphill@hhs.gov	George Keane Contracting Officer HHS/ASPR/AMCG 330 Independence Ave., S.W., Room G640 Washington, DC 20201 Email: george.keane@hhs .gov	Adam Clark Contracting Officer Representative HHS/ASPR/AMCG 330 Independence Ave., S.W., Room G640 Washington, DC 20201 Email: adam.clark@hhs.gov	PSC_Invoices@ psc.hhs.gov

a. Contractor invoices/financial reports shall conform to the form, format, and content requirements of the instructions for Invoice/Financing requests and Contract Financial Reporting.

b. Monthly invoices must include the cumulative total expenses to date, adjusted (as applicable) to show any amounts suspended by the USG.

c. The Contractor agrees to immediately notify the CO in writing if there is an anticipated overrun (any amount) or unexpended balance (greater than 10 percent) of the estimated costs for the base period or any option period(s) (See estimated costs under Articles B.2) and the reasons for the variance. These requirements are in addition to the specified requirements of FAR Clause 52.232-20, Limitation of Cost that is incorporated by reference under Article I.1 which states;

Limitation of Cost (Apr 1984)

(a) The parties estimate that performance of this contract, exclusive of any fee, will not cost the Government more than (1) the estimated cost specified in the Schedule or, (2) if this is a cost-sharing contract, the Government's share of the estimated cost specified in the Schedule. The Contractor agrees to use its best efforts to perform the work specified in the Schedule and all obligations under this contract within the estimated cost, which, if this is a cost-sharing contract, includes both the Government's and the Contractor's share of the cost.

(b) The Contractor shall notify the Contracting Officer in writing whenever it has reason to believe that—

(1) The costs the Contractor expects to incur under this contract in the next 60 days, when added to all costs previously incurred, will exceed 75 percent of the estimated cost specified in the Schedule; or

(2) The total cost for the performance of this contract, exclusive of any fee, will be either greater or substantially less than had been previously estimated.

(c) As part of the notification, the Contractor shall provide the Contracting Officer a revised estimate of the total cost of performing this contract.

(d) Except as required by other provisions of this contract, specifically citing and stated to be an exception to this clause—

(1) The Government is not obligated to reimburse the Contractor for costs incurred in excess of (i) the estimated cost specified in the Schedule or, (ii) if this is a cost-sharing contract, the estimated cost to the Government specified in the Schedule; and

(2) The Contractor is not obligated to continue performance under this contract (including actions under the Termination clause of this contract) or otherwise incur costs in excess of the estimated cost specified in the Schedule, until the Contracting Officer (i) notifies the Contractor in writing that the estimated cost has been increased and (ii) provides a revised estimated total cost of performing this contract. If this is a cost-sharing contract, the increase shall be allocated in accordance with the formula specified in the Schedule.

(e) No notice, communication, or representation in any form other than that specified in paragraph (d)(2) of this clause, or from any person other than the Contracting Officer, shall affect this contract's estimated cost to the Government. In the absence of the specified notice, the Government is not obligated to reimburse the Contractor for any costs in excess of the estimated cost or, if this is a cost-sharing contract, for any costs in

excess of the estimated cost to the Government specified in the Schedule, whether those excess costs were incurred during the course of the contract or as a result of termination.

(f) If the estimated cost specified in the Schedule is increased, any costs the Contractor incurs before the increase that are in excess of the previously estimated cost shall be allowable to the same extent as if incurred afterward, unless the Contracting Officer issues a termination or other notice directing that the increase is solely to cover termination or other specified expenses.

(g) Change orders shall not be considered an authorization to exceed the estimated cost to the Government specified in the Schedule, unless they contain a statement increasing the estimated cost.

(h) If this contract is terminated or the estimated cost is not increased, the Government and the Contractor shall negotiate an equitable distribution of all property produced or purchased under the contract, based upon the share of costs incurred by each.

d. The Contractor shall submit an electronic copy of the payment request to the approving official instead of a paper copy. The payment request shall be transmitted as an attachment via e-mail to the address listed above in one of the following formats: MSWord, MS Excel, or Adobe Portable Document Format (PDF). Only one payment request shall be submitted per e-mail and the subject line of the e-mail shall include the Contractor's name, contract number, and unique invoice number.

e. An electronic copy of the payment request shall be uploaded into the designated eRoom (as defined in SECTION F.3 ELECTRONIC SUBMISSION) and an e-mail notification of the upload will be provided to the CO and COR.

f. All invoice submissions shall be in accordance withFAR Clause 52.232-25, Prompt Payment (Oct 2008).

g. Invoices - Cost and Personnel Reporting, and Variances from the Negotiated Budget.

The Contractor agrees to provide a detailed breakdown on invoices of the following cost categories:

a. Direct Labor - List individuals by name, title/position, hourly/annual rate, level of effort (actual hours or % of effort), and amount claimed.

b. Fringe Benefits - Cite rate and amount c. Overhead - Cite rate and amount

d. Materials & Supplies - Include detailed breakdown when total amount is over $1,500.

e. Travel - Identify travelers, dates, destination, purpose of trip, and total breaking out amounts for transportation (plane, car etc), lodging, M&IE. Cite COA, if appropriate. List separately, domestic travel, general scientific meeting travel, and foreign travel.

f. Consultant Fees - Identify individuals, amounts and activities. Cite appropriate COA

g. Subcontracts - Attach subcontractor invoice(s). Cite appropriate COA

h. Equipment - Cite authorization and amount. Cite appropriate COA

i. Other Direct Costs - Include detailed breakdown when total amount is over $1,500.

j. G&A - Cite rate and amount. k. Total Cost

l. Fee

m. Total Cost Plus Fixed Fee

Biweekly invoices must include the cumulative total expenses to date, adjusted (as applicable) to show any amounts suspended by the USG. Nothing in this section discharges the contractor's responsibility to comply with any applicable FAR Parts 30 or 31 clauses' relating tocost reimbursement subcontracts. In order to verify allowability, further breakdown of costs may be requested at the USG's discretion. The Contractor shall subcontract with Firm Fixed Price Contracts to the maximum extent practicable.

Additional instructions and an invoice template are provided in Attachment 2, Invoice/Financing Request Instructions and Contract Financial Reporting Instructions for Cost-Reimbursement Type Contracts. All invoices must be signed by a representative of the contractor authorized to certify listed charges are accurate and comply with government regulations. Invoices should be submitted electronically (in accordance with ARTICLE F.3., (ELECTRONIC SUBMISSION) Only with signature.

If applicable, the Contractor shall convert any foreign currency amount(s) in the biweekly invoice to U.S. dollars each month, on the 1st and 15th of the month, using the foreign exchange rate index published on www.federalreserve.gov. Payment of invoices is subject to the U.S. dollar limits within the Total Estimated Cost, the Total Fixed Fee and the Total Estimated Cost Plus Fixed Fee of each active CLIN(s) in Section B under the contract.

ARTICLE G.6. REIMBURSEMENT OF COST

1) The Government shall reimburse the Contractor the cost determined by the Contracting Officer to be allowable (hereinafter referred to as allowable cost) in accordance with FAR Clause 52.216-7, Allowable Cost and Payment incorporated by reference in Section I, Contract Clauses, of this contract, and FAR Subpart 31.2. Examples of allowable costs include, but are not limited to, the following:

   a) All direct materials and supplies that are used in performing the work provided for under the contract, including those purchased for subcontracts and purchase orders.

   b) All direct labor, including supervisory, that is properly chargeable directly to the contract, plus fringe benefits.

   c) All other items of cost budgeted for and accepted in the negotiation of this basic contract or modifications thereto.

   d) Travel costs including per diem or actual subsistence for personnel while in an actual travel status in direct performance of the work and services required under this contract subject to the following:

      (i) Air travel shall be by the most direct route using "air coach" or "air tourist" (less than first class) unless it is clearly unreasonable or impractical (e.g., not available for reasons other than avoidable delay in making reservations, would require circuitous routing or entail additional expense offsetting the savings on fare, or would not make necessary connections).

(ii) Rail travel shall be by the most direct route, first class with lower berth or nearest equivalent.

(iii) Costs incurred for lodging, meals, and incidental expenses shall be considered reasonable and allowable to the extent that they do not exceed on a daily basis the per diem rates set forth in the Federal Travel Regulation (FTR).

(iv) Travel via privately owned automobile shall be reimbursed at not more than the current General Services Administration (GSA) FTR established mileage rate.

ARTICLE G.7. INDIRECT COST RATE

The billing rate for the option period will be based on the incurred cost submission for the previous calendar year, subject to Government audit adjustments. Final rate proposals must be sent to the Contracting Officer, within 6 months subsequent to the fiscal year end. (See also FAR Clause 52.216-7 incorporated herein).

In no event shall the final amount reimburseable for Fringe Benefits exceed a ceiling of [***]% ot total salaries and wages. In no event shall the final amount reimbursable for Indirect Costs exceed a ceiling of [***]% of all allowable direct costs and fringe benefits. These indirect cost ceilings will be reevaluated by the Contracting Officer at the conculsion of the base period in the event of a successful In-Process Review that will lead to the exercise of one or more option performance segments.

The billing rate for the option periods will be based on the incurred cost submission for the previous calendar year, subject to Government audit adjustments. Final rate proposals must be sent to the Contracting Officer, within 6 months subsequent to the fiscal year end. (See also FAR Clause 52.216-7 incorporated herein).

The Government is not obligated to pay any additional amount should the final indirect cost rate exceed these negotiated ceiling rates. In the event the final indirect cost rates are less than these negotiated ceiling rates, the Government's obligation shall be reduced to conform to the lower rate.

Any costs over and above this cost ceiling shall not be reimbursed under this contract or any other Government contract, grant or cooperative agreement.

The Contractor shall complete all work in accordance with the Statement of Work, terms and conditions of this contract.

ARTICLE G.8. POST AWARD EVALUATION OF CONTRACTOR PERFORMANCE

1. Contractor Performance Evaluations

Interim and final evaluations of Contractor performance will be prepared on this contract in accordance with FAR Subpart 42.15. The final performance evaluation will be prepared at the time of completion of work. In addition to the final evaluation, an interim evaluation shall be submitted annually.

Interim and final evaluations will be provided to the Contractor as soon as practicable after completion of the evaluation. The Contractor will be permitted thirty days to review the document and to submit additional information or a rebutting statement. If agreement cannot be reached between the parties, the matter will be referred to an individual one level above the Contracting Officer whose decision will be final.

Copies of the evaluations, Contractor responses, and review comments, if any, will be retained as part of the contract file, and may be used to support future award decisions.

2. Electronic Access to Contractor Performance Evaluations

Contractors that have Internet capability may access evaluations through a secure Web site for review and comment by completing the registration form that can be obtained at the following address:

http://www.cpars.csd.disa.mil/cparsmain.htm

The registration process requires the Contractor to identify an individual that will serve as a primary contact and who will be authorized access to the evaluation for review and comment. In addition, the Contractor will be required to identify an alternate contact that will be responsible for notifying the cognizant contracting official in the event the primary contact is unavailable to process the evaluation within the required 30-day time frame.

ARTICLE G.9. CONTRACT COMMUNICATIONS/CORRESPONDENCE (JULY 1999)

The Contractor shall identify all correspondence, reports, and other data pertinent to this contract by imprinting the contract number from Page 1 of the contract.

ARTICLE G.10. GOVERNMENT PROPERTY

1. In addition to the requirements of the clause, GOVERNMENT PROPERTY, incorporated in SECTION I of this contract, the Contractor shall comply with the provisions of HHS Publication, "HHS Contracting Guide for Control of Government Property," which is incorporated into this contract by reference. This document can be accessed at:

http://www.hhs.gov/about/hhs-manuals/index.html (HHS Logistics Management Manual)

Among other issues, this publication provides a summary of the Contractor's responsibilities regarding purchasing authorizations and inventory and reporting requirements under the contract.

2. Notwithstanding the provisions outlined in the HHS Publication, "HHS Contracting Guide for Control of Government Property," which is incorporated in this contract in paragraph 1. above, the Contractor shall use the form entitled, "Report of Government Owned, Contractor Held Property" for submitting summary reports required under this contract, as directed by the Contracting Officer or his/her designee. This form attached as Attachment 7 to this contract (SECTION J- LIST OF ATTACHMENTS).

3. Title will vest in the Government for equipment purchased as a direct cost.

ARTICLE G.11. EXERCISE OF OPTIONS

Unless the Government exercises its option pursuant to the Option Clause set forth in Section I, Article I.2, the contract will consist only of **CLIN 0001** of the Statement of Work, Deliverables and Requirements as defined in Sections C, F and J of the contract. Pursuant

to **FAR Clause 52.217-9 (Option to Extend the Term of the Contract)** set forth in Section I of this contract, under Article I.2, the Government may, by unilateral contract modification, require the Contractor to perform **the additional CLINs listed in Section B, Article B.3.,** and as also defined in Sections C, F and J of this contract. If the Government exercises an option, written notice must be given to the Contractor within 30 days after the Government has completed its analysis of the deliverables associated with the applicable in-process programmatic review*;* and the Government must give the Contractor a preliminary written notice of its intent to exercise the option at least 30 days before the contract expires. The amount of the contract may then be increased as set forth in Section B, Article B.3 provided that Government and Contractor funds are available.

SECTION H - SPECIAL CONTRACT REQUIREMENTS

The Contractor, depending upon the nature of the work, is responsible for following the provisions below in conducting its own work under this contract. The Contractor also is responsible for incorporating these provisions into any subcontract awarded, if applicable to the specific nature of the work in the subcontract. Accordingly, those provisions shall be flowed-down as applicable.

ARTICLE H.1 CLINICAL AND NON-CLINICAL TERMS OF AWARD

BARDA has a responsibility to obtain documentation concerning mechanisms and procedures that are in place to protect the safety of participants and animals in BARDA funded clinical trials and non-clinical studies. Therefore, the Contractor shall develop a protocol for each clinical trial *and* non-clinical study funded under this contract and submit all such protocols and protocol amendments to the Contracting Officer's Representative (COR) for evaluation and comment. Approval by the COR is required before work under a protocol may begin. The COR comments will be forwarded to the Contractor within eight (8) business days. The Contractor must address, in writing, all concerns (*e.g.* study design, safety, regulatory, ethical, and conflict of interest) noted by the COR.

If the draft protocols are to be submitted to the FDA, BARDA review shall occur before submission, pursuant to the terms set forth by ARTICLE F.2 of this contract. The Contractor shall consider revising their protocols to address BARDA's concerns and recommendations prior to FDA submission. The Contractor must provide BARDA with a copy of FDA submissions, within the time frame set forth by ARTICLE F.2 of this contract.

Execution of clinical and non-clinical studies requires written authorization from the Government. The USG will provide written authorization to the Contractor upon either 1) receiving documentation in which all COR comments have been satisfactorily addressed; or 2) receiving documentation that the FDA has reviewed and commented on the protocol.

The Government shall have rights to all protocols, data resulting from execution of these protocols, and final reports funded by BARDA under this contract, as set forth in the FAR clauses referenced in PART II of this contract. The Government reserves the right to request that the Contractor provide any contract deliverable in a non-proprietary form to ensure the Government has the ability to review and distribute the deliverables as the Government deems necessary.

Important information regarding performing human subject research is available at
http://www3.niaid.nih.gov/healthscienc e/clinicalstudies/

Any updates to technical reports are to be addressed in the Monthly and Annual Progress Reports. The Contractor shall advise the Contracting Officer's Representative or designee in writing and via electronic communication in a timely manner of any issues potentially affecting contract performance.

1. Non-Clinical Terms of Award

These Non-Clinical Terms of Award detail an agreement between the Biomedical Advanced Research and Development Authority (BARDA) and the Contractor; they apply to all grants and contracts that involve non-clinical research.

a. Safety and Monitoring Issues

i. PHS Policy on Humane Care and use of Laboratory Animals

Before award and then with the annual progress report, the Contractor must submit to BARDA a copy of the current Institutional Animal Care and Use Committees (IACUC) documentation of continuing review and approval and the Office of Laboratory Animal Welfare (OLAW) federal wide assurance number for the institution or site.

If other institutions are involved in the research (e.g., a multicenter trial or study), each institution's IACUC must review and approve the protocol. They must also provide BARDA initial and annual documentation of continuing review and approval and federal wide assurance number.

The Contractor must ensure that the application, as well as all protocols, are reviewed by the performing institution's IACUC.

To help ensure the safety of animals used in BARDA-funded studies, the Contractor must provide BARDA copies of documents related to all major changes in the status of ongoing protocols, including the following:

- All amendments or changes to the protocol, identified by protocol version number, date, or both and date it is valid.
- All material changes in IACUC policies and procedures, identified by version number, date, and all required signatories (if applicable).
- Termination or temporary suspension of the study(ies) for regulatory issues.
- Termination or temporary suspension of the protocol.
- Any change that is made in the specific IACUC approval for the indicated study(ies).
- Any other problems or issues that could affect the scientific integrity of the study(ies), i.e., fraud, misrepresentation, misappropriation of funds, etc.

Contractor must notify BARDA of any of the above changes within five (5) working days from the time the Contractor becomes aware of such changes by email or fax, followed by a letter signed by the institutional business official, detailing notification of the change of status to the local IACUC and a copy of any responses from the IACUC.

If a non-clinical protocol has been reviewed by an institutional biosafety committee (IBC) or the NIH Recombinant DNA Advisory Committee (RAC), the Contractor must provide information about the initial and ongoing review and approval, if any. See the NIH Guidelines for Research Involving Recombinant DNA Molecules.

ii. Non-Clinical Data and Safety Monitoring Requirements

BARDA strongly recommends continued safety monitoring for all non-clinical studies of investigational drugs, devices, or biologics. FDA expects non-clinical studies to include safety in addition to efficacy. The Contractor should consider evaluation of clinical relevant safety markers in the pivotal and non-pivotal, non-clinical studies. In preparation for clinical trials of licensed or not yet licensed products, it is imperative that BARDA-sponsored studies of any type measure the risk and safety parameters that are elicited and provide a safety profile from the studies for future human risk assessment.

A risk is minimal where the probability and magnitude of harm or discomfort anticipated in the proposed research are not greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests. For example, the risk of drawing a small amount of blood from a healthy subject for research purposes is no greater than the risk of doing so as part of a routine physical examination (45 CFR 46.102(i)).

BARDA will work with the Contractor on decisions regarding the type and extent of safety data accrual to be employed before the start of efficacy or safety studies.

The Contractor shall inform BARDA of any upcoming site visits and/or audits of CRO facilities funded under this effort. BARDA reserves the right to accompany the Contractor on site visits and/or audits of CRO's as BARDA deems necessary.

b. BARDA Review Process before Non-Clinical study Execution Begins

BARDA is under the same policy-driven assurances as NIH in that it has a responsibility to ensure that mechanisms and procedures are in place to protect the safety and welfare of animals used in BARDA-funded non-clinical trials. Therefore, before study execution, the Contractor must provide the following (as applicable) for review and comment by BARDA:

- IACUC approved (signed) non-clinical research protocol identified by version number, date, or both, including details of study design, euthanasia criteria, proposed interventions, and exclusion criteria.
- For non-pivotal mouse studies, the Contractor will provide an annual animal care and use protocol.
- Documentation of IACUC approval, including OLAW federal wide number, IACUC registration number, and IACUC name.
- Contractor should reduce the number of animals required for a study using power of statistics.
- Plans for the management of side effects, rules for interventions and euthanasia criteria.
- Procedures for assessing and collecting safety data were appropriate.

- If a study is contracted through Contract Research Organizations (CROs), work orders and service agreements the Contractor shall assure an integrated safety documentation plan is in place for the study site, pharmacy service records on the dosing material to be used and excipients, and laboratory services (including histopathology).
- Documentation that the Contractor and all required staff responsible for the conduct of the research have received training in the protection and handling of animals, or that the CRO has the required documentation.
- Purchasing of animals and/or other supplies for non-clinical studies funded in part or in whole by BARDA requires written approval by the Contracting Officer in accordance with the contract. The Contractor must have the ability to return/re-sell animals, at purchase price, to distributor or a third part, in the event that the Contracting Officer Authorization is not granted.
- Provide justification for whether studies require good laboratory practice (GLP) conditions.
- Provide justification for whether studies will be classified as non-pivotal or pivotal studies.

Documentation of each of the above items shall be submitted to BARDA for evaluation and comment in conjunction with the protocol. Execution of non-clinical studies requires written authorization from the Contracting Officer in accordance with this section of the contract.

c. References

Public Health Service Policy on Humane Care and Use of Laboratory Animals:

http://grants.nih.gov/grants/olaw/InvestigatorsNeed2Know.pdf

USDA Animal Welfare Act:

https://www.nal.usda.gov/awic/animal-welfare-act

2. Clinical Terms of Award

These Clinical Terms of Award detail an agreement between the Government and the Contractor; they apply to all grants and contracts that involve clinical research.

Draft protocols for each clinical study will be submitted to BARDA for evaluation and comment. BARDA comments will be addressed and/or incorporated into the draft protocol prior to submission to the FDA for comment, if required.

BARDA shall have unlimited rights to all protocols, data generated from the execution of these protocols, and final reports, funded by BARDA under this contract, as defined in Rights in Data Clause in FAR 52.227-14. BARDA reserves the right to request that the Contractor provide any contract deliverable in a without any restrictive legends to ensure BARDA has the ability to review and distribute the deliverables, as BARDA deems necessary.

a. Safety and Monitoring Issues

i. Institutional Review Board or Independent Ethics Committee Approval

Before award and then with the annual progress report, the Contractor must submit to BARDA a copy of the current IRB-or IEC-approved informed consent document, documentation of continuing review and approval and the OHRP federal wide assurance number for the institution or site.

If other institutions are involved in the research (e.g., a multicenter clinical trial or study), each institution's IRB or IEC must review and approve the protocol. They must also provide BARDA initial and annual documentation of continuing review and approval, including the current approved informed consent document and federal wide number.

The Contractor must ensure that the application as well as all protocols are reviewed by their IRB or IEC.

To help ensure the safety of participants enrolled in BARDA-funded studies, the Contractor must provide BARDA copies of documents related to all major changes in the status of ongoing protocols, including the following:

- All amendments or changes to the protocol, identified by protocol version number, date, or both and dates it is valid.
- All changes in informed consent documents, identified by version number, dates, or both and dates it is valid.
- Termination or temporary suspension of patient accrual.
- Termination or temporary suspension of the protocol.
- Any change in IRB approval.
- Any other problems or issues that could affect the participants in the studies.

The Contractor must notify BARDA through the COR and CO of any of the above changes within five (5) working days by email or fax, followed by a letter signed by the institutional business official, detailing notification of the change of status to the local IRB and a copy of any responses from the IRB or IEC.

If a clinical protocol has been reviewed by an institutional biosafety committee (IBC) or the NIH Recombinant DNA Advisory Committee (RAC), the Contractor must provide information about the initial and ongoing review and approval, if any. See the NIH Guidelines for Research Involving Recombinant DNA Molecules.

ii. Data and Safety Monitoring Requirements

BARDA strongly recommends independent safety monitoring for clinical trials of investigational drugs, devices, or biologics; clinical trial of licensed products; and clinical research of any type involving more than minimal risk to volunteers. Independent monitoring can take a variety of forms. Phase III clinical trials must be reviewed by an independent data and safety monitoring board (DSMB); other trials may require DSMB oversight as well. The Contractor shall inform BARDA of any upcoming site visits and/or audits of CRO facilities funded under this effort. BARDA reserves the right to accompany the Contractor on site visits and/or audits of CROs as BARDA deems necessary.

A risk is minimal where the probability and magnitude of harm or discomfort anticipated in the proposed research and not greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests. For examples, the risk of drawing a small amount of blood from a healthy individual for research purposes is no greater than the risk of doing so as part of a routine physical examination (45 CFR 46.102I).

Final decisions regarding the type of monitoring to be used must be made jointly by BARDA and the Contractor before enrollment starts. Discussions with the responsible BARDA Project Officer regarding appropriate safety monitoring and approval of the final monitoring plan by BARDA must occur before patient enrollment begins and may include discussions about the appointment of one of the following.

- **Independent Safety Monitor** – a physician or other appropriate expert who is independent of the study and available in real time to review and recommend appropriate action regarding adverse events and other safety issues.
- **Independent Monitoring Committee (IMC) or Safety Monitoring Committee (SMC)** – a small group of independent investigators and biostatisticians who review data from a particular study.
- **Data and Safety Monitoring Board** – an independent committee charged with reviewing safety and trial progress and providing advice with respect to study continuation, modification, and termination. The Contractor may be required to use an established BARDA DSMB or to organize an independent DSMB. All phase III clinical trials must be reviewed by a DSMB; other trials may require DSMB oversight as well. Please refer to: NIAID Principles for Use of a Data and Safety Monitoring Board (DSMB) For Oversight of Clinical Trials Policy

When a monitor or monitoring board is organized, a description of it, its charter or operating procedures (including a proposed meeting schedule and plan for review of adverse events), and roster and *curriculum vitae* from all members must be submitted to and approved by BARDA before enrollment starts. The Contractor will also ensure that the monitors and board members report any conflicts of interest and the Contractor will maintain a record of this. The Contractor will share conflict of interest reports with BARDA.

Additionally, the Contractor must submit written summaries of all reviews conducted by the monitoring group to the BARDA within thirty (30) days of reviews or meetings.

iii. BARDA Protocol Review Process Before Patient Enrollment Begins

BARDA has a responsibility to ensure that mechanisms and procedures are in place to protect the safety of participants in BARDA-supported clinical trials. Therefore, before patient accrual or participant enrollment, the Contractor must ensure the following (as applicable) are in place at each participating institution, prior to patient accrual or enrollment:

- IRB- or IEC-approved clinical research protocol identified by version number, date, or both, including details of study design, proposed interventions, patient eligibility, and exclusion criteria.
- Documentation of IRB or IEC approval, including OHRP federal wide number, IRB or IEC registration number, and IRB and IEC name.
- IRB- or IEC- approved informed consent document, identified by version number, date, or both and dates it is valid.

- Plans for the management of side effects.
- Procedures for assessing and reporting adverse events.
- Plans for data and safety monitoring (see above) and monitoring of the clinical study site, pharmacy, and laboratory.
- Documentation that the Contractor and all study staff responsible for the design or conduct of the research have received training in the protection of human subjects.

Documentation to demonstrate that each of the above items are in place shall be submitted to the BARDA) for evaluation and comment in conjunction with the protocol. Execution of clinical studies requires written authorization from BARDA in accordance with this section of this contract.

iv. Investigational New drug or Investigational Device Exemption Requirements

Consistent with federal regulations, clinical research projects involving the use of investigational therapeutics, vaccines, or other medical interventions (including licensed products and devices for a purpose other than that for which they were licensed) in humans under a research protocol must be performed under a Food and Drug Administration (FDA) investigational new drug (IND) or investigational device exemption (IDE).

Exceptions must be granted in writing by FDA. If the proposed clinical trial will be performed under an IND or IDE, the Contractor must provide BARDA with the name and institution of the IND or IDE sponsor, the date the IND or IDE was filed with FDA, the FDA IND or IDE number, any written comments from FDA, and the written responses to those comments.

Unless FDA notifies Contractor otherwise, The Contractor must wait thirty (30) calendar days from FDA receipt of an initial IND or IDE application before initiating a clinical trial.

The Contractor must notify BARDA if the FDA places the study on clinical hold and provide BARDA any written comments from FDA, written responses to the comments, and documentation in writing that the hold has been lifted. The Contractor must not use grant or contract funds during a clinical hold to fund clinical studies that are on hold. The Contractor must not enter into any new financial obligations related to clinical activities for the clinical trial on clinical hold.

v. Required Time-Sensitive Notification

Under an IND or IDE, the sponsor must provide FDA safety reports of serious adverse events. Under these Clinical Terms of Award, the Contractor must submit copies to the responsible Contracting Officer's Representative (COR) as follows:

i. Expedited safety report of unexpected or life-threatening experience or death:

A copy of any report of unexpected or life-threatening experience or death associated with the use of an IND drug, which must be reported to FDA by telephone or fax as soon as possible but no later than seven (7) days after the IND sponsor's receipt of the information, must be submitted to the COR within 24 hours of FDA notification.

ii. Expedited safety reports of serious and unexpected adverse experiences:

A copy of any report of unexpected and serious adverse experience associated with use of an IND drug or any finding from tests in laboratory animals that suggests a significant risk for human subjects, which must be reported in writing to FDA as soon as possible but no later than 15 day after the IND sponsor's receipt of the information, must be submitted to the COR within 24 hours of FDA notification.

iii. IDE reports of unanticipated adverse device effect:

A copy of any reports of unanticipated adverse device effect submitted to FDA must be submitted to the COR within 24 hours of FDA notification.

iv. Expedited safety reports:

Sent to the COR concurrently with the report to FDA.

v. Other adverse events documented during the course of the trial should be included in the annual IND or IDE report and reported to BARDA annually.

In case of problems or issues, the Contracting Officer's Representative will contact the Contractor within ten (10) working days by email or fax, followed within thirty (30) calendar days by an official letter to the Contractor's Project Manager, with a copy to the institutions' office of sponsored programs, listing issues and appropriate actions to be discussed.

vi. Safety reporting for research not performed under an IND or IDE.

Final decisions regarding ongoing safety reporting requirements for research not performed under an IND or IDE must be made jointly by the Contracting Officer's Representative and the Contractor.

ARTICLE H.2. PROTECTION OF HUMAN SUBJECTS, HHSAR 352.270-4(b) (December 2015)

(a) The Contractor agrees that the rights and welfare of human subjects involved in research under this contract shall be protected in accordance with **45 CFR part 46** and with the Contractor's current Federal-wide Assurance (FWA) on file with the Office for Human Research Protections (OHRP), Department of Health and Human Services. The Contractor further agrees to provide certification at least annually that the Institutional Review Board has reviewed and approved the procedures, which involve human subjects in accordance with **45 CFR part 46** and the Assurance of Compliance.

(b) The Contractor shall bear full responsibility for the performance of all work and services involving the use of human subjects under this contract and shall ensure that work is conducted in a proper manner and as safely as is feasible. The parties hereto agree that the Contractor retains the right to control and direct the performance of all work under this contract. Nothing in this contract shall create an agency or employee relationship between the Government and the Contractor, or any subcontractor, agent or employee of the Contractor, or any other person, organization, institution, or group of any kind whatsoever. The Contractor agrees that it has entered into this contract and will discharge its obligations, duties, and undertakings and the work pursuant thereto, whether requiring professional judgment or otherwise, as an independent Contractor without creating liability on the part of the Government for the acts of the Contractor or its employees.

(c) Contractors involving other agencies or institutions in activities considered to be engaged in research involving human subjects must ensure that such other agencies or institutions obtain their own FWA if they are routinely engaged in research involving human subjects or ensure that such agencies or institutions are covered by the Contractors' FWA via designation as agents of the institution or via individual investigator agreements (see OHRP website at:http://www.hhs.gov/ohrp/policy/guidanceonalternativetofwa.pdf).

(d) If at any time during the performance of this contract the Contractor is not in compliance with any of the requirements and or standards stated in paragraphs (a) and (b) above, the Contracting Officer may immediately suspend, in whole or in part, work and further payments under this contract until the Contractor corrects the noncompliance. The Contracting Officer may communicate the notice of suspension by telephone with confirmation in writing. If the Contractor fails to complete corrective action within the period of time designated in the Contracting Officer's written notice of suspension, the Contracting Officer may, after consultation with OHRP, terminate this contract in whole or in part.

ARTICLE H.3. HUMAN MATERIALS (ASSURANCE OF OHRP COMPLIANCE)

The acquisition and supply of all human specimen material (including fetal material) used under this contract shall be obtained by the Contractor in full compliance with applicable Federal, State and Local laws and the provisions of the Uniform Anatomical Gift Act in the United States, and no undue inducements, monetary or otherwise, will be offered to any person to influence their donation of human material.

The Contractor shall provide written documentation that all human materials obtained as a result of research involving human subjects conducted under this contract, by collaborating sites, or by subcontractors identified under this contract, were obtained with prior approval by the Office for Human Research Protections (OHRP) of an Assurance to comply with the requirements of 45 CFR 46 to protect human research subjects. This restriction applies to all collaborating sites without OHRP- approved Assurances, whether domestic or foreign, and compliance must be ensured by the Contractor.

Provision by the Contractor to the Contracting Officer of a properly completed "Protection of Human Subjects Assurance Identification/IRB Certification/Declaration of Exemption", Form OMB No. 0990-0263(formerly Optional Form 310), certifying IRB review and approval of the protocol from which the human materials were obtained constitutes the written documentation required. The human subject certification can be met by submission of a self-designated form provided that it contains the information required by the "Protection of Human Subjects Assurance Identification/IRB Certification/Declaration of Exemption", Form OMB No. 0990-0263 (formerly Optional Form 310).

ARTICLE H.5. CARE OF LIVE VERTEBRATE ANIMALS, HHSAR 352.270-5 (October 2009)

a. Before undertaking performance of any contract involving animal-related activities where the species is regulated by USDA, the Contractor shall register with the Secretary of Agriculture of the United States in accordance with 7 U.S.C. 2136 and 9 CFR sections 2.25 through 2.28. The Contractor shall furnish evidence of the registration to the Contracting Officer.

b. The Contractor shall acquire vertebrate animals used in research from a dealer licensed by the Secretary of Agriculture under 7 U.S.C. 2133 and 9 CFR Sections 2.1-2.11, or from a source that is exempt from licensing under those sections.

c. The Contractor agrees that the care, use and intended use of any live vertebrate animals in the performance of this contract shall conform with the Public Health Service (PHS) Policy on Humane Care of Use of Laboratory Animals (PHS Policy), the current Animal Welfare Assurance (Assurance), the Guide for the Care and Use of Laboratory Animals (National Academy Press, Washington, DC) and the pertinent laws and regulations of the United States Department of Agriculture (see 7 U.S.C. 2131 et seq. and 9 CFR Subchapter A, Parts 1-4). In case of conflict between standards, the more stringent standard shall govern.

d. If at any time during performance of this contract, the Contracting Officer determines, in consultation with the Office of Laboratory Animal Welfare (OLAW), National Institutes of Health (NIH), that the Contractor is not in compliance with any of the requirements and standards stated in paragraphs (a) through (c) above, the Contracting Officer may immediately suspend, in whole or in part, work and further payments under this contract until the Contractor corrects the noncompliance. Notice of the suspension may be communicated by telephone and confirmed in writing. If the Contractor fails to complete corrective action within the period of time designated in the Contracting Officer's written notice of suspension, the Contracting Officer may, in consultation with OLAW, NIH, terminate this contract in whole or in part, and the Contractor's name may be removed from the list of those contractors with approved Assurances.

Note: The Contractor may request registration of its facility and a current listing of licensed dealers from the Regional Office of the Animal and Plant Health Inspection Service (APHIS), USDA, for the region in which its research facility is located. The location of the appropriate APHIS Regional Office, as well as information concerning this program may be obtained by contacting the Animal Care Staff, USDA/APHIS, 4700 River Road, Riverdale, Maryland 20737 (E-mail: ace@aphis.usda.gov; Web site: (http://www.aphis.usda.gov/animal_welfare).

ARTICLE H.6. ANIMAL WELFARE

All research involving live, vertebrate animals shall be conducted in accordance with the Public Health Service Policy on Humane Care and Use of Laboratory Animals. This policy may be accessed at: http://grants1.nih.gov/grants/olaw/references/phspol.htm

ARTICLE H.7. INFORMATION ON COMPLIANCE WITH ANIMAL CARE REQUIREMENTS

Registration with the U. S. Dept. of Agriculture (USDA) is required to use regulated species of animals for biomedical purposes. USDA is responsible for the enforcement of the Animal Welfare Act (7 U.S.C. 2131 et. seq.), http://www.nal.usda.gov/awic/legislat/awa.htm.

The Public Health Service (PHS) Policy is administered by the Office of Laboratory Animal Welfare (OLAW) http://grants2.nih.gov/grants/olaw/olaw.htm. An essential requirement of the PHS Policy http://grants2.nih.gov/grants/olaw/references/phspol.htm is that every institution using live vertebrate animals must obtain an approved assurance from OLAW before they can receive funding from any component of the U. S. Public Health Service.

The PHS Policy requires that Assured institutions base their programs of animal care and use on the Guide for the Care and Use of Laboratory Animals http://www.nap.edu/readingroom/books/labrats/ and that they comply with the regulations (9 CFR, Subchapter A)http://www.nal.usda.gov/awic/legislat/usdaleg1.htm issued by the U.S. Department of Agriculture (USDA) under the Animal Welfare Act. The Guide may differ from USDA regulations in some respects. Compliance with the USDA regulations is an absolute requirement of this Policy.

The Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) http://www.aaalac.org is a professional organization that inspects and evaluates programs of animal care for institutions at their request. Those that meet the high standards are given the accredited status. As of the 2002 revision of the PHS Policy, the only accrediting body recognized by PHS is the AAALAC. While AAALAC Accreditation is not required to conduct

biomedical research, it is highly desirable. AAALAC uses the Guide as their primary evaluation tool. They also use the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching. It is published by the Federated of Animal Science Societies http://www.fass.org.

ARTICLE H.8. REQUIREMENTS FOR ADEQUATE ASSURANCE OF PROTECTION OF VERTEBRATE ANIMAL SUBJECTS

The PHS Policy on Humane Care and Use of Laboratory Animals requires that applicant organizations proposing to use vertebrate animals file a written Animal Welfare Assurance with the Office for Laboratory Animal Welfare (OLAW), establishing appropriate policies and procedures to ensure the humane care and use of live vertebrate animals involved in research activities supported by the PHS. The PHS Policy stipulates that an applicant organization, whether domestic or foreign, bears responsibility for the humane care and use of animals in PHS-supported research activities. Also, the PHS policy defines "animal" as "any live, vertebrate animal used, or intended for use, in research, research training, experimentation, biological testing or for related purposes." This Policy implements and supplements the U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training, and requires that institutions use the Guide for the Care and Use of Laboratory Animals as a basis for developing and implementing an institutional animal care and use program. This Policy does not affect applicable State or local laws or regulations that impose more stringent standards for the care and use of laboratory animals. All institutions are required to comply, as applicable, with the Animal Welfare Act as amended (7 USC 2131 et. seq.) and other Federal statutes and regulations relating to animals. These documents are available from the Office of Laboratory Animal Welfare, National Institutes of Health, Bethesda, MD 20892, (301) 496-7163. See http://grants.nih.gov/grants/OLAW/olaw.htm

No PHS supported work for research involving vertebrate animals will be conducted by an organization, unless that organization is operating in accordance with an approved Animal Welfare Assurance and provides verification that the Institutional Animal Care and Use Committee (IACUC) has reviewed and approved the proposed activity in accordance with the PHS policy. Applications may be referred by the PHS back to the institution for further review in the case of apparent or potential violations of the PHS Policy. No award to an individual will be made unless that individual is affiliated with an assured organization that accepts responsibility for compliance with the PHS Policy. Foreign applicant organizations applying for PHS awards for activities involving vertebrate animals are required to comply with PHS Policy or provide evidence that acceptable standards for the humane care and use of animals will be met. Foreign applicant organizations are not required to submit IACUC approval, but should provide information that is satisfactory to the USG to provide assurances for the humane care of such animals.

ARTICLE H.9. APPROVAL OF REQUIRED ASSURANCE BY OLAW

Under governing regulations, federal funds which are administered by the Department of Health and Human Services, Office of Biomedical Advanced Research and Development Authority (BARDA) shall not be expended by the Contractor for research involving live vertebrate animals, nor shall live vertebrate animals be involved in research activities by the Contractor under this award unless a satisfactory assurance of compliance with 7 U.S.C. 2316 and 9 CFR Sections 2.25-2.28 is submitted within 30 days of the date of this award and approved by the Office of Laboratory Animal Welfare (OLAW). Each performance site (if any) must also assure compliance with 7 U.S.C. 2316 and 9 CFR Sections 2.25-2.28 with the following restriction: Only activities which do not directly involve live vertebrate animals (i.e. are clearly severable and independent from those activities that do involve live vertebrate animals) may be conducted by the Contractor or individual performance sites pending OLAW approval of their respective assurance of compliance with 7 U.S.C. 2316 and 9 CFR Sections 2.25-2.28. Additional information regarding OLAW may be obtained via the Internet at http://grants2.nih.gov/grants/olaw/references/phspol.htm

ARTICLE H.10. REPORTING MATTERS INVOLVING FRAUD, WASTE AND ABUSE

Anyone who becomes aware of the existence or apparent existence of fraud, waste and abuse in BARDA funded programs should report such matters to the HHS Inspector General's Office in writing or on the Inspector General's Hotline. The toll free number is 1-800-HHS-TIPS (1-800-447-8477). All telephone calls will be handled confidentially. The e-mail address is Htips@os.dhhs.gov and the mailing address is:

Office of Inspector General
Department of Health and Human Services
TIPS HOTLINE
P.O. Box 23489 Washington, D.C. 20026

ARTICLE H.11. PROHIBITION ON CONTRACTOR INVOLVEMENT WITH TERRORIST ACTIVITIES

The Contractor acknowledges that U.S. Executive Orders and Laws, including but not limited to E.O. 13224 and P.L. 107-56, prohibit transactions with, and the provision of resources and support to, individuals and organizations associated with terrorism. It is the legal responsibility of the Contractor to ensure compliance with these Executive Orders and Laws. This clause must be included in all subcontracts issued under this contract.

ARTICLE H.12. IDENTIFICATION AND DISPOSITION OF DATA

The Contractor will be required to provide certain data generated under this contract to the Department of Health and Human Services (DHHS). DHHS reserves the right to review any other data determined by DHHS to be relevant to this contract. The Contractor shall keep copies of all data required by the Food and Drug Administration (FDA) relevant to this contract for the time specified by the FDA.

ARTICLE H.13. EXPORT CONTROL NOTIFICATION

Contractors are responsible for ensuring compliance with all export control laws and regulations that may be applicable to the export of and foreign access to their proposed technologies. Contractors may consult with the Department of State with any questions regarding the International Traffic in Arms Regulation (ITAR) (22 CRF Parts 120-130) and /or the Department of Commerce regarding the Export Administration Regulations (15 CRF Parts 730-774).

ARTICLE H.14. CONFLICT OF INTEREST

The Contractor represents and warrants that, to the best of the Contractor's knowledge and belief, there are no relevant facts or circumstances which could give rise to an organizational conflict of interest, as defined in FAR 2.101 and Subpart 9.5, or that the Contractor has disclosed all such relevant information. Prior to commencement of any work, the Contractor agrees to notify the Contracting Officer promptly that, to the best of its knowledge and belief, no actual or potential conflict of interest exists or to identify to the Contracting Officer any actual or potential conflict of interest the firm may have. In emergency situations, however, work may begin but notification shall be made within five (5) working days. The Contractor agrees that if an actual or potential organizational conflict of interest is identified during performance, the Contractor shall promptly make a full disclosure in writing to the Contracting Officer. This disclosure shall include a description of actions which the Contractor has taken or proposes to take, after consultation with the Contracting Officer, to avoid, mitigate, or neutralize the actual or potential conflict of interest. The Contractor shall continue performance until notified by the Contracting Officer of any contrary action to be taken. Remedies include termination of this contract for convenience, in whole or in

part, if the Contracting Officer deems such termination necessary to avoid an organizational conflict of interest. If the Contractor was aware of a potential organizational conflict of interest prior to award or discovered an actual or potential conflict after award and did not disclose it or misrepresented relevant information to the Contracting Officer, the USG may terminate the contract for default, debar the Contractor from USG contracting, or pursue such other remedies as may be permitted by law or this contract.

ARTICLE H.15. INSTITUTIONAL RESPONSIBILITY REGARDING INVESTIGATOR FINANCIAL CONFLICTS OF INTEREST

The Contractor shall comply with the requirements of 45 CFR Part 94, Responsible Prospective Contractors, which promotes objectivity in research by establishing standards to ensure that Investigators (defined as the project director or principal Investigator and any other person, regardless of title or position, who is responsible for the design, conduct, or reporting of research funded under BARDA contracts, or proposed for such funding, which may include, for example, collaborators or consultants) will not be biased by any Investigator financial conflicts of interest.

If the failure of an Investigator to comply with an Institution's financial conflicts of interest policy or a financial conflict of interest management plan appears to have biased the design, conduct, or reporting of the BARDA-funded research, the Contractor must promptly notify the Contracting Officer of the corrective action taken or to be taken. The Contracting Officer will consider the situation and, as necessary, take appropriate action or refer the matter to the Contractor for further action, which may include directions to the Contractor on how to maintain appropriate objectivity in the BARDA-funded research project.

The Contracting Officer and/or HHS may inquire at any time before, during, or after award into any Investigator disclosure of financial interests, and the Contractor's review of, and response to, such disclosure, regardless of whether the disclosure resulted in the Contractor's determination of a financial conflict of interests. The Contracting Officer may require submission of the records or review them on site. On the basis of this review of records or other information that may be available, the Contracting Officer may decide that a particular financial conflict of interest will bias the objectivity of the BARDA-funded research to such an extent that further corrective action is needed or that the Institution has not managed the financial conflict of interest in accordance with 4 5 C F R Part 94. The issuance of a Stop Work Order by the Contracting Officer may be necessary until the matter is resolved.

If the Contracting Officer determines that BARDA-funded clinical research, whose purpose is to evaluate the safety or effectiveness of a drug, medical device, or treatment, has been designed, conducted, or reported by an Investigator with a financial conflict of interest that was not disclosed managed or reported the Contractor shall require the Investigator involved to disclose the financial conflict of interest in each public presentation of the results of the research and to request an addendum to previously published presentations.

ARTICLE H.16. NEEDLE DISTRIBUTION

The Contractor shall not use contract funds to carry out any program of distributing sterile needles or syringes for the hypodermic injection of any illegal drug.

ARTICLE H.17. RESTRICTION ON ABORTIONS

The Contractor shall not use contract funds for any abortion.

ARTICLE H.18. CONTINUED BAN ON FUNDING OF HUMAN EMBRYO RESEARCH

The Contractor shall not use contract funds for (1) the creation of a human embryo or embryos for research purposes; or (2) research in which a human embryo or embryos are destroyed, discarded, or knowingly subjected to risk of injury or death greater than that allowed for research on fetuses in utero under 45 CFR 46.204(b) and Section 498(b) of the Public Health Service Act (42 U.S.C. 289g(b)). The term "human embryo or embryos" includes any organism, not protected as a human subject under 45 CFR 46 as of the date of the enactment of this Act, that is derived by fertilization, parthenogenesis, cloning, or any other means from one or more human gametes or human diploid cells.

Additionally, in accordance with a March 4, 1997 Presidential Memorandum, Federal funds may not be used for cloning of human beings.

ARTICLE H.19. DISSEMINATION OF FALSE OR DELIBERATELY MISLEADING INFORMATION

The Contractor shall not use contract funds to disseminate information that is deliberately false or misleading.

ARTICLE H.20. CONFIDENTIALITY OF INFORMATION

a. Confidential information, as used in this article, means information or data of a personal nature about an individual, or proprietary information or data submitted by or pertaining to an institution or organization.

b. The Contracting Officer and the Contractor may, by mutual consent, identify elsewhere in this contract specific information and/or categories of information which the USG will furnish to the Contractor or that the Contractor is expected to generate which is confidential and providing further that the Government is not entitled to unlimited rights to that information pursuant to FAR 52.227-14. Similarly, the Contracting Officer and the Contractor may, by mutual consent, identify such confidential information from time to time during the performance of the contract. Failure to agree will be settled pursuant to the "Disputes" clause.

c. If it is established elsewhere in this contract that information to be utilized under this contract, or a portion thereof, is subject to the Privacy Act, the Contractor will follow the rules and procedures of disclosure set forth in the Privacy Act of 1974, 5 U.S.C. 552a, and implementing regulations and policies, with respect to systems of records determined to be subject to the Privacy Act.

d. Confidential information, as defined in paragraph (a) of this article, shall not be disclosed without the prior written consent of the individual, institution, or organization.

e. Whenever the Contractor is uncertain with regard to the proper handling of material under the contract, or if the material in question is subject to the Privacy Act or is confidential information subject to the provisions of this article, the Contractor should obtain a written determination from the Contracting Officer prior to any release, disclosure, dissemination, or publication.

f. The provisions of paragraph (d) of this article shall not apply to conflicting or overlapping provisions in other Federal, State or local laws.

ARTICLE H.21. ACCESS TO DOCUMENTATION/DATA

The USG shall have physical and electronic access to all documentation and data generated under this contract, including: all data documenting Contractor performance; all datagenerated; all communications and correspondence with regulatory agencies and bodies to include all audit observations, inspection reports, milestone completion documents, and all Offer or commitments and responses. Contractor shall provide the USG with an electronic copy of all correspondence and submissions to the FDA within 5 business days of receipt. The USG shall acquire unlimited rights to all data funded under this contract in accordance with FAR Subpart 27.4 and FAR Clause 52.227-14.

ARTICLE H.22. EPA ENERGY STAR REQUIREMENTS

In compliance with Executive Order 12845 (requiring Agencies to purchase energy efficient computer equipment), all microcomputers, including personal computers, monitors, and printers that are purchased using USG funds in performance of a contract shall be equipped with or meet the energy efficient low-power standby feature as defined by the EPA Energy Star program unless the equipment always meets EPA Energy Star efficiency levels. The microcomputer, as configured with all components, must be Energy Star compliant.

This low-power feature must already be activated when the computer equipment is delivered to the agency and be of equivalent functionality of similar power managed models. If the equipment will be used on a local area network, the vendor must provide equipment that is fully compatible with the network environment. In addition, the equipment will run commercial off-the-shelf software both before and after recovery from its energy conservation mode.

ARTICLE H.23. ACKNOWLEDGMENT OF FEDERAL FUNDING

Section 507 of P.L. 104-208 mandates that Contractors funded with Federal dollars, in whole or in part, acknowledge Federal funding when issuing statements, press releases, requests for proposals, bid solicitations and other documents. This requirement is in addition to the continuing requirement to provide an acknowledgment of support and disclaimer on any publication reporting the results of a contract funded activity.

Publication and Publicity

No information related to data obtained under this contract shall be released or publicized without providing BARDA with at least thirty (30) days advanced notice and an opportunity to review the proposed release or publication.

In addition to the requirements set forth in HHSAR Clause 352.227-70, Publications and Publicity incorporated by reference in SECTION I of this contract, Section 507 of P.L. 104-208 mandates that Contractors funded with Federal dollars, in whole or in part, acknowledge Federal funding when issuing statements, press releases, requests for proposals, bid solicitations and other documents. Contractors are required to state:

(1) the percentage and dollar amounts of the total program or project costs financed with Federal money and; (2) the percentage and dollar amount of the total costs financed by nongovernmental sources. For purposes of this contract “publication” is defined as an issue of printed material offered for distribution or any communication or oral presentation of information, including any manuscript or scientific meeting abstract. Any publication containing data generated under this contract must be submitted for BARDA review no less than thirty (30) calendar days for manuscripts and fifteen (15) calendar days for abstracts before submission for public presentation or publication. Contract support shall be acknowledged in all such publications substantially as follows:

“This project has been funded in whole or in part with Federal funds from the Department of Health and Human Services; Office of the Assistant Secretary for Preparedness and Response; Biomedical Advanced Research and Development Authority, under Contract No. HHSO100201600008C.”

A. Press Releases

Misrepresenting contract results or releasing information that is injurious to the integrity of BARDA may be construed as improper conduct. Press releases shall be considered to include the public release of information to any medium, excluding peer-reviewed scientific publications. With the exeption of ad-hoc press releases required by applicable law or regulations, the Contractor shall ensure that the COR has received an advance copy of any press release related to the contract not less than two (2) business days prior to the issuance of the press release.

The Contractor shall acknowledge the support of the Department of Health and Human Service, Office of the Assistant Secretary for Preparedness and Response, Biomedical Advanced Research and Development Authority, whenever publicizing the work under this contract in any media by including an acknowledgment substantially as follows:

"This project has been funded in whole or in part with Federal funds from the Department of Health and Human Services; Office of the Assistant Secretary for Preparedness and Response; Biomedical Advanced Research and Development Authority, under Contract No. HHSO100201600008C."

ARTICLE H.24. PROHIBITION ON THE USE OF APPROPRIATED FUNDS FOR LOBBYING ACTIVITIES AND HHSAR 352.203-70 ANTI-LOBBYING (December 2015)

Pursuant to the HHS annual appropriations acts, except for normal and recognized executive- legislative relationships, the Contractor shall not use any HHS contract funds for:

(a) Publicity or propaganda purposes;

(b) The preparation, distribution, or use of any kit, pamphlet, booklet, publication, electronic communication, radio, television, or video presentation designed to support or defeat the enactment of legislation before the Congress or any State or local legislature or legislative body, except in presentation to the Congress or any state or local legislature itself; or designed to support or defeat any proposed or pending regulation, administrative action, or order issued by the executive branch of any state or local government, except in presentation to the executive branch of any state or local government itself; or

(c) Payment of salary or expenses of the Contractor, or any agent acting for the Contractor, related to any activity designed to influence the enactment of legislation, appropriations, regulation, administrative action, or Executive order proposed or pending before the Congress or any state government, state legislature or local legislature or legislative body, other than for normal and recognized executive-legislative relationships or participation by an agency or officer of a state, local, or tribal government in policymaking and administrative processes within the executive branch of that government.

(d) The prohibitions in subsections (a), (b), and (c) above shall include any activity to advocate or promote any proposed, pending, or future federal, state, or local tax increase, or any proposed, pending, or future requirement for, or restriction on, any legal consumer product, including its sale or marketing, including, but not limited to, the advocacy or promotion of gun control.

ARTICLE H.25. PRIVACY ACT APPLICABILITY

Notification is hereby given that the Contractor and its employees are subject to criminal penalties for violation of the Privacy Act to the same extent as employees of the USG. The Contractor shall assure that each of its employees knows the prescribed rules of conduct and that each is aware that he or she can be subjected to criminal penalty for violation of the Act. A copy of 45 CFR Part 5b, Privacy Act Regulations, may be obtained at https ://www.gpo.gov/fdsys/granule/CFR-2007-title45-vol1/CFR-2007-title45-vol1-part5b

The Project Officer is hereby designated as the official who is responsible for monitoring contractor compliance with the Privacy Act.

The Contractor shall follow the Privacy Act guidance as contained in the Privacy Act System of Records number 09-25-0200. This document may be obtained at the following link: http://oma.od.nih.gov/ms/privacy/pa-files/0200.htm

ARTICLE H.26. LABORATORY LICENSE REQUIREMENTS

The Contractor shall comply with all applicable requirements of Section 353 of the Public Health Service Act (Clinical Laboratory Improvement Act as amended) (42 U.S.C. 263a and 42 CFR Part 493). This requirement shall also be included in any subcontract for services under the contract.

ARTICLE H.27. QUALITY ASSURANCE (QA) AUDIT REPORTS

BARDA reserves the right to participate in QA audits. Upon completion of the audit/site visit the Contractor shall provide a report capturing the findings, results and next steps in proceeding with the subcontractor. If action is requested of the subcontractor, detailed concerns for addressing areas of non-conformance to FDA regulations for GLP, GMP, or GCP guidelines, as identified in the audit report, must be provided to BARDA. The Contractor shall provide responses from the subcontractors to address these concerns and plans for corrective action execution.

- Contractor shall notify CO and COR of upcoming, ongoing, or recent audits/site visits of subcontractors as part of weekly communications.
- Contractor shall notify the COR and CO within five (5) business days of report completion.

ARTICLE H.28. BARDA AUDITS

Contractor shall accommodate periodic or ad hoc site visits by the USG with forty-eight (48) hours advance notice. If the USG, the Contractor, or other parties identifies any issues during an audit, the Contractor shall capture the issues, identify potential solutions, and provide a report to the USG.

- If issues are identified during the audit, Contractor shall submit a report to the CO and COR detailing the finding and corrective action(s) within 10 business days of the audit.
- COR and CO will review the report and provide a response to the Contractor with ten (10) business days.
- Once corrective action is completed, the Contractor will provide a final report to the CO and COR.

ARTICLE H.29. RESTRICTION ON EMPLOYMENT OF UNAUTHORIZED ALIEN WORKERS

The Contractor shall not use contract funds to employ workers described in section 274A (h)(3) of the Immigration and National Act, which reads as follows:

"(3) Definition of unauthorized alien – As used in this section, the term 'unauthorized alien' with respect to the employment of an alien at a particular time, that the alien is not at that time either an alien lawfully admitted for permanent residence, or (B) authorized to be so employed by this Act or by the Attorney General."

ARTICLE H.30. NOTIFICATION OF CRITICAL PROGRAMMATIC CONCERNS, RISKS, OR POTENTIAL RISKS

If any action occurs that creates a cause for critical programmatic concern, risk, or potential risk to BARDA or the Contractor and Incident Report shall be delivered to BARDA.

- Within 48 hours of activity or incident or within 24 hours for a security related activity or incident, Contractor must notify BARDA.
- Additional updates due to COR and CO within 48 hours of additional developments.
- Contractor shall submit within 5 business days a Corrective Action Plan (if deemed necessary by either party) to address any potential issues.

If corrective action is deemed necessary, Contractor must address in writing, its consideration of concerns raised by BARDA within 5 business days.

ARTICLE H.31. PERSON IN PLANT

With seven (7) business days advance notice to the Contractor in writing from the Contracting Officer, the USG may place a person-in-plant in the Contractor's or subcontractor's facility, who shall be subject to the Contractor's or subcontractor's policies and procedures regarding security and facility access at all times while in the facility.

An article substantially similar to this Person-in-Plant article shall be incorporated into any subcontract for experimental or manufacturing work.

ARTICLE H.32. PROTECTION OF PERSONNEL WHO WORK WITH NONHUMAN PRIMATES

All Contractor personnel who work with nonhuman primates or enter rooms or areas containing nonhuman primates shall comply with the procedures set forth in NIH Policy Manual 3044-2, entitled, "Protection of NIH Personnel Who Work with Nonhuman Primates," located at the following URL:

http://www1.od.nih.gov/oma/manualchapters/intramural/3044-2/

ARTICLE H.33. DISSEMINATION OF INFORMATION (May 2004)

Other than scientific and technical articles for which the contractor can assert a copyright under FAR Clause 52.227-14 (c)no information related to data obtained under this contract shall be released or publicized without the prior written consent of the Contracting Officer. In the event that the contractor seeks to publicize data through a scientific or technical article, the contractor shall provide BARDA, through the COR, with a minimum of thirty (30) business days to review the article prior to publication.

ARTICLE H.34. REGISTRATION WITH THE SELECT AGENT PROGRAM FOR WORK INVOLVING THE POSSESSION, USE, AND/OR TRANSFER OF SELECT BIOLOGICAL AGENTS OR TOXINS

Work involving select biological agents or toxins shall not be conducted under this contract until the Contractor and any affected subcontractor(s) are granted a certificate of registration or are authorized to work with the applicable select agents.

For prime or subcontract awards to domestic institutions who possess, use, and/or transfer Select Agents under this contract, the institution must complete registration with the Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (DHHS) or the Animal and Plant Health Inspection Services (APHIS), U.S. Department of Agriculture (USDA), as applicable, before performing work involving Select Agents, in accordance with 42 CFR 73. No Government funds can be used for work involving Select Agents, as defined in 42 CFR 73, if the final registration certificate is denied.

For prime or subcontract awards to foreign institutions who possess, use, and/or transfer Select Agents under this contract, the institution must provide information satisfactory to the Government that a process equivalent to that described in 42 CFR 73 (http://www.cdc.gov/od/sap/docs/42cfr73.pdf) for U.S. institutions is in place and will be administered on behalf of all Select Agent work sponsored by these funds before using these funds for any work directly involving the Select Agents. The Contractor must provide information addressing the following key elements appropriate for the foreign institution: safety, security, training, procedures for ensuring that only approved/appropriate individuals have access to the Select Agents, and any applicable laws, regulations and policies equivalent to 42 CFR 73. The Government will assess the policies and procedures for comparability to the U.S. requirements described in 42 CFR Part 73. When requested by the contracting officer, the Contractor shall provide key information delineating any laws, regulations, policies, and procedures applicable to the foreign institution for the safe and secure possession, use, and transfer of Select Agents. This includes summaries of safety, security, and training plans, and applicable laws, regulations, and policies. For the purpose of security risk assessments, the Contractor must provide the names of all individuals at the foreign institution who will have access to the Select Agents and procedures for ensuring that only approved and appropriate individuals have access to Select Agents under the contract.

Listings of HHS select agents and toxins, biologic agents and toxins, and overlap agents or toxins as well as information about the registration process, can be obtained on the Select Agent Program Web site at http://selectagents.gov

ARTICLE H.35. MANUFACTURING STANDARDS

The Good Manufacturing Practice Regulations (GMP)(21 CFR Parts 210-211) will be the standard to be applied for manufacturing, processing, packaging, storage and delivery of this product.

If at any time during the life of the contract, the Contractor fails to comply with GMP in the manufacturing, processing, packaging, storage, stability and other testing of the manufactured drug substance or product and delivery of this product and such failure results in a material adverse effect on the safety, purity or potency of the product (a material failure) as identified by the FDA, the Contractor shall have thirty (30) calendar days from the time such material failure is identified to cure such material failure. If, within the thirty (30) calendar day period, the Contractor fails to take such an action to the satisfaction of the USG Project Officer, or fails to provide a remediation plan that is acceptable to the COR, then the contract may be terminated.

ARTICLE H.36. IN-PROCESS REVIEW

In Process Reviews (IPR) will be conducted at the discretion of the USG to discuss the progression of the milestones. The USG reserves the right to revise the milestones and budget pending the development of the project. Deliverables such as an overall project summary report and/or slides will be required when the IPRs are conducted. The Contractor's success in completing the required tasks under each work segment must be demonstrated through the Deliverables and Milestones specified under SECTION F. Those deliverables will constitute the basis for the USG's decision, at its sole discretion, to proceed with the work segment, or institute changes to the work segment, or terminate the work segment.

IPRs may be scheduled at the discretion of the USG to discuss progression of the contract. The Contractor shall provide a presentation following a prescribed template which will be provided by the USG at least 30 business days prior to the IPR. Subsequently, the contractor will be requested to provide a revised/final presentation to the Contracting Officer at least 10 business days prior to the IPR.

PART II - CONTRACT CLAUSES

SECTION I - CONTRACT CLAUSES

ARTICLE I.1. FAR 52.252-2, CLAUSES INCORPORATED BY REFERENCE (FEBRUARY 1998)

This contract incorporates the following clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at: https ://www.acquisition.gov/

General Clause s for Cost-Reimbursement Rese arch and Development Contract

a. FEDERAL ACQUISITION REGULATION (FAR) (48 CFR CHAPTER 1) CLAUSES:

FAR CLAUSE NO.	DATE	TITLE
52.202-1	Nov 2013	Definitions
52.203-3	Apr 1984	Gratuities
52.203-5	May 2014	Covenant Against Contingent Fees
52.203-6	Sep 2006	Restrictions on Subcontractor Sales to the Government
52.203-7	May 2014	Anti-Kickback Procedures
52.203-8	May 2014	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity
52.203-10	May 2014	Price or Fee Adjustment for Illegal or Improper Activity
52.203-12	Oct 2010	Limitation on Payments to Influence Certain Federal Transactions (Over $150,000)
52.203-13	Oct 2015	Contractor Code of Business Ethics and Conduct
52.203-14	Oct 2015	Display of Hotline Poster(s)
52.204-4	May 2011	Printed or Copied Double-Sided on Recycled Paper
52.204-7	Jul 2013	System for Award Management
52.204-10	Oct 2015	Reporting Executive Compensation and First-Tier Subcontract Awards
52.204-13	Jul 2013	System for Award Management Maintenance
52.209-6	Oct 2015	Protecting the Government's Interests When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment
52.209-9	Jul 2013	Updates of Publicly Available Information Regarding Responsibility Matters

FAR CLAUSE NO.	DATE	TITLE
52.209-10	Nov 2015	Prohibition on Contracting With Inverted Domestic Corporations
52.210-1	Apr 2011	Market Research
52.215-2	Oct 2010	Audit and Records – Negotiation
52.215-8	Oct 1997	Order of Precedence - Uniform Contract Format
52.215-10	Aug 2011	Price Reduction for Defective Cost or Pricing Data
52.215-12	Oct 2010	Subcontractor Cost or Pricing Data
52.215-15	Oct 2010	Pension Adjustments and Asset Reversions
52.215-17	Oct 1997	Waiver of Facilities Capital Cost of Money
52.215-18	Jul 2005	Reversion or Adjustment of Plans for Post-Retirement Benefits (PRB) other than Pensions
52.215-19	Oct 1997	Notification of Ownership Changes
52.215-21	Oct 2010	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data - Modifications
52.215-23	Oct 2009	Limitations on Pass-Through Charges (Over the Simplified Acquisition threshold)
52.216-7	Jun 2013	Allowable Cost and Payment
52.216-12	Apr 1984	Cost Sharing Contract – no fee
52.219-8	Oct 2014	Utilization of Small Business Concerns
52.222-2	Jul 1990	Payment for Overtime Premiums
52.222-3	Jun 2003	Convict Labor
52.222-21	April 2015	Prohibition of Segregated Facilities
52.222-26	April 2015	Equal Opportunity
52.222-35	Oct 2015	Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans
52.222-36	Jul 2014	Affirmative Action for Workers with Disabilities
52.222-37	Feb 2016	Employment Reports on Veterans,
52.222-40	Dec 2010	Notification of Employee Rights Under the National Labor Relations Act
52.222-50	Mar 2015	Combating Trafficking in Persons Alternate I
52.222-54	Oct 2015	Employment Eligibility Verification
52.223-18	Aug 2011	Encouraging Contractor Policy to Ban Text Messaging While Driving
52.224-1	April 1984	Privacy Act Notification
52.224-2	April 1984	Privacy Act
52.225-13	Jun 2008	Restrictions on Certain Foreign Purchases
52.227-1	Dec 2007	Authorization and Consent, Alternate I (Apr 1984)
52.227-2	Dec 2007	Notice and Assistance Regarding Patent and Copyright Infringement
52.227-3	Apr 1984	Patent Indemnity
52.227-11	May 2014	Patent Rights - Ownership by the Contractor (Note: In accordance with FAR 27.303(b)(2), paragraph (e) is modified to include the requirements in FAR 27.303(b)(2)(i) through (iv). The frequency of reporting in (i) is annual.
52.227-14	May 2014	Rights in Data-General

FAR CLAUSE NO.	DATE	TITLE
52.227-14 – Alternate II	Dec 2007	Rights in Data – General, Alternate II. Completed portion as follows: Limited Rights Notice (Dec 2007) (a) These data are submitted with limited rights under Government Contract No HHSO100201600008C. These data may be reproduced and used by the Government with the express limitation that they will not, without written permission of the Contractor, be used for purposes of manufacture nor disclosed outside the Government; except that the Government may disclose these data outside the Government for the following purposes, provided that the Government makes such disclosure subject to prohibition against further use and disclosure: (i) Use (except for manufacture) by support service contractors. (ii) Evaluation by nongovernment evaluators. (b) This Notice shall be marked on any reproduction of these data, in whole or in part.
52.227-16	Jun 1987	Additional Data Requirements
52.229-8	Mar 1990	Taxes – Foreign Cost Reimbursement Contracts. Insert “Switzerland” in both blanks.
52.230-4	May 2014	Disclosure and Consistency of Cost Accounting Practices – Foreign Concerns
52.230-6	June 2010	Administration of Cost Accounting Standards
52.232-9	Apr 1984	Limitation on Withholding of Payments
52.232-17	Oct 2010	Interest
52.232-20	Apr 1984	Limitation of Cost
52.232-23	May 2014	Assignment of Claims
52.232-25	July 2013	Prompt Payment, Alternate I (Feb 2002)
52.232-33	July 2013	Payment by Electronic Funds Transfer—System for Award Management
52.233-1	May 2014	Disputes
52.233-3	Aug 1996	Protest After Award, Alternate I (Jun 1985)
52.233-4	Oct 2004	Applicable Law for Breach of Contract Claim
52.242-1	Apr 1984	Notice of Intent to Disallow Costs
52.242-3	May 2014	Penalties for Unallowable Costs
52.242-4	Jan 1997	Certification of Final Indirect Costs
52.242-13	Jul 1995	Bankruptcy
52.242-15	Aug 1989	Stop Work Order. Alt I (Aug 1984)
52.243-2	Aug 1987	Changes - Cost Reimbursement, Alternate V (Apr 1984)
52.244-2	Oct 2010	Subcontracts, Alternate I (June 2007)
52.244-5	Dec 1996	Competition in Subcontracting
52.244-6	June 2016	Subcontracts for Commercial Items
52.245-1 Alt. II	Apr 2012	Government Property, Alternate II (Jun 2007)
52.245-9	Apr 2012	Use and Charges

FAR CLAUSE NO.	DATE	TITLE
52.246-9	Apr 1984	Inspection of Research and Development (Short Form)
52.246-23	Feb 1997	Limitation of Liability
52.247-63	Jun 2003	Preference for U.S.-Flag Air Carriers
52.249-6	May 2004	Termination (Cost-Reimbursement)
52.249-14	Apr 1984	Excusable Delays
52.251-1	Apr 2012	Government Supply Sources
52.253-1	Jan 1991	Computer Generated Forms

b. DEPARTMENT OF HEALTH AND HUMAN SERVICES ACQUISITION REGULATION (HHSAR) (48 CFR CHAPTER 3) CLAUSES:

HHSAR CLAUSE NO.	DATE	TITLE
352.211-3	Dec 2015	Paperwork Reduction Act
352.203-70	Dec 2015	Anti-Lobbying
352.222-70	Dec 2015	Contractor Cooperation in Equal Employment Opportunity Investigations
352.223-70	Dec 2015	Safety and Health
352.224-70	Dec 2015	Privacy Act
352.227-70	Dec 2015	Publications and Publicity
352.231-70	Dec 2015	Salary Rate Limitation
352.233-71	Dec 2015	Litigation and Claims
352.237-75	Dec 2015	Key Personnel
352.270-4a	Dec 2015	Protection of Human Subjects
352.270-6	Dec 2015	Restriction on use of Human Subjects

ARTICLE I.2. ADDITIONAL FAR CONTRACT CLAUSES INCLUDED IN FULL TEXT

This contract incorporates the following clauses in full text.

FEDERAL ACQUISITION REGULATION (FAR) (48 CFR CHAPTER 1) CLAUSES:

a. FAR Clause 52.217-9, Option to Extend the Term of the Contract (Mar 2000)

(a) The Government may extend the term of this contract by written notice to the Contractor within 30 days after the Government has completed its analysis of the deliverables associated with the applicable milestone. The Government will provide the Contractor a preliminary written notice of its intent to extend at least 30 days before the contract expires. The preliminary notice does not commit the Government to an extension.

(b) If the Government exercises this option, the extended contract shall be considered to include this option clause.

(c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed 10 years.

b. FAR Clause 52.219-28, Post-Award Small Business Program Representation (Jul 2013).

(a) *Definitions*. As used in this clause—

Long-term contract means a contract of more than five years in duration, including options. However, the term does not include contracts that exceed five years in duration because the period of performance has been extended for a cumulative period not to exceed six months under the clause at 52.217-8, Option to Extend Services, or other appropriate authority.

Small business concern means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (c) of this clause. Such a concern is "not dominant in its field of operation" when it does not exercise a controlling or major influence on a national basis in a kind of business activity in which a number of business concerns are primarily engaged. In determining whether dominance exists, consideration shall be given to all appropriate factors, including volume of business, number of employees, financial resources, competitive status or position, ownership or control of materials, processes, patents, license agreements, facilities, sales territory, and nature of business activity.

(b) If the Contractor represented that it was a small business concern prior to award of this contract, the Contractor shall rerepresent its size status according to paragraph (e) of this clause or, if applicable, paragraph (g) of this clause, upon the occurrence of any of the following:

(1) Within 30 days after execution of a novation agreement or within 30 days after modification of the contract to include this clause, if the novation agreement was executed prior to inclusion of this clause in the contract.

(2) Within 30 days after a merger or acquisition that does not require a novation or within 30 days after modification of the contract to include this clause, if the merger or acquisition occurred prior to inclusion of this clause in the contract.

(3) For long-term contracts—

(i) Within 60 to 120 days prior to the end of the fifth year of the contract; and

(ii) Within 60 to 120 days prior to the date specified in the contract for exercising any option thereafter.

(c) The Contractor shall rerepresent its size status in accordance with the size standard in effect at the time of this rerepresentation that corresponds to the North American Industry Classification System (NAICS) code assigned to this contract. The small business size standard corresponding to this NAICS code can be found at http://www.sba.gov/content/table-small-business-size-standards.

(d) The small business size standard for a Contractor providing a product which it does not manufacture itself, for a contract other than a construction or service contract, is 500 employees.

(e) Except as provided in paragraph (g) of this clause, the Contractor shall make the representation required by paragraph (b) of this clause by validating or updating all its representations in the Representations and Certifications section of the System for Award Management (SAM) and its other data in SAM, as necessary, to ensure that they reflect the Contractor's current status. The Contractor shall notify the contracting office in writing within the timeframes specified in paragraph (b) of this clause that the data have been validated or updated, and provide the date of the validation or update.

(f) If the Contractor represented that it was other than a small business concern prior to award of this contract, the Contractor may, but is not required to, take the actions required by paragraphs (e) or (g) of this clause.

(g) If the Contractor does not have representations and certifications in SAM, or does not have a representation in SAM for the NAICS code applicable to this contract, the Contractor is required to complete the following rerepresentation and submit it to the contracting office, along with the contract number and the date on which the rerepresentation was completed:

The Contractor represents that it [X] is, [ ] is not a small business concern under NAICS Code 54711 assigned to contract number HHSO100201600008C.

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

The following documents are attached and incorporated in this contract:

1. Statement of Work

Statement of Work, dated June 24, 2016, 12 pages

2. Invoice/Financing Request Instructions and Contract Financial Reporting Instructions for BARDA Cost-Reimbursement Type Contracts,

Invoice/Financing Request Instructions and Contract Financial Reporting Instructions for BARDA Cost-Reimbursement Type Contracts, 6 pages.

3. Financial Report of Individual Project/Contract, 1 page

4. Instructions for Completing Financial Report of Individual Project/Contract, 3 pages

5. Inclusion Enrollment Report

Inclusion Enrollment Report, 5/01 (Modified OAMP: 10/01), 1 page.

6. Research Patient Care Costs

Research Patient Care Costs, 1 page.

7. Report of Government Owned, Contractor Held Property

Report of Government Owned, Contractor Held Property, 1 page. Located at: https://oamp.od.nih.gov/sites/default/files/DGS/contracting-forms/Govt-Owned-Prop.pdf

8. Earned Value Management (EVM) Data Item Description (DID) Sample, 16 pages.

9. 7 Principles of Earned Value Management System Implementation Guide, 30 pages.

10. Disclosure of Lobbying Activities, 2 pages

PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION K - REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS

The following documents are incorporated by reference in this contract:

1) Human Subjects Assurance Identification Numbers: To be provided prior to study execution

2) Animal Welfare Assurance Numbers (OLAW/PHS): To be provided prior to study execution

End of Contract No. HHSO100201600008C

Broad Agency Announcement (BAA) for the Advanced Research and Development of Chemical, Biological, Radiological, and Nuclear (CBRN) Medical Countermeasures for BARDA

CBRN-BAA-13-100-SOL-00013

Development of a Single-Dose Intranasal Vaccine for Post-Exposure Prophylaxis of Inhalation Anthrax
Topic Area of Interest Number 1: Vaccines

Contractual Statement of Work

PREAMBLE

Independently and not as an agency of the Government, the Contractor shall be required to furnish to The Government all the necessary services, qualified personnel, material, equipment, and facilities, not otherwise provided by the Government, as needed to perform the Statement of Work submitted in response to the BARDA Broad Agency Announcement (BAA) CBRN-BAA-13-100-SOL-00013.

The Government reserves the right to modify the milestones, progress, schedule, budget or deliverables to add or delete deliverables, process or schedules if the need arises. Because of the nature of this research and development (R&D) contract and the complexities inherent in this and prior programs, at designated milestones the Government will evaluate whether work should be redirected, removed, or whether schedule or budget adjustments should be made. The Government reserves the right to change the product, process, schedule or events to add or delete part or all of these elements as the need arises.

Overall Objectives and Scope

The overall objective of this contract is to advance the development of AdVAV as a novel, intranasally administered vaccine for use in protection against anthrax infection. The scope of work for this contract includes pre-clinical, clinical and manufacturing development activities that fall into the following areas: nonclinical efficacy studies; clinical activities; manufacturing activities; and all associated regulatory, quality assurance, management and administrative activities. The development effort for AdVAV will progress in specific stages that cover the base performance segment and the option segments as specified in this contract. The Contractor must complete specific tasks required in the base work segment before the Government will exercise any or all of the option segments. The scope of work includes the following tasks integral to the successful completion of CLIN 0001 (Base segment) and CLIN 0002 through CLIN 0008 (Option segments).

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Confidential Treatment Requested — Certain Portions of this Exhibit, Marked as [***], Have Been Omitted Pursuant to a Pending Request for Confidential Treatment and Have Been Filed Separately with the Securities and Exchange Commission

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1. CONTRACT ID CODE PAGE	PAGE OF PAGES
		1 | 46

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (*If applicable*)
0001	See Block 16C	OS195220	

6. ISSUED BY	CODE	ASPRB-ARDA	7. ADMINISTERED BY (*If other than item 6*)	CODE	ASPR-BARDA
ASPR-BARDA 200 Independence Ave., S.W. Room 640-G Washington DC 20201			ASPR-BARDA 200 Independence Ave., S.W. Room 638-G Washington DC 20201		

8. NAME AND ADDRESS OF CONTRACTOR (*No., street, county, State and ZIP Code*).	(X)	9A. AMENDMENT OF SOLICITATION NO.
ALTIMMUNE, INC. 1391677 ALTIMMUNE, INC. 19 FIRSTFIELD 19 FIRSTFIELD RD STE 200 GAITHERSBURG MD 208781791		9B. DATED (*SEE ITEM 11*)
	X	10A. MODIFICATION OF CONTRACT/ORDER NO. HHSO100201600008C
		10B. DATED (*SEE ITEM 13*) 07/27/2016
CODE 1391677	FACILITY CODE	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and data specified.

12. ACCOUNTING AND APPROPRIATION DATA (*If required*) Net Increase: $7,257,673.00

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
☒	**A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (*Specify authority*) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.** FAR 43.103(a) - By mutual agreement of the parties
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (*such as changes in paying office, appropriation date, etc.*) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
☐	**D OTHER (*Specify type of modification and authority*)**

E. IMPORTANT: Contractor ☐ is not ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (*Organized by UCF section headings, including solicitation/contract subject matter where feasible.*)

Tax ID Number: 63-1190888
dus Number: 032198363
FOB: Destination
Period of Performance: 07/27/2016 to 07/31/2018

Change Item 1 to read as follows (amount shown is the obligated amount):

1	ASPR-16-05121 — CLIN 0001 - Base period fund to	7,257,673.00

Altimmune Inc. to support the clinical development of AdVaV
Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (*Type or print*)	16A. NAME AND TITLE OF CONTRACTING OFFICER (*Type or print*)
William Enright President & CEO	GEORGE J. KEANE

15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
/s/ William Enrigh (*Signature of person authorized to sign*)	23-Mar-2017	/s/ George J. Keane (Signature of Contracting Officer)	23-MAR-2017

NSN 7540-01-152-8070
Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

92639556v2

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED HHSO100201600008C/0001	PAGE OF 2 45

NAME OF OFFEROR OR CONTRACTOR
ALTIMMUNE, INC. 1391677

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Obligated Amount: $7,257,673.00 Delivery: 07/31/2018 Delivery Location Code: HHS/OS/ASPR HHS/OS/ASPR 200 C St SW WASHINGTON DC 20201 US Amount: $14,323,741.00 Accounting Info: 2016.1992016.25103 Appr. Yr.: 2016 CAN: 1992016 Object Class: 25103 Funded: $0.00 Project Data: . Accounting Info: Funded: $0.00 Delivery: 07/31/2018 Delivery Location Code: HHS/OS/ASPR HHS/OS/ASPR 200 C St SW Washington DC 20201 US Amount: $7,257,673.00 Accounting Info: 2017.1992017.25106 Appr. Yr.: 2017 CAN: 1992017 Object Class: 25106 Funded: $7,257,673.00 Delivery Location Code: HHS HHS 200 Independence Avenue, SW Washington DC 20201 US Amount: $0.00				

Effective as of the date of this modification, the Contracting Officer for this contract will be Carl Newman. All references to the previous Contracting Officer, Francine Hemphill, shall be modified accordingly.

Beginning with the effective date of this modification, the Government and contractor mutually agree as follows:

1) Revise ARTICLE B.2 - Estimated Cost and Fixed Fee as follows:

ARTICLE B.2. ESTIMATED COST AND FIXED FEE

a. The total estimated cost of ***the base performance segment*** **(CLIN 0001)** is **$[***]**.

b. The total fixed fee ***of the base performance segment*** is **$[***]**. The fixed fee shall be paid subject to the Allowable Cost and Payment and Fixed Fee Clauses.

c. The total amount of ***the base performance segment***, CLIN 0001, represented by the sum of the total estimated cost plus fixed fee is **$[***]**.

d. The total amount for ***the base performance segment shall not exceed*** **$[***]**. The total amount obligated by the Government for the base segment of the contract shall not exceed **$[***]** and the Government will not be responsible for any Contractor incurred costs that exceed this amount unless a modification to the contract is signed by the Contracting Officer which expressly increases this amount.

e. It is estimated that the amount current allotted will cover performance of the contract through **31 July 2018**.

CLIN	Estimated Period of Performance	Supplies/Services	Estimated Cost	Estimated Fixed Fee	Total Estimated Cost Plus Fixed Fee
0001	July 27, 2016 – July 31, 2018	Perform activities to support the conduct of a Phase 1a clinical study and demonstrate safety and immunogenicity in accordance with Article C.1 Statement of Work Study reports, development reports, IND	$[***]	$[***]	$[***]

1) Delete and replace SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT, ARTICLE C.1. STATEMENT OF WORK

ARTICLE C.1. STATEMENT OF WORK

Independently and not as an agent of the Government, the Contractor shall furnish all the necessary services, qualified personnel, material, equipment, and facilities not otherwise provided by the Government as needed to perform the Statement of Work dated March 09, 2017 set forth in SECTION J-List of Attachments, attached hereto and made a part of the contract.

2) ARTICLE C.1. DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

Article C.1 is deleted and replaced with the following:

Independently and not as an agent of the Government, the Contractor shall furnish all the necessary services, qualified personnel, material, equipment, and facilities not otherwise provided by the Government as needed to perform the Statement of Work (dated March 9, 2017, 13 pages) attached to this contract as Attachment 1 (SECTION J-List of Attachments).

3) ARTICLE F.2. DELIVERABLES

The table of deliverables in Article F.2 are deleted and replaced with the tables to be attached to this modification after the revised Attachment 1 (Statement of Work).

4) SECTION J (LIST OF ATTACHMENTS)

Attachment 1 (Statement of Work) is revised and replaced in accordance with enclosure (dated March 9, 2017; 13 pages).

5) ARTICLE G.3 KEY PERSONNEL

Article G.3 is deleted and replaced with the following:

Pursuant to the Key Personnel clause incorporated in Section I of this contract, the following individuals are considered to be essential to the work being performed hereunder:

#	NAME	ORGANIZATION	TITLE
1	[***]	Altimmune, Inc.	[***]
2	[***]	Altimmune, Inc.	[***]
3	[***]	Altimmune, Inc.	[***]

The key personnel specified in this contract are considered to be essential to work performance. At least thirty (30) business days prior to diverting any of the specified individuals to other programs or contracts, including, where practicable, an instance when an individual must be replaced as a result of leaving the employ of the Contractor, the Contractor shall notify the Contracting Officer and shall submit comprehensive justification for the diversion or replacement request (including proposed substitutions for key personnel) to permit evaluation by the Government of the impact on performance under this contract. The Contractor shall not divert or otherwise replace any key personnel without the written consent of the Contracting Officer.

Revised Statement of Work:

Broad Agency Announcement (BAA) for the Advanced Research and Development of Chemical, Biological, Radiological, and Nuclear (CBRN) Medical Countermeasures for BARDA

CBRN-BAA-13-100-SOL-00013

Development of a Single -Dose Intranasal Vaccine for Post-Exposure Prophylaxis of Inhalation Anthrax
Topic Area of Interest Number 1: Vaccines

Contractual Statement of Work
March 9, 2017

PREAMBLE

Independently and not as an agency of the Government, the Contractor shall be required to furnish to The Government all the necessary services, qualified personnel, material, equipment, and facilities, not otherwise provided by the Government, as needed to perform the Statement of Work submitted in response to the BARDA Broad Agency Announcement (BAA) CBRN-BAA-13-100-SOL-00013.

The Government reserves the right to modify the milestones, progress, schedule, budget or deliverables to add or delete deliverables, process or schedules if the need arises. Because of the nature of this research and development (R&D) contract and the complexities inherent in this and prior programs, at designated milestones the Government will evaluate whether work should be redirected, removed, or whether schedule or budget adjustments should be made. The Government reserves the right to change the product, process, schedule or events to add or delete part or all of these elements as the need arises.

Overall Objectives and Scope

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END OF THE STATEMENT OF WORK FOR HHSO100201600008C

*** ***Confidential treatment requested***

Revised Article F.2 Deliverables:

TECHNICAL DELIVERABLES

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
01	Kickoff Meeting	The Contractor shall complete a Kickoff meeting after contract award	• Within a month of contract award. • Contractor shall provide itinerary and agenda at least 5 business days in advance of site visit. • COR approves and distributes itinerary and agenda within 3 business days. • Contractor provides meeting minutes to COR within 5 business days after the meeting. • COR reviews, comments, and approves minutes within 10 business days.
02	Quarterly Meetings	The Contractor shall hold recurring teleconference or face-to-face Program Review Meetings approximately every third month either in Washington DC or at work sites of the Contractor or subcontractors. The meetings will be used to discuss contract progress in relation to the Program Management deliverables described below as well as study designs, technical, regulatory, and ethical aspects of the program.	• Contractor shall provide itinerary and agenda at least 5 business days in advance of site visit • COR approves and distributes itinerary and agenda within 3 business days. • Contractor provides meeting minutes to COR within 5 business days after the meeting. • COR reviews, comments, and approves minutes within 10 business days.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
03	Biweekly Teleconference Meetings	The Contractor shall participate in teleconferences every two weeks with BARDA to discuss the performance of the contract.	• Contractor provides agenda to COR no later than 2 business days in advance of meeting. • COR approves and distributes agenda prior to meeting. • Contractor provides meeting minutes to COR within 5 business days following the meeting. • COR reviews, comments, and approves minutes within 10 bussness days following the meeting.
04 (Monthly) 05 (Annual)	Monthly & Annual Technical Progress Reports	The Monthly and Annual Technical Progress report shall address each of the below items and be cross-referenced to the Work Breakdown Structure (WBS), Statement of Work (SOW), Integrated Master Schedule (IMS), Performance Measurement Baseline Review report (PMBR), Earned Value Management (EVM), and Contract Performance Report (CPR). 1. An Executive Summary highlighting the progress, issues and relevant manufacturing, non-clinical, clinical and regulatory activities. The Executive Summary should highlight only critical issues for that reporting period and resolution approach; limited to 2-3 pages.	• Monthly Reports shall be submitted on the 20th day of the month after the end of each month with an Annual Report submitted on the 30th calendar day of the final month of each contract year for the previous twelve calendar months. Monthly progress reports are not required for the periods when the Annual Report(s) and Final Report are due. The COR and CO will review the monthly reports with the Contractor and provide feedback.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
		2. Progress in meeting contract milestones – broken out by subtasks within each milestone, overall project assessment, problems encountered and recommended solutions. The reports shall detail the planned and actual progress during the period covered, ex plaining occurrences of any differences between the two and the corrective steps. 3. The reports shall also include a three-month rolling forecast of the key planned activities, referencing the WBS/IMS. 4. A tracking log of progress on regulatory submissions with the FDA number, description of submission, date of submission, status of submission and next steps. 5. Provide updated EVM/CPR. 6. Estimated and Actual Expenses. 7. This report shall also contain a narrative or table detailing whether there is a significant discrepancy (>10%) at this time between the % of work completed and the cumulative costs incurred to date. Monthly and actual expenses should be broken down to the appropriate WBS level. This section of the report should also contain estimates for the Subcontractors' expenses from the previous month if the Subcontractor did not submit a bill in the previous month. If the subcontractor(s) was not working or did not incur any costs in the previous month, then a statement to this effect should be included in this report for those respective subcontractors.	

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
06	Earned Value Management (EVM) / Contract Performance Report (CPR)	Contractor will provide a monthly Contract Performance Report (CPR) Format 1 at an agreed upon reporting level using the BARDA provided WBS and a Variance Analysis Report (Format 5). The supplemental monthly CAP report shall contain, at the work package level, time phased budget (budgeted cost of work scheduled), earned value (budgeted cost of work performed), and actual costs of work performed as captured in Contractor's EVM systems. The Contractor shall provide a rationale in the package of its use of % complete as EVMS methodology or identity if any other EVMS methodology is being used.	• Contractor shall provide EVM/CPR as part of the Monthly Progress Report on the 20th day of the month after the end of each month (this requirement begins only as set forth in the Contract Milestones & Related Deliverables table). • Contractor shall provide top level or key changes in baseline cost as a result of anticipated cost savings or risks. • BARDA may request, on a monthly or ad hoc basis that the Contractor provide raw data at a reporting level or lower level as BARDA deems necessary. • BARDA may raise, in writing, concerns for Contractor to address; Contractor must address, in writing, all concerns raised by BARDA. • Reporting will commence after the EVM system has been implemented but no later than 3 months after start of base period.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
07	Performance Measurement Baseline Review (PMBR)	PMBR Report shall address each of the items listed below and be cross-referenced to the IMP, WBS, SOW, and Risk Management Plan. 1. Contractor provides baseline proposal. 2. Responsibility Assignment Matrix. 3. A description of the work scope through control account Work Authorization Documents and/or WBS Dictionary down to the control account level. 4. Template for work packages. 5. IMS with the inclusion of agreed major milestones and control account plans for all control accounts. 6. Baseline revision documentation and program log(s) risk management plan.	• Due within 90 days of contract award. • Contractor shall provide baseline proposal .ppt briefing 10 business days prior to meeting. • Contractor provides agenda to COR 2 business days in advance of meeting. • COR approves (with CO concurrence) and distributes agenda no later than 2 business days in advance of meeting. • COR approves (with CO concurrence) all meeting material no later than 2 business days in advance of meeting. • Contactor provides minutes within 5 business days of the meeting. • COR reviews and approves (with CO concurrence) minutes. • BARDA will review documentation and provide written comments and questions to Contractor. Contractor shall address BARDA's comments and resubmit PMBR report for BARDA approval within 10 business days.
08	Risk Management Plan	The Contractor shall provide a Risk Management Plan that outlines the impacts of each risk in relation to the cost schedule, and performance objectives. The plan	• Due within 90 days of contract award. • Contractor provides updated Risk Management Plan in Monthly Progress Report.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
		shall include risk mitigation strategies. Each risk mitigation strategy will capture how the corrective action will reduce impacts on cost, schedule and performance.	• BARDA shall provide Contractor with a written list of concerns in response plan submitted. • Contractor must address, in writing, all concerns raised by BARDA within 20 business days of Contractor's receipt of BARDA's concerns.
09	Deviation Notification and Mitigation Strategy	Process for changing IMS activities associated with cost and schedule as baselined at the PMBR. Contractor shall notify BARDA of significant changes the IMS defined as increases in cost above 5% or schedule slippage of more than 30 days, which would require a PoP ex tension. Contractor shall provide a high level management strategy for risk mitigation.	• Due as needed.
10	Go/No-Go Decision Gate Presentation	Contractor shall provide a presentation detailing technical progress made towards completion of Go/No-Go decision gate milestones follow ing a prescribed template provided by BARDA prior to the IPR.	• Contractor shall provide presentation in .ppt format 10 business days prior to the In-Process Review (IPR). • Contractor shall submit written justification of progress towards satisfying Go/No-Go criteria. • After reviewing, BARDA, COR and CO will provide a written response.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
11	Incident Report	Contractor shall communicate and document all critical programmatic concerns, risks, or potential risks with BARDA.	• Due within 48 hours of activity or incident or within 24 hours for a security activity or incident. • Email or telephone with written follow-up to COR and CO. • Additional updates due to COR and CO within 48 hours of additional developments. • Contractor shall submit within 5 business days a Corrective Action Plan (if deemed necessary by either party) to address any potential issues. • If corrective action is deemed necessary, Contractor must address in writing, its consideration of concerns raised by BARDA within 5 business days of receiving such concerns in writing.
12	Draft and Final Reports for Clinical and Non-Clinical Studies	Contractor shall provide Draft and Final Clinical/Non-Clinical Study Reports to BARDA for review and comment.	• Draft report due within 45 calendar days after completion of analysis and at least 15 business days prior to submission to FDA. • Subcontractor prepared reports received by the Contractor shall be submitted to the Contracting Officer's Technical Representative and Contracting Officer (CO) for review and comment no later than 5 business days after receipt by Contractor.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
			• The Government shall provide written comments to the Draft Final Report for Clinical and Non-Clinical Studies within 15 business days after the submission. • Final report due 30 calendar days after receiving comments on the Draft Final Report for Clinical and Non-Clinical Studies. If corrective action is recommended, Contractor must address, in writing, all concerns raised by BARDA in writing. • Contractor shall consider revising reports to address BARDA's recommendations prior to FDA submission. • Final FDA submissions shall be provided to BARDA concurrently or no later than 1 business day after submission to the FDA.
13	Standard Operating Procedures	The Contractor shall make internal and, to the extent possible, subcontractor Standard Operating Procedures (SOPs) available for review electronically.	Upon request from the Project Officer/Contracting Officer.
14	Manufacturing Campaign Reports	Contractor shall provide Manufacturing Campaign Reports to BARDA for review and comment prior to submission to FDA. The COR and CO reserve the right to request within the PoP a non-proprietary Manufacturing Campaign Report for distribution within the USG.	• Contractor will submit Manufacturing Campaign Reports at least 15 business days prior to FDA submission. • If corrective action is recommended, Contractor must address, in writing, all concerns raised by BARDA in writing.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
			• Contractor shall consider revising reports to address BARDA's concerns and/or recommendations prior to FDA submission. • Final FDA submission shall be submitted to BARDA concurrently or no later than 1 business day after submission to the FDA.
15	FDA Correspondence	The Contractor shall memorialize any correspondence between Contractor and FDA and submit to BARDA. All documents shall be duly marked as either "Draft" or "Final".	• Contractor shall provide written summary of any FDA correspondence within 5 business days of correspondence.
16	FDA Meetings	The Contractor shall forward the dates and times of any meeting with the FDA to BARDA and make arrangements for appropriate BARDA staff to attend the FDA meetings. BARDA staff shall include up to a maximum of four people (COR, CO and up to 2 subject matter experts).	• Contractor shall notify BARDA of upcoming FDA meeting within 24 hours of scheduling Type A, B or C meetings OR within 24 hours of meeting occurrence for ad hoc meetings. • The Contractor shall forward initial Contractor and FDA-issued draft minutes and final minutes of any meeting with the FDA to BARDA within 5 business days of receipt. All documents shall be duly marked as either "Draft" or "Final".

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
17	FDA Submissions	The Contractor shall provide BARDA the opportunity to review and comment upon all draft submissions before submission to the FDA. Contractor shall provide BARDA with an electronic copy of the final FDA submission. All documents shall be duly marked as either “Draft” or “Final”.	• Contractor shall submit draft FDA submissions to BARDA at least 15 business days prior to FDA submission. • BARDA will provide feedback to Contractor within 10 business days of receipt. • If corrective action is recommended, the Contractor must address, in writing, its consideration of all concerns raised by BARDA. • The Contractor shall consider revising their documents to address BARDA’s concerns and/or recommendations prior to FDA submission. • Final FDA submissions shall be submitted to BARDA concurrently or no later than 1 calendar day of its submission to CDER.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
18	FDA Audits	In the event of an FDA inspection which occurs as a result of this contract and for the product, or for any other FDA inspection that has the reasonable potential to impact the performance of this contract, the Contractor shall provide the USG with an exact copy (non-redacted) of the FDA Form 483 and the Establishment Inspection Report (EIR). The Contractor shall provide the COR and CO with copies of the plan for addressing areas of non-conformance to FDA regulations for GLP, GMP, or GCP guidelines as identified in the audit report, status updates during the plan's execution and a copy of all final responses to the FDA. The Contractor shall also provide redacted copies of any FDA audits received from subcontractors that occur as a result of this contract or for this product. The Contractor shall make arrangements for BARDA representative(s) to be present during the final debrief by the regulatory inspector.	• Contractor shall notify CO and COR within 10 business days of a scheduled FDA audit or within 24 hours of an ad hoc site visit/audit if the FDA does not provide advanced notice. • Contractor shall provide copies of any FDA audit report received from subcontractors that occur as a result of this contract or for this product within 5 business days of receiving correspondence from the FDA or third party. • Within 10 business days of audit report, Contractor shall provide CO with a plan for addressing areas of nonconformance, if any are identified.
19	QA Audit Reports	BARDA reserves the right to participate in QA audits. Upon completion of the audit/site visit the Contractor shall provide a report capturing the findings, results and next steps in proceeding with the subcontractor. If action is requested of the subcontractor, detailed concerns for addressing areas of non-conformance to FDA regulations for GLP, GMP, or GCP guidelines, as identified in the audit report, must be provided to BARDA. The Contractor shall provide responses from the subcontractors to address these concerns and plans for corrective action execution.	• Contractor shall notify CO and COR 10 days in advance of upcoming, ongoing, or recent audits/site visits of subcontractors as part of weekly communications. • Contractor shall notify the COR and CO within 5 business days of report completion.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
20	BARDA Audit	Contractor shall accommodate periodic or ad hoc site visits by BARDA. If BARDA, the Contractor, or other parties identifies any issues during an audit, the Contractor shall capture the issues, identify potential solutions, and provide a report to BARDA.	• If issues are identified during the audit, Contractor shall submit a report to BARDA detailing the finding and corrective action(s) within 10 business days of the audit. • COR and CO will review the report and provide a response to the Contractor with 10 business days. • Once corrective action is completed, the Contractor will provide a final report to BARDA.
21	Technical Documents	Upon request, Contractor shall provide CO and COR with deliverables from the follow ing contract funded activities: process Development Reports, Assay Qualification Plan/Report, Assay Validation Plan/Report, Assay Technology Transfer Report, Batch Records, SOPs, Master Production Records, Certificate of Analysis, Clinical Studies Data or Reports. The CO and COR reserve the right to request within the PoP a non-proprietary technical document for distribution within the Government.	• Contractor shall provide technical document within 10 business days of CO or COR request. Contractor can request additional time on an as-needed basis. • If corrective action is recommended, the Contractor must address, in writing, concerns raised by BARDA in writing.
22	Animal Model or Other Technology Transfer Package	Contractor shall provide Animal Model or Other Technology Transfer Package relevant data.	• Contractor shall provide data within 10 business days of COR or CO request.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
23	Raw Data or Data Analysis	Contractor shall provide raw data or data analysis to BARDA upon request.	• Contractor shall provide data or data analysis to CO and COR within 20 business days of request.
24	Product Transition Strategy	Contractor shall provide a 2-4 page summary document containing a Product Transition Strategy to support transition of the product(s) prior to end of the base and/or option(s) POP. The Product Transition Strategy should provide a strategic plan for further development and/or stockpiling of the product. The transition strategy shall provide options and/or a specific approach for the transition of MCM product for further development, procurement, approval and/or stockpile.	• Contractor shall provide a Product Transition Strategy to support transition of the product(s) 90 days prior to the end of the (base/option) POP as addendum to the Quarterly Project Status Report.
25	Publications	Any manuscript or scientific meeting abstract containing data generated under this contract must be submitted to BARDA for review prior to submission.	• Contractor must submit all manuscript or scientific meeting abstract to PO and CO within 30 business days for manuscripts and 15 business days for abstracts. • Contractor must address in writing all concerns raised by BARDA in writing. • Final submissions shall be submitted to BARDA concurrently or no later than one (1) calendar day of its submission.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
26	Press Releases	Contractor agrees to accurately and factually represent the work conducted under this contract in all press releases.	• With the exception of ad-hoc press releases required by applicable law or regulations, Contractor shall ensure that the CO has received and approved an advanced copy of any press release to this contract not less than 2 business days prior to the issuance of the press release. • If corrective action is required, the Contractor agrees to accurately and factually represent the work conducted under this contract in all press releases. • Any final press releases shall be submitted to BARDA no later than 1 (one) calendar day prior to its release.
27	Integrated Master Plan (IMP)	The Contractor shall provide an IMP including WBS, critical path milestones, and Earned Value Management Plan.	• Contractor shall provide the draft IM P within 90 days of contract award with final due 8 months after award and updated monthly as part of the Monthly Progress Report. • Contractor must address, in writing, all concerns raised by BARDA in writing.
28	Draft and Final Technical Progress Report	A Draft Final Technical Progress Report containing a summation of the work performed and the results obtained for the entire contract PoP. The draft report shall be duly marked as ‘Draft’.	• Contractor shall provide a draft Technical Progress Report 75 calendar days before the end of the PoP and the Final Technical Progress Report on or before the completion date of the PoP.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
		The Final Technical Progress Report incorporating feedback received from BARDA and containing a summation of the work performed and the results obtained for the entire contract PoP. The final report shall document the results of the entire contract. This report shall be in sufficient detail to fully describe the progress achieved under all milestones. The final report shall be duly marked as 'Final'.	• Subcontractor prepared reports received by the Contractor shall be submitted to the COR and CO for review and comment no later than 5 business days after receipt by the Contractor. • COR shall provide feedback on draft report within 15 calendar days of receipt, which the Contractor shall consider incorporating into the Final Report. • Contractor shall submit, with the Final Technical Progress Report, a summary (not to exceed 200 words) of salient results achieved during the performance of the contract.
29	Draft and Final Study Protocols	Contractor shall provide all Draft and Final Study Protocols to BARDA for evaluation. (The CO and PO reserves the right to request within the period of performance a non-proprietary Study Protocol for distribution within the United States Government (USG))	• The Contractor will submit all proposed protocols to BARDA at least 10 business days prior to study start. If corrective action is required, the Contractor must address in writing all concerns raised by BARDA to the satisfaction of BARDA before study execution and provide BARDA a revised draft protocol that addresses BARDA's comments and requested changes. • After receiving the revised Study Protocol that satisfies BARDA, the CO will approve the revised Study Protocol and will provide a written approval to the Contractor that provides authorization to the Contractor to execute the specific study.

CDRL#	Deliverable	Deliverable Description	Reporting Procedures and Due Dates
			• Contractor shall not proceed with any study protocol until BARDA gives its approval and the Contractor has provided BARDA with a final and approved Study Protocol.
30	Clinical Study Status Update	Contractor shall provide PO with a status update of clinical studies that are actively enrolling patients to include by study site: cumulative enrollment; new enrollments; screen failures; patients dropped from study; AE and SAEs; activation or inactivation of study sites; investigator appointments or changes; and status of IRB/IEC review/approval/renewal. Contractor will provide proposed format for BARDA PO review and approval.	• Update will be submitted by e-mail or other electronic format to be provided by BARDA by the end of the 20th business day of each new month. • Updates, to the extent they are available, will be presented during biweekly teleconferences. • If no changes have occurred since the prior update only a simple statement that there is no new data is required.

Base (CLIN 0001)

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
			Manufacturing Process Development (WBS 1.1)				
1	[***]	[***]	[***]	[***]	[***]	1.1.1	[***]
2	[***]	[***]	[***]	[***]	[***]	1.1.2	[***]
3	[***]	[***]	[***]	[***]	[***]	1.1.3	[***]
4	[***]	[***]	[***]	[***]	[***]	1.1.4	[***]
5	[***]	[***]	[***]	[***]	[***]	1.1.6	[***]
			GMP Manufacturing (WBS 1.2)				
6	[***]	[***]	[***]	[***]	[***]	1.2.1	[***]
7	[***]	[***]	[***]	[***]	[***]	1.2.2	[***]
8	[***]	[***]	[***]	[***]	[***]	1.2.3	[***]
9	[***]	[***]	[***]	[***]	[***]	1.2.4	[***]
			Assay Development (WBS 1.3)				
10	[***]	[***]	[***]	[***]	[***]	1.3.1	[***]
11	[***]	[***]	[***]	[***]	[***]	1.3.2	[***]
12	[***]	[***]	[***]	[***]	[***]	1.3.3	[***]
13	[***]	[***]	[***]	[***]	[***]	1.3.4	[***]
			Clinical Development (WBS 1.5)				
14	[***]	[***]	[***]	[***]	[***]	1.5.1	[***]
			Regulatory (WBS 1.6)				
15	[***]	[***]	[***]	[***]	[***]	1.6.1	[***]
16	[***]	[***]	[***]	[***]	[***]	1.6.2	[***]
17	[***]	[***]	[***]	[***]	[***]	1.6.3	[***]
			Program Management (WBS 1.7)				
18	[***]	[***]	[***]	[***]	[***]	1.7.1	[***]
19	[***]	[***]	[***]	[***]	[***]	1.7.2	[***]
20	[***]	[***]	[***]	[***]	[***]	1.7.3	[***]

Option 1, CLIN 0002: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
			Analytical Development (WBS 2.3)				
1	[***]	[***]	[***]	[***]	[***]	2.3.1	[***]
2	[***]	[***]	[***]	[***]	[***]	2.3.2	[***]
3	[***]	[***]	[***]	[***]	[***]	2.3.3	[***]
			Regulatory (WBS 2.6)				
4	[***]	[***]	[***]	[***]	[***]	2.6.1	[***]
			Program Management (WBS 2.7)				
5	[***]	[***]	[***]	[***]	[***]	2.7.1	[***]
6	[***]	[***]	[***]	[***]	[***]	2.7.2	[***]
7	[***]	[***]	[***]	[***]	[***]	2.7.3	[***]

Option 2, CLIN 0003: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
			Manufacturing Process Development (WBS 2.1)				
1	[***]	[***]	[***]	[***]	[***]	2.1.1	[***]
2	[***]	[***]	[***]	[***]	[***]	2.1.2	[***]
3	[***]	[***]	[***]	[***]	[***]	2.1.3	[***]
4	[***]	[***]	[***]	[***]	[***]	2.1.4	[***]
5	[***]	[***]	[***]	[***]	[***]	2.1.5	[***]
6	[***]	[***]	[***]	[***]	[***]	2.1.6	[***]
7	[***]	[***]	[***]	[***]	[***]	2.1.8	[***]
			GMP Manufacturing (WBS 2.2)				
8	[***]	[***]	[***]	[***]	[***]	2.2.1	[***]
9	[***]	[***]	[***]	[***]	[***]	2.2.2	[***]
10	[***]	[***]	[***]	[***]	[***]	2.3.3	[***]
11	[***]	[***]	[***]	[***]	[***]	2.3.4	[***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
12	[***]	[***]	[***]	[***]	[***]	2.2.5	[***]

Option 3, CLIN 0004: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
1	[***]	[***]	[***]	[***]	[***]	2.1.7	[***]

Option 4, CLIN 0005: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
			Non-clinical Development (WBS 2.4)				
1	[***]	[***]	[***]	[***]	[***]	2.4.1	[***]
2	[***]	[***]	[***]	[***]	[***]	2.4.2	[***]
3	[***]	[***]	[***]	[***]	[***]	2.4.3	[***]
4	[***]	[***]	[***]	[***]	[***]	2.4.4	[***]
5	[***]	[***]	[***]	[***]	[***]	2.4.5	[***]
6	[***]	[***]	[***]	[***]	[***]	2.4.6	[***]
7	[***]	[***]	[***]	[***]	[***]	2.4.7	[***]
8	[***]	[***]	[***]	[***]	[***]	2.4.8	[***]

Option 5, CLIN 0006: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
			Clinical Development (WBS 2.5)				
1	[***]	[***]	[***]	[***]	[***]	2.5.1	[***]

Option 6, CLIN 0007: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
			Clinical Development (WBS 2.5)				
1	[***]	[***]	[***]	[***]	[***]	2.5.2	[***]

Option 7, CLIN 0008: [***]

No.	Project Milestone (Name)	Milestone Definition	Success Criteria	Failure Criteria	Deliverable (Name, Description, etc.)	WBS	Estimated Completion Date (Month/ Year)
			Clinical Development (WBS 2.5)				
1	[***]	[***]	[***]	[***]	[***]	2.5.3	[***]

All other terms and conditions of this contract remain in full force and effect.

END OF MODIFICATION 01 TO HHSO100201600008C

*** ***Confidential treatment requested***

AMENDED AND RESTATED
EXCLUSIVE LICENSE AGREEMENT

This Amended and Restated Exclusive Agreement (this "Agreement") is made and is effective as of June 2, 2014 (the "Effective Date") between The UAB Research Foundation ("UABRF") and Vaxin Inc. (the "Licensee") and amends and restates in its entirety the Exclusive License Agreement between the Parties dated March 1, 1998 (the "Original License").

RECITALS

WHEREAS, UABRF owns all right, title and interest in the intellectual property described in UABRF intellectual property disclosures numbered U1996-0083, U1997-0087, U2003-0015, U2003-0016, U2003-0017, U2003-0039, which were developed and disclosed to UABRF by De-chu Tang, while employed by the University of Alabama at Birmingham (the "Inventor"), and are embodied in the Licensed Patents, has the right to grant licenses to the same and desires to have the same developed and commercialized to benefit the public; and

WHEREAS, the Licensee is engaged in the business of discovering, developing, licensing, manufacturing, marketing and selling pharmaceutical products and related activities; and in the course of such business is engaged in the commercialization of pharmaceutical products which are based in whole or in part on technologies found in the patents which protect the above listed intellectual property disclosures and desires to obtain a license to the Licensed Patents upon the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the premises described above and the mutual promises and agreements set forth in this Agreement, the Parties agree as set forth below.

ARTICLE 1
DEFINITIONS

The Definitions used in this Agreement are set forth below.

1.1 "Affiliate" means any Person that directly or indirectly controls, is controlled by, or is under common control with a Party. "Control" means (i) the beneficial ownership of at least fifty percent (50%) of the voting securities of a Person with voting equity, or (ii) the power to direct or cause the direction of the management or policies of a Person.

1.2 "Agreement" means this agreement, as amended from time to time in accordance with the terms and conditions set forth in this agreement.

1.3 "Applicable Law" means all laws, statutes and regulations promulgated by all Regulatory Authorities and all Governmental Authorities.

1.4 "Development and Commercialization Plan" means development, manufacturing, marketing and commercialization activities proposed to be undertaken by the Licensee with respect to the Licensed Patents as set forth on attached Exhibit B.

1.5 "Disclaimed Licensed Patent(s)" means any Licensed Patent in respect of which the Licensee decides not to pursue protective rights, undertake, or be responsible for, the payment of Protection Expenses, as described in Section 4.1(e) and (f) of this Agreement.

1.6 "First Commercial Sale" means the first Sale of a Licensed Product to a Third Party.

1.7 "For Value" means any consideration, remuneration or benefit of any kind, whether received directly or indirectly, including, but not limited to, cash, equity, debt, preferential treatment, including waiver, rebate, discount, etc.

1.8 "Governmental Authorities" means, with respect to each country or jurisdiction, all legislative and governmental authorities, bodies, commissions, agencies or other instrumentalities of such country or jurisdiction.

1.9 "Infringement Notice" is defined in Section 7.1 of this Agreement.

1.10 "Inventor" is defined in the first recital of this Agreement.

1.11 "Licensed Field of Use" means any diagnostic, vaccine or therapeutic use or methods.

1.12 "Licensed Patents" means (a) the patents and/or patent applications set forth on attached Exhibit A, (b) any foreign patent applications based thereon, (c) all patents proceeding from such domestic and foreign patent applications, (d) all claims of continuations-in-part that are entitled to the benefit of the priority date of the parent Licensed Patent and are enabled by subject matter that is disclosed in the parent Licensed Patent, and (e) all divisionals, continuations, reissues, reexaminations and extensions of any patent or patent application described in (a) – (d) above. Licensed Patents does not include any patent and/or patent application that relates to a Disclaimed Licensed Patent.

1.13 "Licensed Product" means any product or part thereof, process or service, the development, manufacture, use, import, export, offer for sale or sale of which is covered by, or which cannot be undertaken or completed without infringing, a Valid Patent Claim set forth in any Licensed Patent.

1.14 "Licensed Territory" means those countries in which patent coverage is pending or has been granted.

1.15 "Management Activities" means any and all Protection Activities and any other steps deemed necessary and reasonable to commercialize the Disclaimed Licensed Patents.

1.16 "Net Sales" means the gross amount set forth on the invoice relating to any Sale of a Licensed Product, less (a) discounts actually allowed, (b) rebates, price reductions, rebates to social and welfare systems, charge backs, government mandated and similar rebates, (c) credits for claims, allowances, retroactive price reductions or returned goods, (d) prepaid freight and insurance, (e) customs duties, sales taxes or other governmental charges actually paid in connection with such Sale (but excluding income tax). Where a Licensed Product is not used, transferred or exchanged For Value, the Net Sales will be the net invoice price of products of similar kind and quality, sold or transferred For Value

at similar quantities, currently being offered by the Licensee, a Sublicensee or by other manufacturers. Where there is no comparable sale or transfer For Value, the Net Sale will be the Licensee's or Sublicensee's cost of manufacture, determined by the Licensee's or Sublicensee's customary accounting procedures, plus a percentage commensurate with industry standards as mutually agreed upon between the Parties at the time of identification.

1.17 "Non-Commercial Research Purposes" means any use and practice for academic research and educational purposes.

1.18 "Non-Royalty Income" means anything received For Value that is cash or a cash equivalent that is not calculated upon a percentage of Net Sales, including, but not limited to, fees and advances. For purposes of clarity, the purchase by a Sublicensee of shares of the Licensee as specified in a sublicense agreement shall be considered a non-cash payment to the Licensee and is therefore not considered Non-Royalty Income.

1.19 "Parties" means UABRF and the Licensee and each of them individually is a "Party."

1.20 "Person" means an individual, corporation, partnership, trust, business trust, association or any other entity with a separate legal identity, including the Parties.

1.21 "Proprietary Information" is defined in Section 8.4.

1.22 "Protection Activities" means taking all actions deemed reasonably necessary to protect the Licensed Patents, including, but not limited to, obtaining, filing for, securing, pursuing, prosecuting, continuing or maintaining, and defending the patents and patent applications, subject to the terms set forth herein.

1.23 "Protection Expenses" means all legal fees, costs and expenses reasonably incurred by UABRF in the performance of the Protection Activities, such fees, costs and expenses to be documented by written invoice.

1.24 "Regulatory Authority" means, with respect to any particular country or jurisdiction, the Governmental Authority with the primary responsibility for the evaluation or approval of pharmaceutical products before such products can be tested, marketed, promoted, distributed or sold in such country, including Governmental Authorities that have jurisdiction over the pricing of such products. The term Regulatory Authority includes the Federal Food and Drug Administration of the United States.

1.25 "Representative(s)" means, with respect to each Party and their Affiliates, all trustees, directors, officers, employees, agents and advisors.

1.26 "Sale or Sales" means any use, transfer or exchange, For Value or otherwise, of a Licensed Product. Sales include all Sales by the Licensee, its Affiliates and its Sublicensees and includes any transfer by the Licensee to an Affiliate or sublicensee where there is no subsequent Sale (*i.e*., the Licensed Product is not further resold or transferred). For the avoidance of doubt, Sales shall not be deemed to include (a) any transfer by the Licensee or a Sublicensee to an Affiliate or Sublicensee, where there is a

subsequent Sale of the Licensed Product; only the subsequent Sale is used to calculate any amount due, (b) the use, performance or provision of a Licensed Product for research and development purposes, clinical or otherwise, or (c) reasonable distributions as samples or given as donations for indigent use.

1.27 "Sublicensee" means a Person to whom the Licensee has granted a sublicense pursuant to Section 2.5 of this Agreement.

1.28 "Term" is defined in Section 9.1.

1.29 "Third Party" means any Person other than the Parties and their Affiliates.

1.30 "United States" means the United States of America.

1.31 "United States Government" means the Federal Government of the United States.

1.32 "Valid Patent Claim" means (i) a pending patent claim included within the Licensed Patents or (ii) an issued and unexpired patent claim included within the Licensed Patents which has not been held permanently revoked, unenforceable or invalid by a decision of a court or other governmental agency of competent jurisdiction, to which an appeal has not or cannot be taken within the time allowed for appeal, and which has not been disclaimed, denied or admitted to be invalid or unenforceable through reissue, disclaimer or otherwise.

ARTICLE 2
GRANT OF LICENSE

2.1 Grant of License. Subject to the terms and upon the conditions set forth in this Agreement, UABRF hereby grants to the Licensee an exclusive right and license to (a) practice the Licensed Patents and (b) make, have made, develop, use, lease, offer to sell, sell, import and export Licensed Products, within the Licensed Field of Use in the Licensed Territory during the Term. Subject to the prior written consent of UABRF, which consent shall not be unreasonably withheld, the Licensee may transfer its rights under this Agreement to an Affiliate, provided such Affiliate assumes all of the obligations of the Licensee under this Agreement.

2.2 Rights of the United States Government. It is understood that if a United States Governmental Authority has funded research, during the course of or under which any of the Licensed Patents were conceived or made, the United States Government is entitled, as a right, under the provisions of 35 U.S.C. §§ 200-212 and applicable regulations of Chapter 37 of the Code of Federal Regulations, to a non-exclusive, non-transferable, paid-up license to practice or have practiced and use the affected Licensed Patents for governmental purposes. The Licensee acknowledges that the rights and license granted to it pursuant to this Agreement are subject to any and all rights of the United States Government.

2.3 Reservation of Rights by UABRF and its Affiliates. UABRF reserves the right, for itself and for its Affiliates, to:

(a) practice and use, and to permit its Representatives to practice and use, the Licensed Patents within the Licensed Field of Use for Non-Commercial Research Purposes;

(b) grant to non-profit academic, educational or research institutions and Governmental Authorities, non-exclusive, royalty-free licenses to make and use the Licensed Patents within the Licensed Field of Use for Non-Commercial Research Purposes;

(c) permit their respective Representatives to disseminate and publish scientific findings from research related to the Licensed Patents subject to Section 8.2.

(d) practice, use and otherwise commercialize, including licensing, the Licensed Patents to Third Parties for applications and uses outside of the Licensed Field of Use.

2.4 Title Remains with UABRF. All right, title and interest in and to the Licensed Patents remain with UABRF. Except as provided in this Agreement, no express or implied licenses with respect to the Licensed Patents or any other rights are transferred or granted to the Licensee by implication, estoppel or otherwise.

2.5 Right to Grant Sublicenses. The Licensee has the right to grant sublicenses to any Person under this Agreement on the following terms and conditions:

(a) the execution of a sublicense shall not in any way diminish, reduce or eliminate any of the Licensee's obligations under this Agreement, and the Licensee shall remain primarily liable for such obligations and any breach of any provision of this Agreement by a Sublicensee;

(b) any sublicense so granted is limited to the Licensed Field of Use;

(c) any sublicense so granted shall be subject and subordinate to, and consistent with, the terms of this Agreement;

(d) the Licensee may not sublicense the right to prosecute or protect the Licensed Patents to a Sublicensee, without obtaining the prior written consent of UABRF;

(e) any sublicense shall also provide that, in the event this Agreement is terminated or upon the expiration of the Term, such sublicenses shall automatically become a direct license with UABRF on the terms stated therein;

(f) all sublicenses are to be For Value and the Licensee shall not receive from a Sublicensee anything of value in lieu of cash payments in consideration for any sublicense under this Agreement without the prior written consent of UABRF;

(g) the Licensee shall provide UABRF with a copy of any such sublicense granted by it under this Agreement within thirty (30) days of the execution of the sublicense;

(h) all such copies of sublicense agreements may be redacted to exclude confidential scientific information and other information required by the Sublicensee to be kept confidential, provided that all relevant financial terms and information shall be retained and shall not be redacted; the disclosure of sublicense agreements to UABRF shall be subject to the confidentiality obligations set forth in this Agreement; and

(i) UABRF is a third party beneficiary to each sublicense and each agreement evidencing a sublicensing arrangement shall include a statement and an acknowledgement by the Sublicensee to this effect.

ARTICLE 3
DEVELOPMENT AND COMMERCIALIZATION

3.1 Development and Commercialization Plan. During the Term, the Licensee shall use good faith, reasonable commercial efforts to develop, manufacture, commercialize and market the Licensed Patents through a diligent program designed to accomplish the commercial exploitation of the same and to make the technology covered by or embedded in the Licensed Patents available to the general public in accordance with the procedures and practices that are usual and customary for similar technologies and industries. The Parties acknowledge that the Licensee has provided to UABRF the Development and Commercialization Plan set forth on attached Exhibit B which sets forth its current development and commercialization objectives. The Parties further acknowledge and agree that the Development and Commercialization Plan is, and the development and commercialization milestones set forth therein are, reasonable.

3.2 Amendment of Development and Commercialization Plan and Milestones. All variations and deviations from and changes to the Development and Commercialization Plan and milestones must be expressly approved in writing by UABRF, such consent not to be unreasonably withheld.

3.3 Development and Commercialization Report. The Licensee shall provide UABRF, on each July 1 and January 1 for a period of six (6) years from the Effective Date or until the First Commercial Sale, with written progress reports detailing the activities of the Licensee relating to the Development and Commercialization Plan. As a general guide, each such report shall provide information regarding the accomplishments and progress made by the Licensee during the prior reporting period and the objectives and goals to be reached during the forthcoming reporting period. The Licensee will thereafter provide such reports to UABRF on an annual basis on the anniversary of the Effective Date.

3.4 Regulatory Approvals. With respect to each Licensed Product, and to the extent regulatory approval is required, the Licensee shall use commercially reasonable efforts to obtain the approval of each applicable Regulatory Authority prior to the First Commercial Sale in each country/jurisdiction in which the Licensee intends to sell Licensed Products.

3.5 Patent Markings. The Licensee shall ensure that each Licensed Product manufactured and/or sold in the United States shall bear patent markings that meet all applicable requirements of 35 U.S.C. §287, as amended from time to time. All Licensed Products manufactured and/or sold outside of the United States shall be marked in such a manner as to conform to the Applicable Law of such country/jurisdiction.

3.6 Manufacturing in the United States. The Licensee shall use commercially reasonable efforts to substantially manufacture in the United States any Licensed Products sold in the United States that incorporate any invention or intellectual property owned by UABRF and are licensed to the Licensee under this Agreement that was developed using funds provided by a United States Governmental Authority, as identified on Exhibit A.

ARTICLE 4
PROTECTION OF THE LICENSED PATENTS; PATENT PROSECUTION

4.1 Future Protection Activities.

(a) *UABRF Retains Primary Responsibility*. Subject to the terms and conditions set forth in this Agreement, UABRF shall, from the Effective Date, continue to be primarily responsible for undertaking all Protection Activities relating to the Licensed Patents. UABRF shall, subject to consultation with the Licensee select such legal counsel as it in its sole discretion deems appropriate to assist it in this process.

(b) *Co-operation of the Licensee*. The Licensee shall cooperate with UABRF and its designated legal counsel in connection with the Protection Activities.

(c) *Consultation with the Licensee*. UABRF shall, and shall cause its designated legal counsel to, consult with the Licensee in connection with such Protection Activities and the Licensee shall be given reasonable opportunity to discuss, advise and review issues with UABRF and its designated legal counsel in connection therewith.

(d) *Foreign Protection Requested by the Licensee*. The Licensee must notify UABRF in writing identifying in which foreign countries and jurisdictions, if any, the Licensee wishes to undertake Protection Activities with respect to any Licensed Patents. Exhibit A shall be amended accordingly to reflect these designations.

(e) *Foreign Patent Protection Not Requested by the Licensee*. UABRF may elect to undertake Protection Activities with respect to any Licensed Patents in any country or jurisdiction not so designated by the Licensee pursuant to Section 4.1(d) above. In such cases (i) UABRF shall be responsible for all Protection Expenses incurred in connection therewith and the Licensee shall not be responsible for such expenses and (ii) the Licensed Patents so affected shall no longer be deemed to be licensed to the Licensee in such country or jurisdiction and shall be deemed to have been disclaimed by the Licensee (each, a "Disclaimed Licensed Patent"), (iii) the Licensee shall forfeit and shall no longer have any rights or obligations with respect thereto in such country or jurisdiction and (iv) Exhibit A shall be amended accordingly to delete the affected Licensed Patents for such country or jurisdiction.

(f) *Disclaimed Licensed Patents*. The Licensee may, at any time during the Term, provide at least sixty (60) days written notice to UABRF that it no longer wishes to be responsible for the Protection Expenses in connection with one or more Licensed Patents. In such cases, (i) the Licensee shall continue to be responsible for all Protection Expenses incurred in connection therewith until the expiration of such sixty (60) day notice period and thereafter shall not be responsible for such expenses and (ii) the Licensed Patent(s) so affected shall no longer be deemed to be licensed to the Licensee and shall be deemed to have been disclaimed by the Licensee (each, a "Disclaimed Licensed Patent"), (iii) the Licensee shall forfeit and shall no longer have any rights or obligations with respect thereto and (iv) Exhibit A shall be amended accordingly to delete the affected Licensed Patent(s).

4.2 Information to the Licensee. UABRF shall provide the Licensee with copies of all issued patents relating to the Licensed Patents. UABRF shall provide copies of all patent applications and all filings, correspondence and other related documentation pertaining to prosecutorial matters arising from the Protection Activities, including, but not limited to, all office actions, requests for examinations and restriction requirements.

ARTICLE 5
FINANCIAL TERMS

5.1 Accrued Licensing Obligations. Under that certain Exclusive License Agreement made between the Parties on March 1, 1998 (the "Original License") financial obligations including Protection Expenses and other payments due as consideration for grant of the Original License were made and agreed upon which were not met per the terms of the Original License. Subsequently, a Convertible Promissory Note in the principal amount of Seventy-Five Thousand and No/100 Dollars ($75,000.00) was executed on June 9, 2010 (The "2010 Note") to evidence such expenses (the "Disputed IP Expenses") between the Parties. The Parties acknowledge and agree that as of the date of this Agreement the outstanding principal and accrued interest on the 2010 Note totals One Hundred One Thousand, Nine Hundred and Ninety Five Dollars ($101,995.00). The Parties also agree that as of the date hereof, Minimum Annual Royalties due to be paid by the Licensee under the Original License for the years 2009 through 2013 total One Hundred Sixty Thousand Dollars ($160,000.00) and that as of the Effective Date of this Agreement they remain unpaid The Licensee has indicated that it can pay only Ten Thousand and No/100 Dollars as Minimum Annual Royalties due for each of those years and UABRF has agreed to accept such amount and to waive the remaining One Hundred and Twenty Thousand and No/100 Dollars ($120,000.00). Accordingly, as of the Effective Date of this Agreement, the Licensee owes UABRF One Hundred Forty One Thousand Nine Hundred and Ninety Five and No/100 Dollars ($141,995.00) which it agrees to repay by no later than August 31, 2015. Contemporaneously with the execution of this Agreement, Vaxin is executing a separate, promissory note for One Hundred Forty One Thousand Nine Hundred and Ninety Five and No/100 Dollars ($141,995.00) to evidence its obligation to repay such amount.

5.2 Future Protection Expenses. During the Term and with respect to each Licensed Patent, other than Disclaimed Licensed Patents, the Licensee will be financially responsible for the payment of all Protection Expenses incurred after the January 1, 2010. The Licensee shall pay

such amounts to UABRF within thirty (30) days of receipt of an invoice for the same from UABRF. UABRF shall be responsible for all Protection Expenses incurred in connection with each Disclaimed Licensed Patent in countries/jurisdictions not designated by the Licensee pursuant to Section 4.1(d) above.

5.3 License Fee. No license issue fee is required based on prior consideration under the Original Agreement.

5.4 Issuance of Stock in the Licensee to UABRF. Seven hundred-fifty thousand (750,000) shares of the Licensee's common stock, par value $0.01 per share, were issued to UABRF in connection with the execution of the Original License. An additional Two Hundred Two Thousand, Two Hundred and Eighty-Four (202,284) shares of Licensee's common stock, par value $0.01 per share were issued to UABRF in 2010 in relation to the conversion of a prior promissory note between the Parties, originally due December 15, 2009.

5.5 License Maintenance Fees. The Licensee shall pay UABRF for each calendar year an amount of Twenty Thousand and No/100 dollars ($20,000), such payment being due within thirty (30) days after the end of each calendar year beginning 2014, unless the Licensee has given notice of termination to UABRF prior to such due date.

5.6 Running Royalty Payments. During the Term and with respect to each country or jurisdiction within the Licensed Territory, the Licensee shall pay to UABRF a continuing royalty of [****] percent ([****]%) on all Net Sales arising in such country/jurisdiction until the expiration of the last Valid Patent Claim in that country/jurisdiction. All amounts owing to UABRF under this Section shall be paid on a quarterly basis, on or before the thirtieth (30th) day following the end of the calendar quarter in which such amounts were earned.

5.7 Minimum Royalty Payments. Beginning upon the First Commercial Sale, the Licensee shall be obligated to pay minimum annual royalty payments to UABRF. In the event that the aggregate running royalty payments paid by the Licensee to UABRF pursuant to Section 5.6 above do not reach the minimum payment obligations set forth below by the date set forth below, then the Licensee shall, within thirty (30) days following the end of the calendar year, pay UABRF the difference between such aggregate royalty payment actually paid to UABRF and the minimum payment set forth below. All such minimum annual royalty payments shall be nonrefundable.

Period	**Minimum Royalty Payment**
First Calendar Year Following First Commercial Sale	$ [****]
Second Calendar Year Following First Commercial Sale	$ [****]
Third Calendar Year Following First Commercial Sale	$ [****]
Each Calendar Year Thereafter	$ [****]

***** Confidential treatment requested***

5.8 Royalty Reports. At the time of payment of Running Royalties due per 5.6 above, Licensee shall provide to UABRF a written report setting forth all applicable information specified in Exhibit C, which such report shall accompany the payment of all running royalties due to be paid to UABRF by the Licensee with respect to the preceding calendar quarter. Reports furnished must include the calculation of running royalties by Licensed Product and by country/jurisdiction and must include the rate of currency conversion and the date such conversion was calculated as described in Section 5.13 of this Agreement, all in substantially the format set forth in Exhibit E. If the Licensee is required to pay an annual minimum royalty payment, at the time such payment is made, the Licensee shall also furnish a written report providing, to the extent not already provided to UABRF, all of the information required to be set forth in the quarterly reports discussed above and the additional amount being paid by the Licensee which accompanies the report, being the difference between aggregate running royalty payment actually paid to UABRF in that calendar year and the minimum payment required to be paid.

5.9 Non-Royalty Income. The Licensee shall not receive any Non-Royalty Income, in connection with its exercise of the rights granted to it pursuant to this Agreement.

5.10 Royalty Payments from Sublicensees. The Licensee shall pay to UABRF an amount equal to that which the Licensee would have been required to pay to UABRF had the Licensee affected the Sales actually affected by the Sublicensee.

5.11 Address for Payments. Except as otherwise directed by UABRF, all amounts due to be paid by the Licensee to UABRF pursuant to this Agreement shall be paid to UABRF at the address set forth below its signature on the signature page of this Agreement.

5.12 Late Payment Penalty. The balance of any amount which remains unpaid more than thirty (30) days after it is due to UABRF shall accrue interest until paid at the rate equal to the lesser of [****] percent ([****]%) per calendar month or the maximum amount allowed under Applicable Law. However, in no event shall this interest provision be construed as a grant of permission for payment delays.

5.13 Currency Conversion. All amounts due to be paid to UABRF pursuant to this Agreement shall be made in United States dollars. Any and all amounts received by the Licensee or generated in foreign currency shall be converted into United States dollars at the official rate of exchange from such currency to United States dollars at the rate quoted in the Wall Street Journal (United States edition) for the last business day of the calendar quarter in which running royalties are due and payable to UABRF or on a business day no earlier than five (5) business days before payment is made to UABRF.

5.14 Foreign Taxes. Any tax required to be withheld by the Licensee under the laws of any foreign country or jurisdiction for the account of UABRF shall be promptly paid by the Licensee for and on behalf of UABRF to the appropriate Governmental Authority, and the Licensee shall use reasonable commercial efforts to furnish UABRF with proof of payment of such tax, together with official or other appropriate evidence issued by the applicable Governmental Authority. Any such amounts actually paid on UABRF's behalf shall be deducted from any amounts due to be paid to UABRF under this Agreement.

ARTICLE 6
RECORDKEEPING AND AUDIT RIGHTS

6.1 Books and Records. The Licensee shall keep complete and accurate books, accounts and other records and documentation necessary to ascertain all transactions and events pursuant to which payments due to UABRF pursuant to this Agreement arise and are accrued and to verify the accuracy and completeness of such amounts. All such books, accounts and other records and documentation shall be kept at the Licensee's principal place of business for a period of not less than six (6) years following the end of the calendar year to which they pertain.

6.2 Right to Audit. During the Term and for a period of one (1) year thereafter, UABRF shall have the right to have the Licensee's books and records audited by a qualified, independent accounting firm of its choosing, under appropriate confidentiality provisions such as those set forth in Section 8.4 of this Agreement, to ascertain the accuracy of the reports and payments due to UABRF under this Agreement and compliance by the Licensee, its Affiliates and its Sublicensees with their obligations pursuant to this Agreement and any sublicense. Such audit shall be conducted on ten (10) days advance notice during normal business hours and in a manner that does not interfere unreasonably with the Licensee's business but not more than once in any twelve (12) month period. If any such examination reveals that the Licensee has underpaid or underreported any amount due under this Agreement to UABRF for any calendar quarter examined, the Licensee shall promptly pay to UABRF the amount so underpaid or underreported.

6.3 Reimbursement of Cost of Audit. If any such examination reveals that the Licensee has underpaid or underreported any amount due under this Agreement to UABRF by more than five percent (5%) for any calendar quarter examined, the Licensee shall promptly reimburse UABRF the full reasonable costs and expenses incurred by it with respect to the audit.

ARTICLE 7
INFRINGEMENT; ENFORCEMENT

7.1 Notification of Infringement. During the Term, each Party shall provide prompt written notice to the other Party of any actual infringement or suspected/potential infringement of the Licensed Patents of which such Party is or becomes aware and shall provide, to the extent reasonable and practicable, any available evidence of such infringement by a Third Party (an "Infringement Notice").

7.2 Licensee Right to Pursue/Prosecute. During the Term, the Licensee shall have the right to resolve, in the Licensed Field of Use and in the Licensed Territory, any suspected/potential infringement and prosecute any infringement of any Licensed Patents, in its own name and at its own expense, provided:

(a) the affected Licensed Patent remains exclusively licensed to the Licensee and is not a Disclaimed Licensed Patent;

(b) the claim relates to a Valid Patent Claim; and

(c) the Licensee remains in compliance, in all material respects, with its obligations under this Agreement.

The Licensee shall use commercially reasonable efforts to abate or terminate such infringement without resorting to litigation, which may include negotiating and executing a sublicense agreement which complies with the terms of Section 2.5 of this Agreement. Before the Licensee commences an action with respect to any infringement or potential infringement, it agrees to consider the views of UABRF and the potential effects on the public interest in making its decision whether or not to sue. UABRF agrees to cooperate with the Licensee in connection with any remedial action undertaken by the Licensee and shall be responsible for the costs and expenses incurred by it and for those costs and expenses incurred by it at the reasonable request of the Licensee with respect to such cooperation.

7.3 Control of Suit; Joinder; Expenses.

(a) *Initiated by the Licensee.* If the Licensee wishes to commence a lawsuit, it must do so within ninety (90) days following the date of the relevant Infringement Notice, and it shall bear all costs and expenses incurred by it in connection with such lawsuit. UABRF agrees to cooperate fully with the Licensee in connection with such lawsuit and shall be responsible for the costs and expenses incurred by it and for those costs and expenses incurred by it at the reasonable request of the Licensee with respect to such cooperation.

(b) *Initiated by UABRF.* If the Licensee elects not to exercise its right to commence, or fails to commence, an action within ninety (90) days of the date of the relevant Infringement Notice, UABRF may do so at its own expense, and shall retain sole control over the direction of such lawsuit. The Licensee agrees to cooperate fully with UABRF in connection with such lawsuit and shall be responsible for the costs and expenses incurred by it with respect to such cooperation. If UABRF files an infringement lawsuit, the Licensee may not thereafter commence a lawsuit against the same infringing party with respect to the same acts of infringement which are the subject of UABRF's lawsuit or with respect to which settlement is reached by the infringing party and UABRF.

(c) *Joinder by UABRF.* UABRF, to the extent permitted by Applicable Law, may elect to join in as a party to any infringement lawsuit initiated by the Licensee, in which case, both Parties shall jointly control the lawsuit and shall equally share the responsibility of all legal fees, costs and expenses, unless otherwise agreed to by the Parties. The Licensee may not join UABRF in as a party to any lawsuit initiated by it without the prior written consent of UABRF, and without prior written agreement between the Parties as to the responsibility between the Parties for all costs and expenses incurred by the Parties. If UABRF is involuntarily joined as a party to a lawsuit initiated by the Licensee, the Licensee shall pay all legal fees, costs and expenses incurred by UABRF arising out of such joinder and participation, including, but not limited to legal fees, costs and expenses reasonably incurred by legal counsel selected and retained by UABRF to represent it in such lawsuit. While UABRF remains a party to any infringement

lawsuit initiated by the Licensee, UABRF may not thereafter commence a lawsuit against the same infringing party with respect to the same acts of infringement which are the subject of the Licensee's lawsuit or with respect to which settlement is reached by the infringing party, the Licensee and UABRF.

7.4 Settlement. The Licensee may not settle, enter into a consent judgment or other voluntary final disposition of any lawsuit initiated by it or to which it is a party without the prior written consent of UABRF, which consent shall not be unreasonably withheld. Neither Party may settle or otherwise dispose of any lawsuit to which it is a party, which admits liability on the part of the other Party or which requires the other Party to pay money damages nor issue a formal statement without such other Party's prior written consent in each case.

7.5 Recoveries.

(a) *Lawsuit initiated by the Licensee and in which only the Licensee is a party.* With respect to any lawsuit commenced by the Licensee pursuant to Section 7.3(a) above and in which UABRF is not a party, any recovery of damages shall first be applied in satisfaction of the costs and expenses incurred by the Licensee in bringing such lawsuit, including attorneys' fees, provided they are reasonably incurred, and any balance shall be treated in accordance with Section 5.7 of this Agreement.

(b) *Lawsuit initiated by the Licensee and in which UABRF joins.*

(i) With respect to any lawsuit commenced by the Licensee pursuant to Section 7.3(a) above and in which UABRF is involuntarily joined as a party, any recovery of damages shall first be applied in satisfaction of the costs and expenses incurred by the Licensee and UABRF in bringing such lawsuit, including attorneys' fees, provided they are reasonably incurred (which such costs and expenses shall include all costs and expenses incurred by UABRF resulting from such joinder and participation, including, but not limited to legal fees and expenses reasonably incurred by legal counsel selected and retained by UABRF to represent it in such lawsuit), and any balance shall be treated in accordance with Section 5.7 of this Agreement.

(ii) With respect to any lawsuit commenced by the Licensee pursuant to Section 7.3(a) above and in which UABRF voluntarily joins as a party, any recovery of damages (whether compensatory or punitive in nature) shall first be applied, pro rata, in satisfaction of the costs and expenses incurred by the Parties in bringing such lawsuit, including attorneys' fees, provided they are reasonably incurred, and any balance shall be treated in accordance with Section 5.7 of this Agreement.

(c) *Lawsuit initiated by UABRF.* With respect to any lawsuit commenced by UABRF pursuant to Section 7.3(b) above, [****].

7.6 Inapplicability of Licensee's Rights. Notwithstanding Sections 7.1 – 7.5 above, the rights and obligations of the Licensee under this article shall not apply to (a) any Licensed Patents in which there are no Valid Patent Claims remaining or (b) any Disclaimed Licensed Patent.

ARTICLE 8
OTHER COVENANTS AND AGREEMENTS

8.1 Use of Names. No Party may, without the prior written consent of the other Party:

(i) use (a) the name of the other Party or its Affiliates, if applicable, (b) the name or image of any Representative of the other Party, or (c) any trade-name, trademark, trade device, service mark, symbol, image, icon, abbreviation, contraction or simulation thereof owned by the other Party in any publication, advertising or sales promotional material, press release or in any marketing or advertising documentation or material; or

(ii) represent, either directly or indirectly, that any product or service of the other Party is a product or service of the representing Party or that it is made in accordance with or utilizes the information or documents of the other Party.

Notwithstanding the above, the Licensee may disclose that it has received a license from UABRF in connection with any Licensed Product, and either Party may use the name of the other Party to the extent such use is reasonably necessary for complying with Applicable Law.

8.2 Publications. In furtherance of the rights reserved in Section 2.3(c) of this Agreement, UABRF or its Affiliates shall submit the proposed publication or disclosure to the Licensee at least thirty (30) days prior to submission for publication or disclosure to allow the Licensee to review the matter for disclosure of Proprietary Information of the Licensee. The Licensee shall have thirty (30) days from its receipt of such proposed publication or disclosure to review and to provide written notice to UABRF or its Affiliate who provided the submission requiring removal of the Licensee's Proprietary Information. If the Licensee does not provide written notice of such request to UABRF or its Affiliate who provided the submission within thirty (30) days after receipt of the proposed publication or disclosure from UABRF or its Affiliate, UABRF or its Affiliate shall be free to publish or disclose to third parties the proposed publication or disclosure without further obligation to the Licensee.

8.3 Insurance Coverage. Prior to commencing any human clinical trial, and during the Term, the Licensee shall cause to be in effect through purchase from a reputable insurance company or, upon the consent of UABRF, through a self-insurance program, at its sole expense, and shall maintain "occurrence based type" liability insurance coverage or, if the Licensee is unable to obtain "occurrence based type" liability insurance, a "claims made type" liability insurance coverage (with at least ten (10) years tail coverage). Such insurance coverage shall include a contractual endorsement providing coverage for liability which may be incurred in connection with this Agreement, including, but not limited to general liability and products liability, and such other type of insurance coverage required by Applicable Law or which Licensee deems necessary to enable the Licensee to perform its obligations under this Agreement. All such insurance coverage shall list UABRF and its Affiliates as additional insureds. The Licensee shall

provide evidence of such insurance coverage to UABRF within ten (10) business days of the Effective Date of this Agreement and at least annually thereafter. All such insurance coverage shall require the insurance provider, or in the case of a self -insurance program, the Licensee, to provide UABRF with at least thirty (30) days prior written notice of any change in the terms or cancellation of coverage.

8.4 Confidentiality.

(a) *Exchange of Proprietary Information.* The Parties acknowledge that during the Term they are likely to share information with each other that they each consider to be confidential and proprietary ("Proprietary Information"). For the purposes of this Agreement, the Party that discloses Proprietary Information shall be referred to as the "Disclosing Party" and the Party receiving the Proprietary Information, the Receiving Party.

(b) *Nature of Proprietary Information.* The Parties agree that all information that is provided to the other Party shall be deemed to be Proprietary Information. Notwithstanding the above, the Parties specifically agree that any reports provided by the Licensee pursuant to this Agreement shall be considered Proprietary Information.

(c) *Restrictions.* With respect to all Proprietary Information disclosed to it, the Receiving Party (i) shall keep it confidential (other than as permitted by this Agreement), (ii) shall store and maintain it with the same diligence and care as its own proprietary information, but no less than reasonable diligence and care, (iii) may only use it for the purpose for which it was disclosed by the Disclosing Party, (iv) may not disclose it (other than as permitted by this Agreement), (v) may not deconstruct, modify or copy it (other than as permitted by this Agreement), and (vi) may not transfer or assign it to any Third Party without the prior written consent of the Disclosing Party.

(d) *Access to the Proprietary Information.* The Proprietary Information may be used by, and disclosed to, on an "as-needed" basis, the Receiving Party's Representatives. The Licensee may disclose Proprietary Information relating to the UABRF intellectual property rights to investors, prospective investors, consultants, collaborators and other Third Parties in the chain of manufacturing and distribution, if and only if, the Licensee obtains from such recipient a written confidentiality agreement, the provisions of which are at least as protective of UABRF's Proprietary Information as these set forth in this Section 8.4. Prior to disclosing Licensee's Proprietary Information to any Third Party for any purpose, including Non-Commercial Research Purposes, UABRF shall obtain Licensee's written consent and obtain from such recipient a written confidentiality agreement, the provisions of which are at least as protective of Licensee's Proprietary Information as these set forth in this Section 8.4. Each Party will promptly notify the other Party of any unauthorized use of or access to the Proprietary Information of which it becomes aware.

(e) *Exceptions to Confidentiality Obligation.* The restrictions of confidentiality described above shall not apply to Proprietary Information (i) which as of the Effective Date or subsequent thereto is or becomes available to the public without breach of this Agreement, (ii) if it is lawfully obtained from a Third Party not bound by similar confidentiality and use restrictions and obligations, (iii) if it is known by the Receiving Party prior to disclosure as evidenced by contemporaneous records, or (iv) if it is at any time developed by the Receiving Party independently of and without reference to any disclosure made pursuant to this Agreement. In addition, the confidentiality obligations shall not apply to the Receiving Party if the Receiving Party is legally required by applicable law, court order or Governmental Authority to disclose the Proprietary Information, provided the Receiving Party discloses only the minimum to comply and, if possible and in light of the circumstances, provides reasonable prior notice to the Disclosing Party to enable it to contest the requirement or to seek a protective order.

(f) *Termination or Expiration of this Agreement*. Upon the expiration of the Term, or the earlier termination of this Agreement, each Receiving Party shall, at the Disclosing Party's option and upon written notice thereof to the Receiving Party, return all Proprietary Information, copies and other tangible expressions thereof, to the Disclosing Party or provide the Disclosing Party with written notice that the Proprietary Information in its possession, or in the possession of its Representatives, has been destroyed within thirty (30) days after receipt of the Disclosing Party's written notice to the Receiving Party requiring the Receiving Party to destroy the Proprietary Information in its possession. The Receiving Party may retain one archival copy of the Proprietary Information for purposes of compliance with its obligations under this Agreement.

(g) *Continuing Obligations after Termination/Expiration.* The restrictions and obligations set forth in Section 8.4(c) above shall continue for five (5) years from the termination or expiration of this Agreement, or with respect to information identified by Disclosing Party as trade secrets at the time of disclosure for so long as such information shall remain a trade secret under Applicable Law.

ARTICLE 9
TERM AND TERMINATION

9.1 Term. This Agreement shall commence on the Effective Date and shall continue until the date of expiration of the last to expire of any Valid Patent Claim (inclusive of any extensions, supplementary protection certificates or their equivalents) within the Licensed Patents, unless terminated sooner in accordance with the terms of this Agreement (the "Term").

9.2 Termination by the Licensee. The Licensee may terminate this Agreement at any time, in its sole discretion, by giving not less than ninety (90) days prior written notice to UABRF. Upon the reasonable request of UABRF, the Licensee shall provide assistance, at UABRF's expense, to UABRF to enable UABRF to facilitate and effect the transfer of applicable information and documents regarding the Licensed Patents to a new licensee.

9.3 Termination by UABRF. UABRF shall have the right to immediately terminate this Agreement upon the occurrence of any one or more of the following events:

(a) if the Licensee is in material default of any provision of this Agreement or its obligations under this Agreement and such default has not been remedied within thirty (30) days or such longer cure period specified in the notice after receipt of a notice to cure from UABRF;

(b) upon the occurrence of the third separate default by the Licensee within any consecutive three (3) year period for failure to make payments when due under this Agreement;

(c) if the Licensee fails to meet any of the development and commercialization milestones set forth in the Development and Commercialization Plan;

(d) if by the end of the third (3rd) calendar year after the First Commercial Sale occurred, or by January 1, 2015, whichever comes first, fifty percent (50%) of the minimum royalty payment described in Section 5.8 of this Agreement due in that calendar year is not originating from Net Sales;

(e) if an examination by UABRF pursuant to Section 6.2 shows an underreporting or underpayment by the Licensee in excess of ten percent (10%) of any amounts due to UABRF under this Agreement in any twelve (12) month period;

(f) if the Licensee is convicted of a felony (or similar crime in a jurisdiction outside of the United States) relating to the manufacture, use or sale of a Licensed Product;

(g) if the Licensee shall become insolvent, shall make an assignment for the benefit of its creditors, or shall have a petition in bankruptcy filed for or against it; or

(h) if the Licensee disclaims payment of all Protection Expenses.

9.4 Effect of Termination or Expiration. Any termination or expiration of this Agreement will not relieve either Party of any obligation or liability accrued prior to such termination or expiration.

ARTICLE 10
COVENANTS; REPRESENTATIONS AND WARRANTIES; LIMITATIONS ON UABRF'S OBLIGATIONS

10.1 The Licensee. The Licensee makes the following representations and warranties to UABRF.

(a) The Licensee is a corporation, duly incorporated, validly existing and in good standing under the laws of the State of Delaware.

(b) The Licensee has all necessary corporate power and authority to enter into this Agreement and to consummate the transactions contemplated hereby.

(c) The execution, delivery and performance of this Agreement by the Licensee will not conflict with or result in a breach of, or entitle any party thereto to terminate, an agreement or instrument to which the Licensee is a party, or by which any of the Licensee's assets or properties are bound.

(d) This Agreement has been duly authorized, executed and delivered by the Licensee and constitutes a legal, valid and binding agreement of the Licensee, enforceable against the Licensee in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, moratorium, reorganization or other similar laws affecting creditors' rights generally.

(e) Any activity undertaken with the Licensed Patents and the Licensed Products will be conducted in compliance with all Applicable Laws.

10.2 UABRF. UABRF makes the following representations and warranties to the Licensee.

(a) UABRF is a non-profit corporation, duly incorporated, validly existing and in good standing under the laws of the State of Alabama.

(b) UABRF has all necessary corporate power and authority to enter into this Agreement and to consummate the transactions contemplated hereby.

(c) The execution, delivery and performance of this Agreement by UABRF does not conflict with or contravene its governing documentation, nor will the execution, delivery and performance of this Agreement by UABRF conflict with or result in a breach of, or entitle any party thereto to terminate, an agreement or instrument to which UABRF is a party, or by which any of UABRF's assets or properties are bound.

(d) This Agreement has been duly authorized, executed and delivered by UABRF and constitutes a legal, valid and binding agreement of UABRF, enforceable against UABRF in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, moratorium, reorganization or other similar laws affecting creditors' rights generally.

(e) UABRF has the right to grant the license under this Agreement.

(f) To UABRF's best knowledge and based upon information and representations and warranties made to it by the Inventor, UABRF owns all right, title and interest in the Licensed Patents and there have been no claims made against UABRF asserting the invalidity or non-enforceability of, or with respect to the Licensed Patents, and UABRF is not aware that any such claims exist.

(g) During the Term, UABRF will not undertake any Management Activities with respect to the Licensed Patents unless it is a Disclaimed Licensed Patent.

(h) The performance of Management Activities with respect to a Disclaimed Licensed Patent will not conflict with or result in a breach of any of the terms, conditions, or provisions of, or constitute a default under, this Agreement, and will not give rise to a cause of action by a Third Party against the Licensee, with respect to the remaining Licensed Patents licensed to the Licensee pursuant to this Agreement.

10.3 Limitations on UABRF's Representations and Warranties. Except as set forth in this Agreement, UABRF makes no other representations or warranties of any kind. In particular, UABRF makes no express or implied warranties regarding merchantability, fitness for a particular purpose, non-infringement of the intellectual property rights of third parties, validity and scope of the Licensed Patents, the capability, safety, efficacy, utility or commercial application or usefulness for any purpose of the Licensed Patents, or that it will not grant licenses to one or more Third Parties to make, use or sell products or perform processes that may be similar to and/or compete with any Licensed Product.

10.4 No Obligation of UABRF. UABRF has no obligation to:

(a) supervise, monitor, review or otherwise assume responsibility for the production, manufacture, testing, marketing, sale or disposition of any Licensed Product;

(b) furnish any knowhow or other information relating to the Licensed Patents, other than as specifically provided in this Agreement; or

(c) bring or prosecute legal action against any Person for infringement of the Licensed Patents.

ARTICLE 11
LIABILITY AND INDEMNIFICATION

11.1 No Liability of UABRF. Neither UABRF nor any of its Representatives have any liability whatsoever to the Licensee, or any Sublicensee or any Person for or on account of any injury, loss or damage of any kind or nature, sustained by, assessed or asserted against, or any other liability incurred by or imposed upon the Licensee, or any Sublicensee or any Person, resulting from:

(a) the use of the Licensed Patents by the Licensee or any Sublicensee of the Licensee during the Term;

(b) the production, use, practice, lease, or sale of any Licensed Product by the Licensee or any Sublicensee during the Term;

(c) any advertising or other promotional activities with respect to (a) and/or (b) above by the Licensee or any Sublicensee of the Licensee during the Term; or

(d) the Licensee's compliance with, and performance of the Licensee's representations and warranties given under, and the Licensee's obligations pursuant to, this Agreement.

11.2 Indemnification by the Licensee. The Licensee agrees to indemnify and hold UABRF and its Representatives harmless from and against any and all claims, demands, losses, costs, expenses, deficiencies, liabilities or causes of action of any kind or nature (including, without limitation, reasonable attorneys' fees and other costs and expenses of defense) resulting from:

(a) the use of the Licensed Patents during the Term by the Licensee or any Sublicensee of the Licensee;

(b) the production, use, practice, lease, or sale of any Licensed Product by the Licensee or any Sublicensee of the Licensee during the Term;

(c) any advertising or other promotional activities with respect to (a) and/or (b) above by the Licensee or any Sublicensee of the Licensee during the Term.

ARTICLE 12
MISCELLANEOUS

12.1 Entire Agreement. This Agreement is the sole and entire agreement by and between the Parties regarding the subject matter set forth in this Agreement, and this Agreement supersedes all prior agreements and understandings with respect thereto. All previous negotiations, statements and preliminary instruments by the Parties with respect to the subject matter hereof are merged in this Agreement.

12.2 No Inducement, Each Party hereby acknowledges that in executing this Agreement, such Party has not been induced, persuaded or motivated by any promise or representation made by any other Party, unless expressly set forth in this Agreement.

12.3 Independent Contractors. The relationship between the Parties is that of independent contractors. No Party has the authority to bind or act on behalf of the other Party without obtaining such other Party's prior written consent. The Parties do not intend to create an employer/employee relationship.

12.4 No Third Party Beneficiaries. This Agreement is entered into by and among the Parties for the exclusive benefit of the Parties and permitted assignees. This Agreement is expressly not intended for the benefit of any creditor of a Party, or any other person. Except and only to the extent provided by applicable statute, no such creditor or Third Party shall have any rights under this Agreement or any other agreement between the Parties.

12.5 Assignment. Neither Party shall sell, assign, transfer or otherwise dispose of this Agreement including by operation of law to a Third Party without the prior written consent of the other, which consent shall not be unreasonably withheld. Any attempted assignment of this Agreement not in compliance with the terms of this subsection will be null and void. No assignment will relieve any Party of the performance of any accrued obligation that such Party may then have pursuant to this Agreement.

12.6 Amendments. Any and all modifications to this Agreement shall only be effective and binding if in writing and signed by a duly authorized representative of each Party.

12.7 Notices. Any notice, request, approval or consent required to be given under this Agreement will be sufficiently given if in writing and delivered to a Party in person, by recognized overnight courier or mailed in the United States Postal Service, postage prepaid to the address appearing below such Party's signature on the last page of this Agreement, or at such other address as each Party so designates in accordance with these criteria. Notice shall be deemed effective upon receipt if delivered in person or by overnight courier or five (5) business days after mailing with the United States Postal Service.

12.8 Disputes.

(a) *Equitable Relief.* Either Party may seek equitable and legal relief in the event of a breach or threatened breach by the other Party of its obligations under this Agreement, without the requirement to post a bond.

(b) *Internal Resolution.* In the event of any dispute arising out of or relating to this Agreement or to a breach thereof, including its interpretation, performance or termination, the Parties shall try to settle such conflicts amicably between themselves. In the event that the conflict is not resolved within sixty (60) days after one Party notifies the other Party in writing concerning a dispute or conflict, then the dispute or conflict shall be referred to executive officers of each Party involved for resolving by negotiation in good faith as soon as practicable but no later than sixty (60) days after its referral.

(c) *Mediation.* In the event the Parties are still unable to resolve the dispute or conflict by negotiation, the dispute or conflict may then be submitted by a Party to a mediator, mutually agreed to by the Parties, for nonbinding mediation. The Parties shall cooperate with the mediator in an effort to resolve such dispute.

(d) *Arbitration.* If the dispute is not resolved within sixty (60) days of its submission to the mediator, either Party may submit the dispute for binding arbitration. The arbitration shall be conducted by three (3) arbitrators, one to be appointed by UABRF, one to be appointed by the Licensee and the third to be appointed by the other two arbitrators. The arbitration shall be conducted in accordance with the commercial rules of the American Arbitration Association, which shall administer the arbitration. The arbitration, including the rendering of the award, shall take place in Birmingham, Alabama and shall be the exclusive forum for resolving such dispute. The decision of the arbitrators shall be final and binding upon the Parties and the expense of the arbitration, including, without limitation, the award of attorneys' fees to the prevailing Party, shall be paid as the arbitrators determine.

12.9 Rights and Remedies. The rights and remedies provided by this Agreement are cumulative and the use of any one right or remedy by any Party shall not preclude or waive the right to use any or all other remedies. Such rights and remedies are given in addition to any other rights the Parties may have by law, statute, ordinance or otherwise.

12.10 Waiver. No waiver of a provision, breach or default shall apply to any other provision or subsequent breach or default or be deemed continuous, nor will any single or partial exercise of a right or power preclude any other further exercise of any rights or remedies provided by law or equity.

12.11 Severability. In the event that any covenant, condition, or other provision contained in this Agreement is determined to be invalid, void or illegal, such covenant, condition or other provision shall be deemed deleted from the Agreement and shall not affect the validity of the remaining provisions of this Agreement.

12.12 Force Majeure. Neither Party shall be liable for any failure to perform as required by this Agreement to the extent such failure to perform is due to circumstances reasonably beyond such Party's control, including, without limitation, labor disturbances or labor disputes of any kind; accidents; acts, omissions or delays in acting by any Governmental Authority; civil disorders; insurrections; riots; war; acts of war (whether war be declared or not); terrorism; acts of aggression; acts of God; fire; floods; earthquakes; natural disasters; energy or other conservation measures imposed by law or regulation; explosions; failure of utilities; mechanical breakdowns; material shortages; disease or other such occurrences; provided that the affected Party uses reasonable efforts to overcome or avoid the effects of such cause and continues to perform its obligations to the extent possible.

12.13 Survivability. All rights and obligations of the Parties which by intent or meaning have validity beyond or by their nature apply or are to be performed or exercised after the termination or expiration of this Agreement shall survive the termination or expiration of this Agreement for the period so specified, if any, or for perpetuity.

12.14 Governing Law. This Agreement, and the application or interpretation hereof, shall be governed exclusively by its terms and by the laws of the State of Alabama.

12.15 Jurisdiction. The Licensee consents to the personal jurisdiction of the federal and state courts located in the State of Alabama with respect to all claims or other causes of action arising out of this Agreement.

12.16 Interpretation. Whenever used in this Agreement and when required by the context, the singular number shall include the plural and the plural the singular. Pronouns of one gender shall include all genders, masculine, feminine and neuter.

12.17 Captions. The captions as to contents of particular sections or paragraphs contained in this Agreement are inserted for convenience and are in no way to be construed as part of this Agreement or as a limitation on the scope of the particular sections or paragraphs to which they refer.

12.18 Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original but all of which shall constitute one and the same instrument.

The remainder of this page intentionally left blank

IN WITNESS WHEREOF, the Licensee and UABRF have each caused its duly authorized representative to execute this Agreement, effective as of the Effective Date.

UABRF:
The UAB Research Foundation

By: /s/ Kathy Nugent
Name: Kathy Nugent
Title: Managing Director

Address For Notices:
The UAB Research Foundation
Attention: The Chief Executive Officer
701 20th Street South, AB 770
Birmingham, Alabama 35233

THE LICENSEE:
Vaxin Inc.

By: /s/ William Enright
Name: William Enright
Title: President & CEO

Address For Notices:
Vaxin Inc.
Attention: Bill Enright
19 Firstfield Road
Suite 200
Gaithersburg, MD 20878

EXHIBIT A
LICENSED PATENTS

Title	Country	Serial #/patent # /publication #	Filing Date	Notes	Status
	US PRV	60/055,520	8/13/1997		Expired
	US PRV	60/075,113	2/11/1998		Expired
Vaccination by topical application of genetic vectors	PCT	WO 1999/08713	8/13/1998		Completed
Vaccination by topical application of genetic vectors	US	6,706,693	1/3/2000		Granted
	AU	737717	8/13/1998		Granted
	EP	1015035	8/13/1998	Validated in FR; DE; NL and UK	Granted
	HK	HK1032753	8/13/1998		Granted
	JP	2014-42647	8/13/1998		Pending
	KR	7001342/2008	8/13/1998		Pending
	MX	268619	8/13/1998		Granted
	US PRV	60/132,216	5/3/1999		Expired
Noninvasive genetic immunization, expression products therefrom and uses thereof	US	6,716,823	3/23/2000		Granted
Noninvasive genetic immunization, expression products therefrom and uses thereof	US	6,348,450	5/3/2000		Granted
Noninvasive genetic immunization, expression products therefrom and uses thereof	PCT	WO 00/66179	5/3/2000		Completed
	AU	2009201834	5/3/2000		Pending
	AU	2013260710	5/3/2000		Pending
	CN	ZL00809962.6	5/3/2000		Granted
	EP	1181057	5/3/2000	Validated in FR; DE; IT, NL; ES and UK	Granted
	HK	HK03101756.9	5/3/2000		Granted

Vaccination and vaccine and drug delivery by topical application of vectors and vector extracts recombinant vectors, and noninvasive genetic immunization, expression products therefrom, and uses thereof	PCT	WO 2003/070920	1/17/2003	Completed
	HK	HK1071161	1/17/2003	Granted
Vaccine and drug delivery by topical application of vectors and vector extracts	US	13/961,439	8/7/2013	Pending

EXHIBIT B
DEVELOPMENT AND COMMERCIALIZATION PLAN

DEVELOPMENT AND COMMERCIALIZATION PLAN

Anthrax projected development timeline and milestones:

- [****]

Flu projected development timeline and milestones:

- [****]

***** Confidential treatment requested***

EXHIBIT C
FORM OF ROYALTY REPORT

Licensee: _____ **Agreement No.:** ____
Inventor: _____ **P#: P**_____
Period Covered: From**:** __/__/ 2008 **Through:** __/__/20__
Prepared By: ____ **Date:** _____
Approved By: ____ **Date:** _____

If license covers several major product lines, please prepare a separate report for each line. Then combine all product lines into a summary report.

Report Type: **Single Product Line Report**: _____

Multiproduct Summary Report. Page 1 of __ Pages

Product Line Detail. Line: _____ Trade name: _____ Page: _____

Report Currency: **U. S. Dollars** **Other** _____

Country	Gross Sales	* Less: Allowances	Net Sales	Royalty Rate	Period Royalty Amount This Year	Period Royalty Amount Last Year
U.S.A.						
Canada						
Europe:						
Japan						
Other:						
TOTAL:						

Total Royalty: _____ Conversion Rate: _____ Royalty in U.S. Dollars: $____

The following royalty forecast is non-binding and for UABRF's internal planning purposes only:

Royalty Forecast under This Agreement:

Q1: _____ Q2: _____ Q3: _____ Q4: _____

Exhibit 10.9

First Amendment to Amended and Restated Exclusive License Agreement

This First Amendment to Amended and Restated Exclusive License Agreement (this "First Amendment") is made effective as of October 16, 2015 (the "First Amendment Effective Date") by and between Altimmune, Inc. (f/k/a Vaxin Inc.), a ("Licensee") and The UAB Research Foundation, a non-profit 501(c)(3) corporation incorporated in the State of Alabama and an affiliate of UAB ("UABRF"). Company and UABRF may be each individually referred to as a "party" and collectively, the "parties".

RECITALS

WHEREAS, Company and UABRF previously entered into that certain Amended and Restated Exclusive License Agreement dated effective as of June 2, 2014 ("Agreement"); and

WHEREAS, the parties wish to amend Section 9.3 of the Agreement.

NOW, THEREFORE, for good and valuable consideration, the Parties agree to amend the Agreement as follows:

AGREEMENT

1. All capitalized terms used herein shall bear the meaning ascribed to them in the Agreement unless otherwise defined herein.

2. Section 9.3(d) of the Agreement is hereby deleted in its entirety and replaced as follows:

(d) if by the end of the third (3rd) calendar year after the First Commercial Sale occurred, or by January 1, 2023, whichever comes first, fifty percent (50%) of the minimum royalty payment described in Section 5.8 of this Agreement due in that calendar year is not originating from Net Sales;

3. All other terms and conditions of the Agreement shall remain in full force and effect.

[Signatures on following page]

IN WITNESS WHEREOF, Company and UABRF have each caused its duly authorized representative to execute this First Amendment, effective as of the date written above.

UABRF:
The UAB Research Foundation

By: /s/ Kathy Nugent
Name: Kathy Nugent, Ph.D.
Title: Executive Director

Date Signed: 10-16-15

Company:
Altimmune, Inc.

By: /s/ William Enright
Name: William Enright
Title: President and CEO

Date Signed: 16 October, 2015

Exhibit 10.10

Confidential Treatment Requested — Certain Portions of this Exhibit, Marked as [***], Have Been Omitted Pursuant to a Pending Request for Confidential Treatment and Have Been Filed Separately with the Securities and Exchange Commission

Second Restated License Agreement

VAXIN – CRUCELL

This Second Restated License Agreement ("Agreement") is made and entered into by and between

Crucell Holland B.V., a corporation organized under the laws of the Netherlands, having offices located at Archimedesweg 4, 2333 CN, Leiden, the Netherlands, (hereinafter referred to as "CRUCELL"); and

VAXIN INC., a Delaware corporation, having offices located at 1500 First Avenue North, Birmingham, Alabama, USA 35203 (hereinafter referred to as "VAXIN"),

the parties hereinafter individually referred to as "Party" and collectively as "Parties".

Preamble

WHEREAS, VAXIN is a biotechnology company and has expertise in the field of developing vaccines and non-invasive vaccination delivery systems; and

WHEREAS, CRUCELL, is a biotechnology company, listed on Euronext N.V. Amsterdam and NASDAQ (ticker Symbol: CRXL) that has developed and commercializes technology relating to a human cell line, more specifically known as PER.C6® cell line, that may be used for the production of vaccines amongst other applications; and

WHEREAS, VAXIN and CRUCELL entered into a Research Collaboration And Vaccine Product Development Agreement dated June 2001, and the License and Option Agreement on September 1, 2004, which was terminated effective October 4, 2005, and reinstituted as a Restated License Agreement on March 2, 2006, with an Effective Date of October 4, 2005;

WHEREAS, VAXIN has fallen behind on its license fee payments, and VAXIN and CRUCELL have agreed to reinstate a second amended version of the License Agreement, wherein CRUCELL would receive additional equity in VAXIN, and other rights described herein and in related agreements between the parties, in lieu partially of certain monetary consideration;

NOW, THEREFORE, in consideration of the mutual covenants and promises set forth herein, the Parties, intending to be legally bound, agree as follows:

1 DEFINITIONS

Plural used in this Agreement shall mean singular and vice versa.

The following terms and their cognates shall have the following meanings:

1.1 AFFILIATE means (i) any corporation or business entity of which fifty percent (50%) (or the maximum ownership interest permitted by law) or more of the securities or other ownership interests representing the equity, the voting stock or general partnership interest are owned, controlled or held, directly or indirectly, by a Party; or (ii) any corporation or business entity which, directly or indirectly, owns, controls or holds fifty percent (50%) (or the maximum ownership interest permitted by law) or more of the securities or other ownership interests representing the equity, the voting stock or, if applicable, the general-partnership interest, of a Party, and only for as long as such ownership and/or control exists.

REGISTERED AFFILIATE means a VAXIN AFFILIATE identified in Exhibit 1.1, as such exhibit may be updated, from time to time, by VAXIN.

1.2 CLOSING DATE means March 2, 2006.

1.3 EFFECTIVE DATE means October 4, 2005.

1.3.1 2nd AMENDMENT EFFECTIVE DATE means September 2, 2008.

1.4 FDA means the United States Food and Drug Administration, or a successor thereto.

1.5 FIELD means the prevention and/or treatment of human infectious diseases caused by infectious agents belonging to the belonging to the family of influenza virus and human infections caused by the Bacillus anthracis.

1.6 RESEARCH FIELD means the prevention and/or treatment of (i) Alzheimer's disease in humans, and (ii) Newcastle's disease in poultry.

1.7 FIRST COMMERCIAL SALE means, with respect to any VACCINE manufactured under license to PER.C6® TECHNOLOGY, the first sale for monetary consideration to an unaffiliated third party, by VAXIN, REGISTERED AFFILIATES or a SUBLICENSEE, of a VACCINE in the FIELD approved for commercial sale for administration to a human subject.

1.8 FUNCTIONAL GENOMICS means the identification and/or validation of the biological function(s) of human and animal genes, and/or gene fragments and/or viruses and/or fragments of viruses transcribed from such genes, by means of the construction and use of arrayed collections of said genes and/or gene fragments, in non-phage viral vectors to enable the identification and validation of drug targets, nutriceuticals and/or therapeutics, for the treatment or prevention of human or animal disease(s) and/or the maintenance of nutritional health.

1.9 GENE THERAPY FIELD means the therapy of human subjects by administering to a subject a vector including, but not limited to therapeutic gene sequence(s), the therapeutic effect of which is principally caused by the expression product of said gene sequence(s), provided that such therapy or vector is not intended to raise an immune response against a communicable infectious agent.

1.10 MANUFACTURING COSTS with respect to units of a VACCINE in the FIELD means (i) those costs associated with manufacture of such units which would be viewed by the manufacturing party's independent auditor as costs that could be capitalized on the balance sheet as inventory and would include all raw material (including normal scrap) and actual direct labor costs and a proper accounting of actual manufacturing overhead allocated to such units. It would exclude any excess capacity, unusable material, or any other costs related to such units not deemed to add value or not deemed to be ongoing in the production process for such product; and (ii) with respect to components of such units acquired from a non-AFFILIATE vendor, the amounts paid to the vendor.

1.11 NET SALES shall mean the total of all charges invoiced by VAXIN, REGISTERED AFFILIATES, or SUBLICENSEES (including without limitation duly authorized sales

agents acting on behalf of VAXIN, REGISTERED AFFILIATES or SUBLICENSEES) for the sale of VACCINE in the FIELD in final packaged form suitable for administration to humans to non-affiliated third parties, less the following reasonable and customary deductions to the extent applicable to such invoiced amounts in accordance with generally accepted accounting practices, as consistently applied by both Parties for financial reporting purposes: (i) all trade, cash and quantity credits, discounts, refunds or rebates (including without limitation Medicaid rebates); (ii) amounts for claims, allowances or credits for returns; retroactive price reductions; chargebacks; and (iii) packaging, handling fees and prepaid freight, sales taxes, duties and other governmental charges (including value added tax, but excluding what is commonly known as income taxes), in each case if charged separately on the invoice and paid by the customer. For the avoidance of doubt, Net Sales shall not include sales by VAXIN to its AFFILIATES or to VAXIN's permitted SUBLICENSEES for resale. A "sale" shall also include a transfer or other disposition for consideration other than cash, in which case such consideration shall be valued at the fair market value thereof. Transfers or dispositions for pre-clinical, clinical or regulatory purposes prior to receiving marketing approval are not considered a "sale" for the purpose of calculating NET SALES. Transfers or dispositions for charitable or promotional purposes are not considered a "sale;" provided that such transfers or dispositions are at a price less than twenty percent (20%) over VAXIN's MANUFACTURING COST for the units so transferred or disposed.

1.12 PATENT means granted patents, including utility models and certificates of invention, and reissues, re-examinations, supplementary protection certificates, extensions, and term restorations thereof, and patent applications therefor, including any continuations, continuations-in-parts, divisionals thereof, and the like, including all equivalents worldwide.

1.13 PER.C6® CELL KNOW HOW means PER.C6® CELLS and all materials, information, experience and data, formulae, procedures, results and specifications, in written or electronic form, which are specifically related to PER.C6® CELLS, which (i) are in the possession of CRUCELL at the EFFECTIVE DATE or come into the possession of the Parties during the TERM of this Agreement, (ii) are not generally known (iii) are necessary for the research use of the PER.C6® CELLS, and (iv) are not subject to a third party confidentiality obligation that prevents either Party from disclosing the same.

1.14 PER.C6® CELL LINE or PER.C6® CELL means the cells as deposited under ECACC No. 96022940, and as further described in Exhibit 1.14.

1.15 PER.C6® PATENTS mean PATENTS that CRUCELL owns or controls by license, wherein said license has a sublicense right, or which CRUCELL has a right to assignment and that claim PER.C6® CELLS or the use thereof, as identified on Exhibit 1.15.

1.16 PER.C6® TECHNOLOGY means PER.C6® PATENTS and PER.C6® KNOW HOW. For avoidance of doubt, the PER.C6® TECHNOLOGY licensed under this Agreement includes no rights to influenza A antigens that are essentially the polypeptides limited to an epitope conserved across multiple subtypes of the influenza A virus or any hybrid proteins or conjugates encompassing such epitopes.

1.17 PHASE 1, 2 OR 3 CLINICAL TRIAL means Phase 1, 2 or 3 clinical trials as prescribed by applicable FDA Regulations, 21 CFR 312.21 and 21 CFR 312.85, or its equivalent.

1.18 SECOND CLOSING DATE means October 19, 2009.

1.19 SUBLICENSEE shall mean, with respect to a particular VACCINE in the FIELD, a third party to whom VAXIN has granted a license and/or sublicense under the PER.C6® TECHNOLOGY to develop and use VACCINE in the VACCINE PROGRAM or to offer to sell, import, use or sell such VACCINE in the FIELD for administration to human subjects in need thereof.

1.20 TERM is defined in Section 12.1.

1.20.1 RESEARCH TERM means the period from the EFFECTIVE DATE until the fifth year anniversary of the 2nd AMENDMENT EFFECTIVE DATE, unless the Agreement is terminated prior thereto or the Parties mutually agree to an extension thereof.

1.21 VACCINE means a composition containing VIRAL PARTICLE, in a final form suitable for administration to humans to prevent or treat an infection or disease, by raising an immune response against a communicable infectious agent responsible for such infection or disease.

1.22 VACCINE PROGRAM means the program conducted by or on behalf of VAXIN, consisting of pre-clinical and clinical studies of a VACCINE, and subject to Section 2.1, the manufacture of VACCINE for use therein, where such VACCINE is proprietary to VAXIN (i.e., covered by patent or other intellectual property rights controlled by VAXIN outside the scope of this AGREEMENT) to obtain data for submission to health regulatory authorities in applications for governmental approval to distribute, use, import, offer to sell and sell VACCINE in the FIELD.

1.22.1 RESEARCH VACCINE PROGRAM means the program conducted by or on behalf of VAXIN, consisting of pre-clinical and Phase 1 clinical studies of a VACCINE in the RESEARCH FIELD, and subject to Section 2.1, the manufacture of VACCINE for use therein, where such VACCINE is proprietary to VAXIN (i.e., covered by patent or other intellectual property rights controlled by VAXIN outside the scope of this AGREEMENT) to obtain data for submission to health regulatory authorities in applications for governmental approval to distribute, use, import, offer to sell and sell VACCINE in the RESEARCH FIELD.

1.23 VALID CLAIM of a PATENT means any granted and unexpired PATENT, which has not been revoked or adjudged unenforceable or invalid by a judgment of a court of competent jurisdiction or other governmental agency of competent jurisdiction, from which judgment there is no appeal or no appeal has been taken within the time allowed for appeal, and which have not been disclaimed or admitted to be invalid or unenforceable through disclaimer or other written document executed by CRUCELL, as the case may be, or the successors or assigns of such PATENT.

1.24 VIRAL PARTICLE means any replication-deficient or replicative-defective adenoviral particle, which is capable of replication only in complementing cells, which contains a polynucleotide sequence for a polypeptide derived from either human influenza virus,

Bacillus Anthracis, Newcastle disease virus (NDV), an antigen useful in delaying or reducing the progress of Alzheimer's Disease (which antigen the Parties shall specifically identify in an amendment to the Agreement prior to the initiation of the first Phase 1 human trial), and which is based on the genome of human adenovirus serotypes 2, 5, 7 and 35, chimpanzee adenovirus and canine adenovirus. VIRAL PARTICLE shall not include any polynucleotide sequence for a polypeptide that is limited to an epitope conserved across multiple subtypes of the influenza A virus, such as for example, the highly conserved part of the stem region of the main hemagglutinin viral surface protein of the influenza A virus, which is described in published PCT Patent Application WO 2008/028946, and in Ekiert et al, "Antibody Recognition of a Highly Conserved Influenza Virus Epitope," Science, 10 April 2009, vol. 324. no. 5924, pp. 246 – 251, or any hybrid proteins or conjugates encompassing such epitopes. For avoidance of doubt, polypeptides that comprise all or substantially all of an influenza protein, such as the hemagglutinin viral surface protein of the influenza A virus, are not excluded from the definition of VIRAL PARTICLE.

2 TECHNOLOGY LICENSE GRANTS and VAXIN STOCK WARRANT GRANT

2.1 Non-Exclusive License Grant: Effective upon receipt by CRUCELL of the License Issuance consideration described in Section 3.1, CRUCELL hereby grants to VAXIN a royalty-bearing, worldwide non-exclusive license, with the right to sublicense REGISTERED AFFILIATES subject to Section 2.1.1 and 2.1.2, under the PER.C6® TECHNOLOGY, to use PER.C6® CELLS to develop and use VACCINE in the VACCINE PROGRAM, and to make, use, sell, offer to sell and import VACCINE in the FIELD.

2.1.1 Sublicense Rights. The license grant of Section 2.1 shall also include the right to sublicense third parties the rights to develop and use VACCINE in the VACCINE PROGRAM, and to use, offer for sale, sell and import VACCINE in the FIELD. All obligations of VAXIN hereunder shall apply and be incorporated into all such sublicense agreements, except that VAXIN shall be solely responsible for the payment of all royalties and other fees directly to CRUCELL.

2.1.2 Third Party and REGISTERED AFFILIATE Manufacture. If VAXIN elects to have REGISTERED AFFILIATE or a third party use PER.C6® CELLS to make VIRAL PARTICLES to make VACCINE, then VAXIN shall notify CRUCELL in writing:

2.1.2.1 If such REGISTERED AFFILIATE or third party identified in such notification has been granted a license under the PER.C6® PATENTS and PER.C6® CELL KNOW HOW, then VAXIN shall have the right to designate such REGISTERED AFFILIATE or third party licensee as a manufacturer of VIRAL PARTICLES to make VACCINE for use and sale in the FIELD and may transfer to such REGISTERED AFFILIATE or third party the PER.C6® CELLS and VIRAL PARTICLES to enable such REGISTERED AFFILIATE or third party to conduct such activities.

2.1.2.2 If VAXIN notifies CRUCELL that VAXIN desires to enable a REGISTERED AFFILIATE or third party that has not previously entered into a then-current PER.C6® TECHNOLOGY license with CRUCELL to manufacture VACCINE under Section 2.1, then CRUCELL shall enter into a license agreement with

such REGISTERED AFFILIATE or third party provided such REGISTERED AFFILIATE or third party is (A) a reputable vaccine manufacturer with the capability and resources to provide GMP manufacturing facilities for the production of VIRAL PARTICLES to make VACCINE, and (B) has adequate security safeguards to protect CRUCELL's proprietary interest in PER.C6® CELL KNOW HOW.

2.1.2.3 If the REGISTERED AFFILIATE or third party satisfies conditions (A) and (B) of Section 2.1.2.2, then CRUCELL shall grant such third party a license under the PER.C6® PATENTS and PER.C6® CELL KNOW-HOW to use the PER.C6® CELLS to manufacture a VACCINE in the FIELD, which license shall be incorporated into a technology transfer agreement to be entered into among VAXIN, the REGISTERED AFFILIATE (or third party contract manufacturer) and CRUCELL ("Manufacturing Agreement"). The Manufacturing Agreement (i) shall not contain any provisions requiring such REGISTERED AFFILIATE or third party contract manufacturer to compensate CRUCELL, and (ii) shall contain a grant-back license providing grant-back rights substantially similar to those defined in Section 2.2 herein below. CRUCELL shall proceed with the execution of the Manufacturing Agreement, within thirty (30) calendar days upon CRUCELL's approval of such manufacturer-licensee, which approval shall not be unreasonably withheld or delayed. Subsequent to the grant of such license to such REGISTERED AFFILIATE or third party, VAXIN shall then have the right to deliver the PER.C6® CELLS and VIRAL PARTICLES for the sole purpose of manufacturing VIRAL PARTICLES for making VACCINE for use and sale in the FIELD. A template license draft is attached as Exhibit 2.1.2. Such template would be modified within reason and as appropriate to reflect the need for VAXIN to work with such REGISTERED AFFILIATE or third party manufacturer in connection with developing and/or commercializing VACCINE.

2.2 Grant Back License. VAXIN and its REGISTERED AFFILIATES hereby agree to grant to CRUCELL a non-exclusive license, with the right to sub-license as provided in this Section 2.2, to any and all PATENTS owned and/or controlled by VAXIN and/or REGISTERED AFFILIATES, claiming, and know-how related to, inventions made and/or conceived during the course of, and/or resulting from, activities performed under the licenses in Section 2.1, which inventions relate to and cover the production of VIRAL PARTICLES using PER.C6® CELLS and/or the use, and/or optimization of operating parameters relating to PER.C6® CELLS. To the extent that such PATENTS or know-how extend to cells other than PER.C6® CELLS, CRUCELL's license right under this clause shall be limited to PER.C6® CELLS and the use of, handling of or manufacture thereof, and CRUCELL'S rights shall not extend to the use or sale of the particular VIRAL PARTICLES that are developed by VAXIN and or that are the subject of the licenses under Section 2.1. CRUCELL shall only sublicense its rights under this clause to existing and future licensees under the PER.C6® CELL PATENTS and/or PER.C6® CELL KNOW HOW, which licensees grant to CRUCELL a grant-back license to improvements on substantially the same terms as granted herein, which terms provide for the sublicensing of such improvements to other PER.C6® licensees including VAXIN.

2.3 Restrictions on License Grant to VAXIN. The license grants described in Section 2.1 are restricted to the extent that VAXIN and its REGISTERED AFFILIATES shall not be permitted to engage in the following activities without the prior written consent of CRUCELL:

2.3.1 VAXIN and its REGISTERED AFFILIATES are not licensed, and are not permitted, to use PER.C6® CELLS in or for FUNCTIONAL GENOMICS studies.

2.3.2 VAXIN and its REGISTERED AFFILIATES are not licensed, and are not permitted, to use PER.C6® CELLS for the development of products to prevent or treat diseases caused by chicken anemia virus, or to produce vectors, or expression products thereof, containing all or a part of a chicken anemia virus gene.

2.3.3 VAXIN and its REGISTERED AFFILIATES are not licensed, and are not permitted, to use PER.C6® CELLS for the development of therapeutics in the GENE THERAPY FIELD.

2.3.4 Except for the sole purpose permitted under Section 2.1, VAXIN and its REGISTERED AFFILIATES are not permitted to offer, provide, give access to or to otherwise make available to third parties or to their AFFILIATES that are not identified in Exhibit 1.1, PER.C6® CELLS, and/or PER.C6® KNOW HOW.

2.3.5 Except for the sole purpose of the acts licensed by this Agreement, VAXIN and its REGISTERED AFFILIATES are not permitted to offer or provide services to third parties, or to their AFFILIATES that are not identified in Exhibit 1.1, relating to or using PER.C6® CELLS or PER.C6® KNOW HOW.

2.3.6 The provisions of Sections 2.3.4 and 2.3.5 shall not apply to the extent that VAXIN or its REGISTERED AFFILIATES will be required to provide, give access to or otherwise make available, by applicable law, order or regulation of a governmental agency or court of competent jurisdiction, the results, materials, or know-how obtained relating to PER.C6® CELLS or PER.C6® KNOW HOW.

2.4 No Abrogation of Prior Granted Rights. The restrictions and prohibitions of Section 2.3 shall not abrogate or supersede any rights granted by CRUCELL pursuant to other contracts or licenses in force between or among the Parties.

2.5 Research License Grant: CRUCELL hereby grants to VAXIN a worldwide non-exclusive license under the PER.C6® TECHNOLOGY, to use PER.C6® CELLS to develop and use VACCINE in the RESEARCH FIELD in the RESEARCH VACCINE PROGRAM for the RESEARCH TERM.

2.6 Warrant Issuance to CRUCELL. VAXIN hereby grants to CRUCELL, as of the EFFECTIVE DATE, one hundred thousand (100,000) warrants for VAXIN Series A-1 stock at the exercise price of sixty five cents ($0.65) per share, which warrant may be exercisable at any time prior to seven years from the EFFECTIVE DATE, and in the form of attached Exhibit 2.6.

3 PAYMENTS FOR GRANTED RIGHTS AND MILESTONES

3.1 License Issuance Fee: VAXIN shall provide to CRUCELL the following non-creditable and non-refundable consideration in exchange for the grants of license rights hereunder, subject to Section 5.3:

3.1.1.1 [****] ($[****] dollars), receipt of which CRUCELL hereby acknowledges as paid;

3.1.1.2 On the CLOSING DATE, securities representing VAXIN equity as fully described in the Securities Purchase agreement attached as Exhibit 3.1 which CRUCELL acknowledges as received; and

3.1.1.3 On the SECOND CLOSING DATE, five hundred thousand (500,000) shares of VAXIN Series A-1 stock as fully described in the Securities Purchase agreement attached as Exhibit 3.1.1.3.

3.2 Development Milestones Payments: VAXIN shall pay CRUCELL the following development milestone payments, subject to Section 5.3:

3.2.1 CRUCELL shall be entitled to, and VAXIN shall pay CRUCELL, a milestone payment of [****] ($[****]) dollars, within 30 days of the first patient being dosed in the first Phase 1 Clinical Trial of a Bacillus anthracis VACCINE;

3.2.2 CRUCELL shall be entitled to, and VAXIN shall pay CRUCELL, a milestone payment of [****] ($[****]) dollars, within 30 days of the first patient being dosed in the first Phase 2 Clinical Trial of an influenza VACCINE;

3.2.3 CRUCELL shall be entitled to, and VAXIN shall pay CRUCELL, a milestone payment of [****] ($[****]) dollars, within 30 days of the first patient being dosed in the first Phase 2 Clinical Trial of a Bacillus anthracis VACCINE;

3.2.4 CRUCELL shall be entitled to, and VAXIN shall pay CRUCELL, two milestone payments each of [****] ($[****]) dollars, one payment being due within 30 days of the first patient being dosed in the first Phase 3 Clinical Trial of an influenza VACCINE, and the other payment being due within 30 days of the first patient dosed in the first Phase 3 Clinical Trial of a Bacillus anthracis VACCINE;

3.2.5 VAXIN shall pay CRUCELL two milestone payments of [****] ($[****]) dollars each, one payment being due within 30 days of FDA acceptance to review a filing for an application for marketing authorization, such as the filing of a BLA or its equivalent, for an influenza VACCINE, and the other payment being due within 30 days of FDA acceptance to review a filing for an application for marketing authorization, such as the filing of a BLA or its equivalent, for a Bacillus anthracis VACCINE. VAXIN shall notify CRUCELL in writing of the filing of such applications for marketing authorization within 15 days of such filings;

3.2.6 VAXIN shall pay CRUCELL two milestone payments of [****] ($[****]) dollars each, one payment being due within 30 days of the receiving from the FDA a letter of marketing authorization for an influenza VACCINE, and the other payment being due within 30 days of the receiving from the FDA a letter of marketing authorization for a Bacillus anthracis VACCINE; and

3.2.7 VAXIN shall pay CRUCELL two milestone payments of [****] ($[****]) dollars each, one payment being due within 30 days of the receiving a letter of authorization for marketing outside the United States, for an influenza VACCINE, and the other payment being due within 30 days of the receiving a letter of authorization for marketing outside the United States for a Bacillus anthracis VACCINE.

******* Confidential treatment requested***

4 MAINTENANCE FEES AND ROYALTIES

4.1 Minimum Royalty/Maintenance Fee. On September 1, 2006, and on each anniversary thereof thereafter until September 1, 2007, VAXIN shall pay CRUCELL a minimum royalty of seventy five thousand dollars ($75,000). Beginning on, and due on, October 4, 2010, and on every anniversary thereof thereafter, VAXIN shall pay CRUCELL a minimum royalty of one hundred thousand dollars ($100,000), subject to Section 5.3.

4.2 The minimum royalties are not creditable against any other fee owed under this Agreement, except that in each year earned royalties become due the minimum royalty payments with respect to such year may be credited against the earned royalties owed in that year.

4.3 Earned Royalties. As a consideration for the license granted by CRUCELL to VAXIN in Sections 2.1, VAXIN agrees to pay to CRUCELL royalties on the total NET SALES of VACCINE in the FIELD for the longer of a period of fifteen (15) years following the FIRST COMMERCIAL SALE of VACCINE in the FIELD, or the last to expire PER.C6® PATENT covering the manufacture, use, sale or importation of VACCINE in the FIELD, calculated on a country-by-country basis (hereinafter the "ROYALTY TERM"), at the rate(s) set forth below.

4.3.1 During the ROYALTY TERM, if any acts of making, using or selling or offering for sale of a VACCINE occurs in a country in which a VALID CLAIM of a PER.C6® PATENT covers such act, then the royalty rate is [****] percent ([****]%) of total NET SALES.

4.3.2 Royalty Reduction on CRUCELL PATENT Expiration. If PER.C6® KNOW HOW is used in the use, manufacture or sale of VACCINE in the FIELD in any country, and if the use, manufacture or sale of VACCINE in the FIELD in such country would not infringe, absent this Agreement, a VALID CLAIM of a PER.C6® PATENT in such country, the royalty rate will be [****] percent ([****]%) of total NET SALES.

4.3.3 Royalty Stacking Reduction. If VAXIN is obligated to pay an accumulated royalty rate to all its licensors in a country of more than [****] percent ([****]%) of NET SALES of VACCINE in the FIELD, which NET SALES are also subject to a royalty obligation under Section 4.2.1 or 4.2.2 hereunder, then the royalty rate of Sections 4.2.1 or 4.2.2 may be reduced by subtracting from such royalty rate used to calculate CRUCELL owed royalties [****] of such accumulated third party royalty rate obligation exceeding [****] percent ([****]%), provided that such reduction does not reduce the royalty rate pursuant to Section 4.2.1 or 4.2.2 by more than [****] percent ([****]%) thereof, or to less than [****] percent ([****]%) or [****] percent ([****]%) respectively.

4.4 One royalty shall be due with respect to the sale of the same unit of VACCINE in the FIELD.

4.5 VAXIN Obligations. VAXIN shall be solely responsible for the payment of any royalties, license fees, and milestone or other payments due to third parties under licenses or similar agreements necessary to allow the manufacture, use or sale of any VACCINE in the FIELD.

5 PAYMENTS; BOOKS AND RECORDS

5.1 Royalty Reports and Payments. After the first COMMERCIAL SALE of a VACCINE in the FIELD on which royalties are required, VAXIN agrees to submit quarterly written reports to CRUCELL within sixty (60) days after the end of each calendar quarter, stating in each such report the number, description, and aggregate NET SALES of the VACCINE in the FIELD sold during the calendar quarter upon which a royalty is payable under Section 4 above. Concurrently with the submission of such reports, VAXIN shall pay to CRUCELL royalties at the rate specified in Section 4.

5.2 Method of Payment. All payments due hereunder to CRUCELL shall be paid in dollars in immediately available funds, for CRUCELL's account, to a bank designated in writing by CRUCELL.

5.3 Inflation Index Adjustment: Payments other than earned royalties due herein shall be adjusted on a year to year basis in accordance with increases in the Consumer Price Index (CPI) U.S. Cities Average for All Urban Consumers, as published by the U.S. Department of Labor, Bureau of Labor Statistics. For avoidance of doubt, an amount due in any year shall be adjusted upwards by a factor calculated by comparing the CPI for the year in which the payment is due with the CPI for the previous year, as further described in the formula NP=(1+(NCPI/100 - BCPI/100)) x BP, wherein NP is the new payment amount, NCPI is the new CPI, BCPI is the CPI for the previous year, and BP was the base payment amount of the previous year, provided that in any given year, such increase shall not exceed one and one half percent (1.5%)

5.4 Interest. If any payment under this Agreement is not made by the date on which the same becomes due and payable, the late Party shall owe the other Party interest at the rate of [****] ([****]%) [****] per annum on any outstanding amount until payment is made in full.

5.5 No Refunds. Payments referred to herein shall not be refundable under any circumstances, including but not limited to the termination of this Agreement for whatever reason.

5.6 Currency Conversion. If any currency conversion shall be required in connection with the calculation of royalties hereunder, such conversion shall be made using the following procedures. The rate of currency conversion shall be calculated using a simple monthly period average of the end "spot rates" provided by Brown Brothers Harriman, 59 Wall Street, NY, NY 10005, for each quarter, or if such rate is not available, the spot rate as published by a leading United States commercial bank for such accounting period.

5.7 Taxes. CRUCELL shall pay any and all taxes required by law that are levied on account of royalties or other payments it receives under this Agreement. If laws or regulations require that taxes be withheld, VAXIN will (a) deduct those taxes from the remittable royalty or other payment, (b) pay the taxes to the proper taxing authority, and (c) send evidence of the obligation together with proof of payment to CRUCELL within fifteen (15) days following that payment.

5.8 Records; Inspection. Each party and its AFFILIATES shall keep complete, true, and accurate books of account and records for the purpose of determining the royalty

amounts payable under this Agreement. Such books and records shall be kept at the principal place of business of such party or its AFFILIATE, as the case may be, for at least three (3) years following the end of the calendar quarter to which they pertain. Such records will be open for inspection during such three (3) year period by an independent public accounting firm of national prominence retained by the other party for the purpose of verifying the royalty statements. Such inspections may be made no more than once each calendar year, at reasonable times mutually agreed by VAXIN and CRUCELL. The auditing party's representative or agent will be obliged to execute a reasonable confidentiality agreement prior to commencing any such inspection. Inspections conducted under this Section shall be at the expense of the auditing party, unless a variation or error producing an increase exceeding ten percent (10%) of the amount stated for any period covered by the inspection is established in the course of any such inspection, whereupon all costs relating to the inspection for such period will be paid the party being audited. Any amounts determined to be paid or reimbursed by a party under this Section 5.9 shall be paid promptly within thirty (30) days after completion of such audit.

6 PER.C6® KNOW HOW

6.1 PER.C6® KNOW HOW Transfer. As soon as practicable, but no longer than within thirty (30) days of the receipt of the license fee pursuant to Section 3.1.1, CRUCELL shall provide VAXIN with PER.C6® KNOW HOW.

7 REPORTS AND RECORDS/BMF RIGHTS OF REFERENCE and OBLIGATIONS

7.1 On an annual basis, commencing on the first anniversary of the EFFECTIVE DATE, VAXIN shall notify CRUCELL in writing of the addition and/or deletion of REGISTERED AFFILIATES. VAXIN may add or delete such REGISTERED AFFILIATES from Exhibit 1.1 at any time.

7.2 VACCINE PROGRAM Records. VAXIN and its AFFILIATES shall maintain records of the VACCINE PROGRAM (or cause such records to be maintained) in sufficient detail and in good scientific manner, and at least one copy in the English language, as will properly reflect all work done and results achieved in the performance of the VACCINE PROGRAM (including all data in the form required under any applicable governmental regulations).

7.3 Performance Reporting. VAXIN shall keep CRUCELL regularly informed about the performance and technical data respecting PER.C6® CELLS used to manufacture VACCINE in the FIELD, which VACCINE VAXIN has developed in the VACCINE PROGRAM. VAXIN shall provide CRUCELL on an annual basis within thirty (30) days after the anniversary of the EFFECTIVE DATE, with a summary report of the data relating specifically to PER.C6® CELL performance, including specifically any and all substantial positive and/or negative deviations from the standard established operating, culturing and manufacturing parameters found useful in its application of PER.C6® CELLS for the manufacture of VACCINE in the FIELD. VAXIN shall promptly notify CRUCELL in writing of any substantial negative deviations from established PER.C6® CELL characteristics and/or performance parameters included in PER.C6® KNOW HOW prior to its notification of any other third party entity other than to the appropriate regulatory authorities, such as the FDA. To facilitate the mutually beneficial resolution of any PER.C6® CELL technical performance issue

relating to such a substantial negative deviation, VAXIN hereby agrees to permit CRUCELL's technical personnel reasonable access to relevant technical data to assist in resolving such issues.

7.3.1 Information reported to CRUCELL pursuant to Section 7.3 may be used by CRUCELL to amend and/or annotate its collection of PER.C6® KNOW HOW for delivery to such CRUCELL licensees to whom CRUCELL is permitted to sublicense the license granted under Section 2.2, which PER.C6® KNOW HOW shall only be disclosed under conditions of confidentiality at least as restrictive as those contained herein and in no case under conditions demonstrating less than reasonable care. CRUCELL shall not disclose to any licensee any technical information specifically relating to VACCINE or VIRAL PARTICLES in the FIELD that is developed by VAXIN or its REGISTERED AFFILIATES.

7.4 PER.C6® Biological Master File: VAXIN acknowledges that the PER.C6® Cell Biological Master File ("BMF"), which is filed with the FDA, which is owned by CRUCELL, and which may be filed with other foreign governmental equivalents thereof ("Governmental Authorities") is of crucial importance to the Parties as well as to all other licensees of PER.C6® Cell technology. VAXIN shall have the right to review CRUCELL's copy of the BMF filed with the FDA and other Governmental Authorities after providing CRUCELL with thirty (30) days prior notice (or such shorter time as required by the FDA). VAXIN shall have the right to cross-reference the BMF as may be required for any regulatory submissions to Governmental Authorities. CRUCELL shall provide VAXIN with any and all existing BMF documentation in the possession of CRUCELL relating to PER.C6® Cells as required to support any regulatory submission VAXIN makes to a Governmental Authority in a country where a BMF or its foreign equivalent has not been submitted or is not in effect. VAXIN may request, in writing no more than once a year, that CRUCELL provide information respecting any amendments to the PER.C6® BMF. CRUCELL shall provide VAXIN with an abstract of such amendments within thirty days of receipt of such written request.

7.4.1 VAXIN shall not be entitled to, and agree that they will not characterize, issue Releases or Certificates of Analysis for, or analyze the genome of any PER.C6® Cells, or engage in any research of PER.C6® Cells that concern any safety, toxicity or tumorigenicity of PER.C6® Cells without obtaining the prior written agreement of CRUCELL, the holder of the BMF, provided that, if any Governmental Authority requests additional data or characterization of PER.C6® Cells that CRUCELL chooses not to provide, VAXIN shall have the right to perform its own studies solely as required by the Governmental Authority, and to provide the results to the requesting Governmental Authority.

7.4.2 VAXIN further agrees to use its reasonable efforts to promptly notify CRUCELL of any and all communications to and from Governmental Authorities relating to the safety of PER.C6® Cells, and agrees to consult promptly with CRUCELL to resolve any such concerns with the FDA or such other Governmental Authorities. Noncompliance by VAXIN with the obligation to use its reasonable efforts to promptly notify and consult with CRUCELL in its efforts to resolve any such issues with the FDA or other Governmental Authorities shall be considered to constitute a failure to comply with a material condition or covenant of this Agreement.

7.4.3 CRUCELL shall exert its reasonable efforts to notify VAXIN of any material safety issues concerning the PER.C6® CELLS, which issues are raised by the FDA (or any other Governmental Authorities) or any other regulatory or quality-related information that could adversely affect VACCINE registrations or regulatory approvals, or impact materially clinical trials or commercialization of VACCINE.

8 CONFIDENTIALITY

8.1 All documents, materials and know-how which may be furnished by the disclosing party hereto (the "Disclosing Party") to the receiving Party hereto (the "Recipient") pursuant to this Agreement shall be if suitably marked or designated in tangible form, deemed the Disclosing Party's "Proprietary Information" and, therefore, considered confidential information of the Disclosing Party, and shall not be used by Recipient other than for the purposes licensed under this Agreement and for the exercise of the Recipient's rights under this Agreement. Recipient shall use the same degree of care regarding Disclosing Party's Proprietary Information as it uses in protecting and preserving its own proprietary/confidential information of like kind to avoid disclosure or dissemination thereof, but no less than a reasonable degree of care. Information which is disclosed orally or otherwise than in tangible form shall be considered Proprietary Information if: (a) the information is identified as confidential at the time of disclosure and a written summary is provided to the Recipient within twenty (20) days thereafter, or (b) the information is identified as confidential in writing and provided to the Recipient prior to or at the time of disclosure by the Disclosing Party.

8.2 This confidentiality obligation shall not apply to information if the information: (a) is publicly known or which the Recipient has documentary records which establish such information was known to it (other than by a breach of a confidentiality obligation with respect thereto) prior to this disclosure by the Disclosing Party; (b) subsequently becomes publicly known and/or published through no fault of the Recipient; (c) is independently developed without use or reference to the Disclosing Party's Proprietary Information; (d) is required by operation of law to be disclosed; or (e) is or was brought to the Recipient's attention by a third party who has a legal right to do so.

8.3 Notwithstanding Sections 8.1 and 8.2, the Recipient may disclose Proprietary Information of the other Party to the extent (a) required by law, rule, regulation or court order; (b) as necessary in connection with obtaining regulatory approval of products; and (c) to potential or actual investors or corporate partners, provided that as to disclosures under Section 8.3(a) and (b), such disclosure is made to the extent required for such purpose and that the Recipient makes reasonable efforts to obtain confidential treatment of such disclosure where available; and further provided that as to disclosures under Section 8.3(c), that such persons do not receive confidential PER.C6® KNOW HOW provided to VAXIN by CRUCELL and are bound by obligations of confidentiality and restrictions on use of such information substantially similar to those provided in this Article 8.

9 PUBLICATIONS AND PUBLICITY

9.1 Publicity: Except as required by applicable law or regulation, neither Party shall use the name, associated tradenames and/or trademarks of the other Party in any publicity or advertising without the prior written approval of the other Party, except

that either Party may disclose the existence of the Agreement or make disclosures required by government authorities or rules of a securities exchange. Each Party agrees not to disclose any terms or conditions of this Agreement to any third party without the prior written consent of the other Party, except as required by applicable law or to persons with whom VAXIN or CRUCELL has entered into or proposes to enter into a business relationship related to the subject matter hereof and provided that such persons are subject to appropriate confidentiality agreements.

9.2 Press Releases: CRUCELL shall have the right to publish the existence of this agreement, and any subsequent related agreements, provided VAXIN has an opportunity to review press releases for at least five (5) working days prior to public disclosure. VAXIN shall have the right to publish the existence of this Agreement limited to the recombinant adenoviral vaccine against certain respiratory viruses, including Respiratory Syncytial Virus, and of any subsequent related agreements, upon written approval of CRUCELL, which consent shall not be unreasonably withheld. VAXIN may issue subsequent press releases respecting its influenza and Respiratory Syncytial Virus vaccine programs, provided that press releases relating to the influenza vaccine program must characterize such vaccine as being a recombinant adenoviral vaccine against influenza if the press release also discloses that such vaccine is made using PER.C6® Technology, in a manner of disclosure that CRUCELL has previously approved.

10 INTELLECTUAL PROPERTY

10.1 Defense of Third Party Infringement Claims.

10.1.1 Infringement Claims. If the production, sale or use of any VACCINE in the FIELD developed pursuant to this Agreement results in a claim, suit or proceeding alleging patent infringement against VAXIN or CRUCELL (or their respective AFFILIATES or SUBLICENSEES), such party shall promptly notify the other party hereto in writing setting forth the facts of such claim in reasonable detail. The party subject to such claim shall have the exclusive right to defend and control the defense of any such claim, suit or proceeding, at its own expense, using counsel of its own choice, provided, however, it shall not enter into any settlement which admits or concedes that any aspect of the PATENT or KNOW HOW of the other Party hereto is invalid or unenforceable or otherwise materially adversely affects the other Party, without the prior written consent of such other Party. Such Party shall keep the other Party hereto reasonably informed of all material developments in connection with any such claim, suit or proceeding.

10.2 Enforcement.

10.2.1 Notification. In the event that a Party obtains actual knowledge that a third party is infringing one or more of the PER.C6® PATENTS in the field of VACCINE in the FIELD, it shall promptly notify the other Party of any such infringement.

10.2.2 Control of Suit:

10.2.2.1 As to the infringement of solely owned PER.C6® PATENTS, CRUCELL shall have the exclusive right and sole discretion to effect termination of such infringement, including bringing suit or other proceedings against the infringer in

its own name and VAXIN shall be kept informed at all times of all such proceedings taken by CRUCELL but only so as far as the PER.C6® PATENT in suit relates to a VACCINE in the FIELD. If CRUCELL requests, VAXIN may, at VAXIN's discretion, join with CRUCELL as a party to the lawsuit or other proceeding at CRUCELL' expense; however, CRUCELL shall retain control of the prosecution of such suit or proceedings, as the case may be.

10.2.3 Costs and Monetary Recovery: Except as expressly provided to the contrary, each Party shall bear all its costs incurred in connection with such lawsuit or other proceeding, and consequently shall be entitled to collect and retain for its own account any damages or profits as may be accrued as a result of such lawsuit or other proceeding.

10.3 Disclaimer. Nothing in this Agreement shall be construed as obligating either Party, or giving the VAXIN the right, to proceed against a third party infringer.

10.4 Patent Term Extensions. CRUCELL hereby authorizes VAXIN to (a) provide in any BLA a list of patents that include PER.C6® PATENTS that relate to such VACCINE in the FIELD and such other information, as VAXIN deems appropriate. In the event that any applicable law in any country, including the United States, allows for the extension of any term of any patent included among PER.C6® PATENTS, if VAXIN so requests, CRUCELL shall apply for and use its reasonable efforts to obtain such an extension, or should the law require VAXIN to so apply, CRUCELL shall cooperate with VAXIN to do so. VAXIN and CRUCELL shall cooperate with one another in obtaining any such extensions. CRUCELL agrees to execute such documents, or to arrange to have such documents executed, and take such actions as VAXIN may reasonably request in connection herewith.

11 WARRANTIES, INDEMNIFICATION AND INSURANCE

11.1 Warranties.

11.1.1 Each Party warrants and represents to the other that (i) it has the full right and authority to enter into this Agreement and grant the rights and licenses granted herein; and (ii) it has not previously granted and will not grant any rights in conflict with the rights and licenses granted herein.

11.1.2 CRUCELL warrants and represents to VAXIN that (i) except for certain European Opposition proceedings involving PER.C6® PATENTS, there are no existing or threatened actions, suits or claims pending against it with respect to PER.C6® TECHNOLOGY or its right to enter into and perform its obligations under this Agreement, (ii) it has not previously granted, and will not grant during the term of this Agreement, any right, license or interest in or to the PER.C6® TECHNOLOGY, or any portion thereof, to manufacture, sell or use a VACCINE that is in conflict with the rights or licenses granted under this Agreement, and (iii) the PER.C6® CELLS that CRUCELL provides pursuant to this Agreement shall conform to relevant specifications therefor as provided in Exhibit 1.14.

11.1.3 CRUCELL shall respond diligently to two VAXIN written requests each year for status information on European Opposition proceedings referred to in clause 11.1.2(i).

11.2 CRUCELL Disclaimer. UNLESS EXPRESSLY STATED HEREIN, CRUCELL DISCLAIMS ALL WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AS TO ANY MATTER, INCLUDING BUT NOT LIMITED TO WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, OR MERCHANTABILITY CONCERNING THE PER.C6® KNOW HOW SUPPLIED UNDER THIS AGREEMENT OR ANY OTHER TECHNOLOGY OR PRODUCTS DEVELOPED OR PROVIDED HEREUNDER, AND THAT VAXIN'S USE OF PER.C6® KNOW HOW SUPPLIED UNDER THIS AGREEMENT WILL BE FREE FROM INFRINGEMENT OF PATENTS, COPYRIGHTS, TRADEMARKS OR ANY OTHER RIGHTS OF THIRD PARTIES.

11.3 VAXIN Disclaimer. UNLESS EXPRESSLY STATED HEREIN, VAXIN DISCLAIMS ALL WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AS TO ANY MATTER, INCLUDING BUT NOT LIMITED TO WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, OR MERCHANTABILITY CONCERNING THE KNOW HOW GRANTED BACK PURSUANT TO CLAUSE 2.2 OF THIS AGREEMENT, AND THAT CRUCELL'S USE OF KNOW HOW GRANTED BACK PURSUANT TO CLAUSE 2.2 OF THIS AGREEMENT WILL BE FREE FROM INFRINGEMENT OF PATENTS, COPYRIGHTS, TRADEMARKS OR ANY OTHER RIGHTS OF THIRD PARTIES.

11.4 Indemnification. Except for the willful misconduct or gross negligence of CRUCELL, or breach of CRUCELL's representations under this Agreement. CRUCELL shall not be liable for and VAXIN shall indemnify and hold CRUCELL harmless against any and all liabilities, damages, losses or injury, death, costs, and expenses, whether direct or indirect, consequential, incidental, including attorney's fees, arising from any third party claims resulting from the offer for sale, sale, manufacture, importation and/or use of VACCINE or the PER.C6® KNOW HOW by VAXIN, its licensees, distributors, employees, consultants and investigators, or agents during or after VAXIN-authorized pre-clinical and clinical studies.

11.5 Indemnification Procedure. If CRUCELL (the "Indemnitee") intends to claim indemnification under this Section 11, CRUCELL shall promptly notify VAXIN (the "Indemnitor") of any claim, demand, action, or other proceeding for which the Indemnitee intends to claim such indemnification. The Indemnitor shall have the right to participate in, and to the extent the Indemnitor so desires jointly with any other Indemnitor similarly noticed, to assume the defense thereof with counsel selected by the Indemnitor; provided, however, that the Indemnitee shall have the right to retain its own counsel, with the reasonable fees and expenses to be paid by the Indemnitor, if representation of the Indemnitee by the counsel retained by the Indemnitor would be inappropriate due to actual or potential differing interests between the Indemnitee and any other Party represented by such counsel in such proceedings. The indemnity obligations under this Section 11 shall not apply to amounts paid in settlement of any claim, demand, action or other proceeding if such settlement is effected without the prior express written consent of the Indemnitor, which consent shall not be unreasonably withheld or delayed. The failure to deliver notice to the Indemnitor within a reasonable time after notice of any such claim or demand, or the commencement of any such action or other proceeding, if prejudicial to its ability to defend such claim, demand, action or other proceeding, shall relieve such Indemnitor of any liability to the Indemnitee under this Section 11 with respect thereto, but the omission so to deliver notice to the Indemnitor shall not relieve it of

any liability that it may have to the Indemnitee otherwise than under this Section 11. The Indemnitor may not settle or otherwise consent to an adverse judgment in any such claim, demand, action or other proceeding, that diminishes the rights or interests of the Indemnitee without the prior express written consent of the Indemnitee, which consent shall not be unreasonably withheld or delayed. The Indemnitee, its employees and agents, shall reasonably cooperate with the Indemnitor and its legal representatives in the investigation of any claim, demand, action or other proceeding covered by this Section 11.

11.6 Insurance. VAXIN, or its designated manufacturer and/or sublicensee, shall obtain and maintain commercial general liability insurance, including products/completed operations liability and contractual liability insurance to protect CRUCELL, its trustees, officers, directors, employees and agents under the indemnification provided hereunder. VAXIN shall maintain this insurance to protect against claims covered by the indemnification hereunder, even if asserted subsequent to the TERM of this Agreement.

12 TERM AND TERMINATION

12.1 Term. This Agreement shall become effective as of the EFFECTIVE DATE and, unless earlier terminated pursuant to the other provisions of this Section 12, shall continue in full force and effect on a product-by-product and country-by-country basis, until the later of the expiration of the last to expire PER.C6® PATENT licensed hereunder and applicable to such VACCINE in the FIELD, or fifteen (15) years from the date of the first commercial sale of each specific VACCINE in the FIELD. After the TERM of this Agreement expires, the license granted to VAXIN under Section 2.1 shall continue on a fully paid basis with respect to any know-how rights then-existing that are included within the PER.C6® KNOW-HOW.

12.2 Termination for Cause. Either party to this Agreement may terminate this Agreement in the event the other party shall be in material breach of, or defaulted in the performance of, any of its material obligations hereunder, and such default shall have continued uncured for sixty (60) days after written notice thereof was provided to the Party-in-breach by the Party not-in-breach. Any termination shall become effective at the end of such sixty (60) day period unless the party-in-breach (or any other party on its behalf) has cured any such breach or default prior to the expiration of the sixty (60) day period.

12.3 Termination for Convenience or Otherwise.

12.3.1 Entire Agreement. VAXIN and CRUCELL may terminate this Agreement upon mutual agreement at any time.

12.3.2 Unilateral Termination by VAXIN. VAXIN may decide to terminate this Agreement on ninety (90) days prior written notice to CRUCELL.

12.3.3 Termination Upon Insolvency. This license shall terminate, at either CRUCELL's or VAXIN's option, if the other Party pledges substantially all of its assets for the benefit of creditors, pledges any portion of PER.C6® KNOW-HOW for the benefit of creditors.

12.4 CRUCELL's Unilateral Right to Terminate. CRUCELL shall have the right to unilaterally terminate this Agreement if VAXIN does not pay any milestone or maintenance fee, which is rightfully due, payment on sixty (60) day written notice.

12.5 Rights and Obligations on Term, Termination, or Suspension.

12.5.1 Termination by either Party pursuant to this Article shall not prejudice any other remedy that a Party might have. Termination of this Agreement for any reason shall not release any party hereto from any liability which, at the time of such termination, has already accrued to the other party or which is attributable to a period prior to such termination nor preclude either party from pursuing all rights and remedies it may have hereunder or at law or in equity with respect to any breach of this Agreement.

12.5.2 Upon termination of this Agreement by either Party other than its expiration or termination by VAXIN for CRUCELL's material breach of this Agreement, at CRUCELL's written request, VAXIN and its AFFILIATES shall destroy all supplies of PER.C6® CELLS, and all documents describing PER.C6® KNOW-HOW, and shall promptly thereafter confirm such destruction in writing to CRUCELL.

12.6 Return of Materials. Upon any termination of this Agreement, except for the material breach of CRUCELL, upon request by the other Party, VAXIN and CRUCELL shall promptly return to the other all Confidential Information received from the other (except one copy of which may be retained for archival purposes).

12.7 Stock on Hand. In the event this Agreement is terminated for any reason, VAXIN and its respective AFFILIATES and SUBLICENSEES shall have the right to sell or otherwise dispose of the stock of any VACCINE in the FIELD subject to this Agreement then on hand, subject to the payment of royalties as provided herein.

12.8 In the event of expiration or termination of this Agreement for any reason, Sections 2.2, 5, 7.2-7.4.2, 8, 9, 10, 11 (except for 11.1), 12 and 13 shall survive such expiration or termination.

12.9 Termination by either Party pursuant to this Article shall not prejudice any other remedy that a Party might have.

13 Assignment

13.1 Assignment. The obligations under this Agreement may not be assigned, and the duties under this Agreement may not be delegated, without the prior written consent of each Party, to any third party, and are binding upon and shall inure to the benefit of the Parties hereto, their representatives, successors and permitted assigns, provided that VAXIN may assign its rights and delegate its duties hereunder to an Affiliate of VAXIN, or, except as provided for in subsection 13.2 below in connection with a merger, consolidation, reorganization or sale of substantially all of VAXIN's assets to which this Agreement relates without the prior consent of CRUCELL. Any purported assignment without the written prior consent of each Party shall be null and void.

13.2 Restrictions on Assignment and Sublicense. Subject to Section 13.3, for a period of five (5) years from the EFFECTIVE DATE, without the prior approval of CRUCELL, VAXIN may neither assign nor sublicense any of its rights under this Agreement to any of the legal entities, or their affiliates, listed in 13.2.1 to 13.2.:

13.2.1 [****];

13.2.2 [****];

13.2.3 [****];

13.2.4 [****]; or

13.2.5 [****].

13.3 Sanofi-Aventis Limitations. (a) VAXIN is permitted to sublicense marketing rights of its VACCINES in the FIELD to Sanofi-Aventis and/or its AFFILIATES. (b) The restriction of Section 13.2.1 shall be in force until the earlier of termination of the Crucell/Sanofi-Pasteur influenza agreement, or five (5) years after the EFFECTIVE DATE.

14 Miscellaneous

14.1 Entire Agreement. This Agreement, and the attached Stock Purchase Agreement, each having the same EFFECTIVE DATE, contains the entire agreement of the Parties regarding the subject matter hereof and supersedes all prior agreements, understandings, and negotiations regarding the same. This Agreement may not be changed, modified, amended, or supplemented except by a written instrument signed by both Parties hereto.

14.2 Severability. If any portion of this Agreement shall be finally determined by any court or governmental agency of competent jurisdiction to violate applicable law or otherwise not to conform to requirements of law, then the remainder of the Agreement shall not be affected thereby; provided, however, that if any provision hereof is invalid or unenforceable, then a suitable and equitable provision shall be substituted therefor in order to carry out, so far as may be valid and enforceable, the intent and purpose of the Agreement including the invalid or unenforceable provision.

14.3 Force Majeure. Neither Party shall be liable to the other for any failure or delay in performance under this Agreement which is due in whole or in part directly or indirectly to any cause of any nature beyond reasonable control of such Party. In the event of delays in performance due to any such cause, the dates for performance will be postponed by a period of time equal to the delay period.

14.4 Independent Contractors. Both Parties are independent contractors under this Agreement. Nothing contained in this Agreement is intended nor is to be construed so as to constitute VAXIN and CRUCELL as partners or joint venturers with respect to this Agreement. Neither Party hereto shall have any express or implied right or authority to assume or create any obligations on behalf of or in the name of the other Party or to bind the other Party to any contract, agreement, or undertaking with any third party.

14.5 Notices. Any notices required by this Agreement shall be in writing, shall specifically refer to this Agreement and shall be forwarded to the respective addresses set forth below unless subsequently changed by written notice to the other Party:

If to CRUCELL:
Manager Business Development
CRUCELL Holland B.V.
Archimedesweg 4
2333 CN Leiden
The Netherlands
Fax:

If to VAXIN:
VAXIN INC.
1500 First Avenue North,
Birmingham, Alabama
USA 35203
Attn. CEO

14.6 Headings. The paragraph headings herein are inserted for convenience only and shall not be construed to limit or modify the scope of any provision of this Agreement.

14.7 Waiver. No failure or successive failures on the part of either party, its successors or permitted assigns, to enforce any covenant or agreement, and no waiver or successive waivers on its or their part of any condition of this Agreement, shall operate as a discharge of such covenant, agreement or condition, or render the same invalid, or impair the right of either party, its successors and permitted assigns to enforce the same in the event of any subsequent breach or breaches by the other party, its successors or permitted assigns.

14.8 Choice of Law. This Agreement shall be exclusively governed by and construed in accordance with the laws of The Netherlands. All disputes arising out of or in relation to this Agreement shall, to the exclusion of all others, be referred exclusively to the competent Dutch Courts, and the Parties agree that judgments of the competent Dutch Court are enforceable in any court having jurisdiction over the Parties.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representative as of the date and year written below.

CRUCELL HOLLAND B.V.

By: /s/ Ronald H.P. Brus
Name: Ronald H.P. Brus
Title: President & CEO

Date: November 5, 2009

VAXIN INC.

By: /s/ William Enright
Name: William Enright
Title: President & CEO

Date: 20 October 2009

Exhibit 1.1

Exhibit 1.14 – Cell Line Designation: PER.C6® Cells

Origin of the Cell Line

PER.C6® cells are Human Embryo Retinoblasts transformed with E1 sequences (nt.459 - 3510) of human Adenovirus type 5. The estimated copy number is five. The Adenovirus type 5 E1A region in the construct is driven by the human PGK promoter. The poly(A) sequences are derived from hepatitis B virus.

Cell Line Passage History

Research Master Cell Bank coded A068-016 was stored at passage number 29 on 17 January 1996. Research Working Cell Bank coded A068-043W was generated from A068-016 and stored at passage number 33 on 7 February 1996. The cell banks are stored in the vapour phase of liquid nitrogen at 1.0E+06 cells in 1 mL DMEM/9% FBS/10% DMSO.

Components Used For Culture of the Cells

Dulbecco's Modified Eagle Medium supplemented with 10% (v/v) of Fetal Bovine Serum (US origin) and, optionally, 10 mM $MgCl_2$. Porcine Pancreas Trypsin/EDTA (porcine parvovirus tested) was used for passaging cells.

Quality Control

All work on the development of PER.C6® cells carried out at CRUCELL Holland has been carried out under controlled conditions. The data have been reviewed by QA CRUCELL Holland. The research Master Cell Bank and research Working Cell Bank have been tested by GLP-inspected contract testing companies. All recorded data mentioned have been reviewed by Quality Assurance, CRUCELL Holland BV, Leiden. All final reports have been reviewed for compliance to the specifications and pertinent relevant regulatory requirements from the US and EEC.

Safety Tests on the PER.C6® Human Adenoviral Producer Cell Line

Research Master Cell Bank

Test	Result
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]

***** Confidential treatment requested***

[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]

Research Working Cell Bank

Test	Result
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]

EXHIBIT 1.15 – PER.C6® PATENTS

National patents corresponding to PCT/NL96/00244 (filed June 14, 1996; published January 3, 1997; WO 97/0032). The currently filed members of patent family "Improved materials derived from recombinant adenovirus to be used in gene therapy" claim priorities based on European priority documents EP 95201611.1 (filed June 15, 1995) and EP 95201728.3 (filed June 26, 1995). Members of this patent (application) family further include:

Application	Filing Date	Published	Publication
PCT/NL00/00263	April 25, 2000	February 1, 2001	WO 01/07571
PCT/EP00/07074	July 19, 2000	January 25, 2001	WO 01/05945
EP 96917735.1	June 14, 1996	January 3, 1997	EP 0 833 934
EP 00965872.5	July 19, 2000	February 1, 2001	EP 1 198 559
US 09/918,029	July 30, 2001		
US 10/125,751	April 18, 2002		
US 10/136,139	May 1, 2002		
US 10/038,271	October 23, 2001		
US 10/219,414	August 15, 2002		
US 10/618,526	July 11, 2003		
CA 2,222,140	June 14, 1996		
IL 122614	June 14, 1996		
JP 502948/1997	June 14, 1996		
KR 97-709411	June 14, 1996		
NZ 515107	April 25, 2000		
AU 19705/01	June 14, 1996		
AU 44371/00	October 23, 2001		
US 5,994,128	(Issued November 30, 1999)		
US 6,033,908	(Issued March 7, 2000)		
US 6,238,893	(Issued May 29, 2001)		
US 6,265,212	(Issued July 24, 2001)		
US 6,306,652	(Issued October 23, 2001)		
US 6,395,519	(Issued May 28, 2002)		
US 6,602,706	(Issued August 5, 2003)		
US 6,692,966	(Issued February 17, 2004)		
AU 731767	(Issued July 19, 2001)		

PER.C6® PATENT also includes the patent rights of Transgene S.A., US Patent 6,040,174 "Defective adenoviruses and corresponding complementation lines", Imler et al, inventors, issued March 21, 2000, and cognate patents thereto, only as far as the E1-(only) complementing cell lines and E1-(only) deleted vectors are concerned:

Application	Filing Date	Published	Publication
PCT/FR94/00624	May 27, 1994	December 8, 1994	WO94/28152
EP 98124036.9	May 27, 1994	June 2, 1999	EP 0 919 624
EP 98124038.5	May 27, 1994	June 2, 1999	EP 0 919 626
EP 01111931.0	May 27, 1994	October 31, 2001	EP 1 149 916
FR 9306482	May 28, 1993		
US 09/218,143	December 22, 1998		

US 09/725,720	November 30, 2000	December 6, 2001	US 20010049136
US 09/739,007	December 19, 2000	Sep 11, 2003	US 20030170885
CA 2,141,212	May 27, 1994		
AU 727970	January 4, 2001		
JP 07509616	May 27, 1994		
EP 0 652 968 B1	(Issued February 21, 2001)		
EP 0 919 625 B1	(Issued September 20, 2002)		
EP 0 919 627 B1	(Issued September 20, 2000)		
US 6,040,174	(Issued March 21, 2000)		
US 6,133,028	(Issued October 17, 2000)		

PER.C6® PATENT also includes the patent rights as claimed in the national patents corresponding to international patent application PCT/US00/27946 to GenVec, Inc. (filed October 10, 2000; published October 18, 2001: WO 01/77304), which application claims priority from application US 09/545,385 (filed April 7, 2000). Members of this patent (application) family further include:

Application	Filing Date	Published	Publication
EP 00973440.1	October 10, 2000	October 18, 2001	EP 1 268 748
CA 2,400,746	October 10, 2000		
AU 11944/01	October 10, 2000		
US 6,168,941	(Issued January 2, 2001)		

Exhibit 2.1.2

Manufacturing License Agreement Template

COMPANY – CRUCELL

28.

This Manufacturing License Agreement ("Agreement") is made and entered into by and between

CRUCELL Holland B.V., a corporation organized under the laws of the Netherlands, having offices located at Archimedesweg 4, 2333 CN, Leiden, the Netherlands, (hereinafter referred to as "CRUCELL");

Company, a corporation, having offices located at (hereinafter referred to as "COMPANY"); and

VAXIN INC., a Delaware corporation, having offices located at 1500 First Avenue North, Birmingham, Alabama, USA 35203 (hereinafter referred to as "VAXIN"),

the parties hereinafter individually referred to as "Party" and collectively as "Parties".

Preamble

WHEREAS, CRUCELL, is a biotechnology company, listed on Euronext N.V. Amsterdam and NASDAQ (ticker Symbol: CRXL) that has developed and commercializes technology relating to a human cell line, more specifically known as PER.C6® cell line, that may be used for the production of vaccines amongst other applications; and

WHEREAS, VAXIN and CRUCELL entered into a Second Restated License Agreement having an Effective Date of October 4, 2005, for the development of adenoviral vaccines against influenza virus, which vaccines are made using PER.C6® cell line technology; and

WHEREAS, COMPANY is a reputable with the capability and resources to provide GMP manufacturing facilities for the production of VIRAL PARTICLES to make VACCINE;

WHEREAS, COMPANY and VAXIN have entered into an agreement providing for COMPANY to manufacture VACCINE for VAXIN;

WHEREAS, COMPANY, and, COMPANY requires a license under PER.C6® TECHNOLOGY from CRUCELL to manufacture VACCINE on behalf of COMPANY and to enable VAXIN to transfer PER.C6® KNOW HOW to COMPANY;

WHEREAS, CRUCELL is willing to grant to COMPANY a license, under PER.C6® TECHNOLOGY, and limited to manufacturing VACCINE on behalf of VAXIN.

NOW, THEREFORE, in consideration of the mutual covenants and promises set forth herein, the Parties, intending to be legally bound, agree as follows:

1 DEFINITIONS

Plural used in this Agreement shall mean singular and vice versa.

The following terms and their cognates shall have the following meanings:

1.1 EFFECTIVE DATE means the date last written on the signature page.

1.2 FDA means the United States Food and Drug Administration, or a successor thereto.

1.3 FIELD means the prevention and/or treatment of human infectious diseases caused by infectious agents belonging to the family of Influenza virus and human infections caused by the Bacillus anthracis.

1.4 FUNCTIONAL GENOMICS means the identification and/or validation of the biological function(s) of human and animal genes, and/or gene fragments and/or viruses and/or fragments of viruses transcribed from such genes, by means of the construction and use of arrayed collections of said genes and/or gene fragments, in non-phage viral vectors to enable the identification and validation of drug targets, nutriceuticals and/or therapeutics, for the treatment or prevention of human or animal disease(s) and/or the maintenance of nutritional health.

1.5 GENE THERAPY FIELD means the therapy of human subjects by administering to a subject a vector including, but not limited to therapeutic gene sequence(s), the therapeutic effect of which is principally caused by the expression product of said gene sequence(s), provided that such therapy or vector is not intended to raise an immune response against a communicable infectious agent.

1.6 PATENT means granted patents, including utility models and certificates of invention, and reissues, re-examinations, supplementary protection certificates, extensions, and term restorations thereof, and patent applications therefor, including any continuations, continuations-in-parts, divisionals thereof, and the like, including all equivalents worldwide.

1.7 PER.C6® CELL KNOW HOW means PER.C6® CELLS and all materials, information, experience and data, formulae, procedures, results and specifications, in written or electronic form, which are specifically related to PER.C6® CELLS, which (i) are in the possession of CRUCELL at the EFFECTIVE DATE or come into the possession of the Parties during the TERM of this Agreement, (ii) are not generally known (iii) are necessary for the research use of the PER.C6® CELLS, and (iv) are not subject to a third party confidentiality obligation that prevents either Party from disclosing the same.

1.8 PER.C6® CELL LINE or PER.C6® CELL means the cells as deposited under ECACC No. 96022940, and as further described in Exhibit 1.8.

1.9 PER.C6® PATENTS mean PATENTS that CRUCELL owns or controls by license, wherein said license has a sublicense right, or which CRUCELL has a right to assignment and that claim PER.C6® CELLS or the use thereof, as identified on Exhibit 1.9.

1.10 PER.C6® TECHNOLOGY means PER.C6® PATENTS and PER.C6® KNOW HOW.

1.11 TERM is defined in Section 9.1.

1.12 VACCINE means a composition containing VIRAL PARTICLE, in a final form suitable for administration to humans to prevent or treat an infection or disease, by raising an immune response against a communicable infectious agent responsible for such infection or disease.

1.13 VACCINE PROGRAM means the program conducted by or on behalf of VAXIN, consisting of pre-clinical and clinical studies of a VACCINE and the manufacture of VACCINE for use therein, where such VACCINE is proprietary to VAXIN (i.e., covered by patent or other intellectual property rights controlled by VAXIN outside the scope of this AGREEMENT) to obtain data for submission to health regulatory authorities in applications for governmental approval to distribute, use, import, offer to sell and sell VACCINE in the FIELD.

1.14 VALID CLAIM of a PATENT means any granted and unexpired PATENT, which has not been revoked or adjudged unenforceable or invalid by a judgment of a court of competent jurisdiction or other governmental agency of competent jurisdiction, from which judgment there is no appeal or no appeal has been taken within the time allowed for appeal, and which have not been disclaimed or admitted to be invalid or unenforceable through disclaimer or other written document executed by CRUCELL, as the case may be, or the successors or assigns of such PATENT.

1.15 VIRAL PARTICLE means any replication-deficient or replicative-defective adenoviral particle, which is capable of replication only in complementing cells, which contains a polynucleotide sequence for a polypeptide derived from either human influenza virus or respiratory syncytial virus, and which is based on the genome of human adenovirus serotypes 2, 5, 7 and 35, chimpanzee adenovirus and canine adenovirus.

2 LICENSE GRANTS

2.1 Non-Exclusive License Grant: CRUCELL hereby grants to COMPANY a license under the PER.C6® PATENTS and PER.C6® CELL KNOW-HOW to use the PER.C6® CELLS to manufacture a VACCINE in the FIELD solely on behalf of VAXIN under the PER.C6® TECHNOLOGY rights CRUCELL granted to VAXIN.

2.2 Grant Back License. COMPANY agrees to grant to CRUCELL a non-exclusive license, with the right to sub-license as provided in this Section 2.2, to any and all PATENTS owned and/or controlled by COMPANY, claiming, and know-how related to, inventions made and/or conceived during the course of, and/or resulting from, activities performed under the licenses in Section 2.1, which inventions relate to and cover the production of VIRAL PARTICLES using PER.C6® CELLS and/or the use, and/or optimization of operating parameters relating to PER.C6® CELLS. To the extent that such PATENTS or know-how extend to cells other than PER.C6® CELLS, CRUCELL's license right under this clause shall be limited to adenoviral E1-immortalized human cell lines, and the use of, handling of or manufacture thereof, and CRUCELL'S rights shall not extend to the use or sale of the particular VIRAL PARTICLES that are developed by VAXIN and or that are the subject of the licenses under Section 2.1. CRUCELL shall only sublicense its rights under this clause to existing and future licensees under the PER.C6® CELL PATENTS and/or PER.C6® CELL KNOW HOW, which licensees grant to CRUCELL a grant-back license to improvements on substantially the same terms as granted herein, which terms provide for the sublicensing of such improvements to other PER.C6® licensees including VAXIN.

2.3 Restrictions on License Grant to COMPANY. The license grants described in Section 2.1 are restricted to the extent that COMPANY shall not be permitted to engage in the following activities without the prior written consent of CRUCELL:

2.3.1 COMPANY is not licensed, and is not permitted, to use PER.C6® CELLS in or for FUNCTIONAL GENOMICS studies.

2.3.2 COMPANY is not licensed, and is not permitted, to use PER.C6® CELLS for the development of products to prevent or treat diseases caused by chicken anemia virus, or to produce vectors, or expression products thereof, containing all or a part of a chicken anemia virus gene.

2.3.3 COMPANY is not licensed, and is not permitted, to use PER.C6® CELLS for the development of therapeutics in the GENE THERAPY FIELD.

2.3.4 Except for the sole purpose permitted under Section 2.1, COMPANY is not permitted to offer, provide, give access to or to otherwise make available to third parties that PER.C6® CELLS, and/or PER.C6® KNOW HOW.

2.3.5 Except for the sole purpose of the acts licensed by this Agreement, COMPANY is not permitted to offer or provide services to third parties, relating to or using PER.C6® CELLS or PER.C6® KNOW HOW.

2.3.6 The provisions of Sections 2.3.4 and 2.3.5 shall not apply to the extent that VAXIN or COMPANY will be required to provide, give access to or otherwise make available, by applicable law, order or regulation of a governmental agency or court of competent jurisdiction, the results, materials, or know-how obtained relating to PER.C6® CELLS or PER.C6® KNOW HOW.

2.4 No Abrogation of Prior Granted Rights. The restrictions and prohibitions of Section 2.3 shall not abrogate or supersede any rights granted by CRUCELL pursuant to other contracts or licenses in force between or among the Parties.

3 PER.C6® KNOW HOW

3.1 PER.C6® KNOW HOW Transfer. As soon as practicable, but no longer than within thirty (30) days of the EFFECTIVE DATE, VAXIN shall provide COMPANY with PER.C6® KNOW HOW.

4 REPORTS AND RECORDS/BMF RIGHTS OF REFERENCE and OBLIGATIONS

4.1 VACCINE Records. COMPANY shall maintain records of the development and manufacturing records respecting VACCINE made using PER.C6® TECHNOLOGY (or cause such records to be maintained) in sufficient detail and in good scientific manner, and at least one copy in the English language, as will properly reflect all work done and results achieved in the performance of the COMPANY's responsibilities pursuant to its obligations under contract with VAXIN, VAXIN's sublicensees and or successors (including all data in the form required under any applicable governmental regulations).

4.2 Performance Reporting. COMPANY shall keep CRUCELL regularly informed about the performance and technical data respecting PER.C6® CELLS used to manufacture VACCINE in the FIELD, which VACCINE VAXIN has developed in the VACCINE PROGRAM. COMPANY shall provide CRUCELL on an annual basis within thirty (30) days after the anniversary of the EFFECTIVE DATE, with a summary report of the data relating specifically to PER.C6® CELL performance, including specifically any and all substantial positive and/or negative deviations from the standard established operating, culturing and manufacturing parameters found useful in its application of PER.C6® CELLS for the manufacture of VACCINE in the FIELD. VAXIN shall promptly notify CRUCELL in writing of any substantial negative deviations from established PER.C6® CELL characteristics and/or performance parameters included in PER.C6® KNOW HOW prior to its notification of any other third party entity other than to the appropriate regulatory authorities, such as the FDA. To facilitate the mutually beneficial resolution of any PER.C6® CELL technical performance issue relating to such a substantial negative deviation, COMPANY hereby agrees to permit CRUCELL's technical personnel reasonable access to relevant technical data to assist in resolving such issues.

4.2.1 Information reported to CRUCELL pursuant to Section 5.2 may be used by CRUCELL to amend and/or annotate its collection of PER.C6® KNOW HOW for delivery to such CRUCELL licensees to whom CRUCELL is permitted to sublicense the license granted under Section 2.2, which PER.C6® KNOW HOW shall only be disclosed under conditions of confidentiality at least as restrictive as those contained herein and in no case under conditions demonstrating less than reasonable care. CRUCELL shall not disclose to any licensee any technical information specifically relating to VACCINE or VIRAL PARTICLES in the FIELD that is developed by VAXIN.

4.3 PER.C6® Biological Master File: COMPANY acknowledges that the PER.C6® Cell Biological Master File ("BMF"), which is filed with the FDA, which is owned by CRUCELL, and which may be filed with other foreign governmental equivalents thereof ("Governmental Authorities") is of crucial importance to the Parties as well as to all other licensees of PER.C6® Cell technology. COMPANY shall have the right to review CRUCELL's copy of the BMF filed with the FDA and other Governmental Authorities after providing CRUCELL with thirty (30) days prior notice (or such shorter time as required by the FDA). COMPANY shall have the right to cross-reference the BMF as may be required for any regulatory submissions to Governmental Authorities respecting VACCINE developed by VAXIN.

4.3.1 COMPANY shall not be entitled to, and agree that they will not characterize, issue Releases or Certificates of Analysis for, or analyze the genome of any PER.C6® Cells, or engage in any research of PER.C6® Cells that concern any safety, toxicity or tumorigenicity of PER.C6® Cells without obtaining the prior written agreement of CRUCELL, the holder of the BMF.

4.3.2 COMPANY further agrees to use its reasonable efforts to promptly notify CRUCELL of any and all communications to and from Governmental Authorities relating to the safety of PER.C6® Cells, and agrees to consult promptly with CRUCELL to resolve any such concerns with the FDA or such other Governmental Authorities. Noncompliance by COMPANY with the obligation to use its reasonable efforts to

promptly notify and consult with CRUCELL in its efforts to resolve any such issues with the FDA or other Governmental Authorities shall be considered to constitute a failure to comply with a material condition or covenant of this Agreement.

4.3.3 CRUCELL shall exert its reasonable efforts to notify COMPANY of any material safety issues concerning the PER.C6® CELLS, which issues are raised by the FDA (or any other Governmental Authorities) or any other regulatory or quality-related information that could adversely affect VACCINE registrations or regulatory approvals, or impact materially clinical trials or commercialization of VACCINE

5 CONFIDENTIALITY

5.1 All documents, materials and know-how which may be furnished by the disclosing party hereto (the "Disclosing Party") to the receiving Party (the "Recipient") pursuant to this Agreement shall be if suitably marked or designated in tangible form, deemed the Disclosing Party's "Proprietary Information" and, therefore, considered confidential information of the Disclosing Party, and shall not be used by Recipient other than for the purposes licensed under this Agreement and for the exercise of the Recipient's rights under this Agreement. Recipient shall use the same degree of care regarding Disclosing Party's Proprietary Information as it uses in protecting and preserving its own proprietary/confidential information of like kind to avoid disclosure or dissemination thereof, but no less than a reasonable degree of care. Information which is disclosed orally or otherwise than in tangible form shall be considered Proprietary Information if: (a) the information is identified as confidential at the time of disclosure and a written summary is provided to the Recipient within twenty (20) days thereafter, or (b) the information is identified as confidential in writing and provided to the Recipient prior to or at the time of disclosure by the Disclosing Party. **[To be modified in final agreement to allow Vaxin to disclose to manufacturer and vice versa without breaching this Agreement.]**

5.2 This confidentiality obligation shall not apply to information if the information: (a) is publicly known or which the Recipient has documentary records which establish such information was known to it (other than by a breach of a confidentiality obligation with respect thereto) prior to this disclosure by the Disclosing Party; (b) subsequently becomes publicly known and/or published through no fault of the Recipient; (c) is independently developed without use or reference to the Disclosing Party's Proprietary Information; (d) is required by operation of law to be disclosed; or (e) is or was brought to the Recipient's attention by a third party who has a legal right to do so.

5.3 Notwithstanding Sections 5.1 and 6.2, the Recipient may disclose Proprietary Information of the other Party to the extent (a) required by law, rule, regulation or court order; and (b) as necessary in connection with obtaining regulatory approval of products; and such disclosure is made to the extent required for such purpose and that the Recipient makes reasonable efforts to obtain confidential treatment of such disclosure where available. **[To be modified in final form to allow disclosures between Vaxin and its manufacturer.]**

6 PUBLICATIONS AND PUBLICITY

6.1 Publicity: Except as required by applicable law or regulation, neither Party shall use the name, associated tradenames and/or trademarks of the other Party in any publicity or advertising without the prior written approval of the other Party, except that either Party may disclose the existence of the Agreement or make disclosures required by government authorities or rules of a securities exchange. Each Party agrees not to disclose any terms or conditions of this Agreement to any third party without the prior written consent of the other Party, except as required by applicable law, or in the case of COMPANY, to VAXIN.

6.2 Press Releases: CRUCELL shall have the right to publish the existence of this agreement, and any subsequent related agreements, provided VAXIN has an opportunity to review to review press releases for at least five (5) working days prior to public disclosure. COMPANY shall have the right to publish the existence of this Agreement limited to the recombinant adenoviral vaccine against certain respiratory viruses, including Respiratory Syncytial Virus, and of any subsequent related agreements, upon written approval of CRUCELL and VAXIN, which consent shall not be unreasonably withheld. COMPANY may issue subsequent press releases respecting its influenza and Respiratory Syncytial Virus vaccine programs, provided that press releases relating to the influenza vaccine program must characterize such vaccine as being a recombinant adenoviral vaccine against influenza if the press release also discloses that such vaccine is made using PER.C6® Technology, in a manner of disclosure that CRUCELL and VAXIN have previously approved.

7 INTELLECTUAL PROPERTY

7.1 Defense of Third Party Infringement Claims.

7.1.1 Infringement Claims. If the production, sale or use of any VACCINE in the FIELD developed pursuant to this Agreement results in a claim, suit or proceeding alleging patent infringement against COMPANY or CRUCELL, such party shall promptly notify the other party hereto in writing setting forth the facts of such claim in reasonable detail. The party subject to such claim shall have the exclusive right to defend and control the defense of any such claim, suit or proceeding, at its own expense, using counsel of its own choice, provided, however, it shall not enter into any settlement which admits or concedes that any aspect of the PATENT or KNOW HOW of the other Party hereto is invalid or unenforceable or otherwise materially adversely affects the other Party, without the prior written consent of such other Party. Such Party shall keep the other Party hereto reasonably informed of all material developments in connection with any such claim, suit or proceeding.

7.2 Enforcement.

7.2.1 Notification. In the event that a Party obtains actual knowledge that a third party is infringing one or more of the PER.C6® PATENTS in the field of VACCINE in the FIELD, it shall promptly notify the other Party of any such infringement.

7.2.2 Control of Suit:

7.2.2.1 As to the infringement of solely owned PER.C6® PATENTS, CRUCELL shall have the exclusive right and sole discretion to effect termination of such infringement, including bringing suit or other proceedings against the infringer in its own name and COMPANY and VAXIN shall be kept informed at all times of all such proceedings taken by CRUCELL but only so as far as the PER.C6® PATENT in suit relates to a VACCINE in the FIELD. If CRUCELL requests, subject to VAXIN's approval, COMPANY may, at COMPANY's discretion, join with CRUCELL as a party to the lawsuit or other proceeding at CRUCELL' expense; however, CRUCELL shall retain control of the prosecution of such suit or proceedings, as the case may be.

7.2.3 Costs and Monetary Recovery: Except as expressly provided to the contrary, each Party shall bear all its costs incurred in connection with such lawsuit or other proceeding, and consequently shall be entitled to collect and retain for its own account any damages or profits as may be accrued as a result of such lawsuit or other proceeding.

7.3 Disclaimer. Nothing in this Agreement shall be construed as obligating either Party, or giving the COMPANY the right, to proceed against a third party infringer.

8 WARRANTIES, INDEMNIFICATION AND INSURANCE

8.1 Warranties.

8.1.1 Each Party warrants and represents to the other that (i) it has the full right and authority to enter into this Agreement and grant the rights and licenses granted herein; and (ii) it has not previously granted and will not grant any rights in conflict with the rights and licenses granted herein.

8.1.2 CRUCELL warrants and represents to COMPANY that (i) except for certain European Opposition proceedings respecting certain PER.C6® PATENTS, there are no existing or threatened actions, suits or claims pending against it with respect to PER.C6® TECHNOLOGY or its right to enter into and perform its obligations under this Agreement, (ii) it has not previously granted, and will not grant during the term of this Agreement, any right, license or interest in or to the PER.C6® TECHNOLOGY, or any portion thereof, to manufacture a VACCINE that is in conflict with the rights or licenses granted under this Agreement, and (iii) the PER.C6® CELLS that CRUCELL provides pursuant to this Agreement shall conform to relevant specifications therefor as provided in Exhibit 1.8. (which specifications shall be in writing and provided to VAXIN at the time CRUCELL delivers such cells to VAXIN).

8.1.3 CRUCELL shall respond diligently to two COMPANY written requests each year for status information on European Opposition proceedings referred to in clause 8.1.2(i).

8.2 CRUCELL Disclaimer. UNLESS EXPRESSLY STATED HEREIN, CRUCELL DISCLAIMS ALL WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED,

AS TO ANY MATTER, INCLUDING BUT NOT LIMITED TO WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, OR MERCHANTABILITY CONCERNING THE PER.C6® KNOW HOW SUPPLIED UNDER THIS AGREEMENT OR ANY OTHER TECHNOLOGY OR PRODUCTS DEVELOPED OR PROVIDED HEREUNDER, AND THAT COMPANY'S USE OF PER.C6® KNOW HOW SUPPLIED UNDER THIS AGREEMENT WILL BE FREE FROM INFRINGEMENT OF PATENTS, COPYRIGHTS, TRADEMARKS OR ANY OTHER RIGHTS OF THIRD PARTIES.

8.3 COMPANY Disclaimer. UNLESS EXPRESSLY STATED HEREIN, COMPANY DISCLAIMS ALL WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AS TO ANY MATTER, INCLUDING BUT NOT LIMITED TO WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, OR MERCHANTABILITY CONCERNING THE KNOW HOW GRANTED BACK PURSUANT TO CLAUSE 2.2 OF THIS AGREEMENT, AND THAT CRUCELL'S USE OF KNOW HOW GRANTED BACK PURSUANT TO CLAUSE 2.2 OF THIS AGREEMENT WILL BE FREE FROM INFRINGEMENT OF PATENTS, COPYRIGHTS, TRADEMARKS OR ANY OTHER RIGHTS OF THIRD PARTIES.

8.4 Indemnification. Except for the willful misconduct or gross negligence of CRUCELL, or breach of CRUCELL's representations under this Agreement. CRUCELL shall not be liable for and COMPANY shall indemnify and hold CRUCELL harmless against any and all liabilities, damages, losses or injury, death, costs, and expenses, whether direct or indirect, consequential, incidental, including attorney's fees, arising from any third party claims resulting from the offer for sale, sale, manufacture, importation and/or use of VACCINE or the PER.C6® KNOW HOW by COMPANY, its licensees, distributors, employees, consultants and investigators, or agents during or after VAXIN-authorized pre-clinical and clinical studies.

8.5 Indemnification Procedure. If CRUCELL (the "Indemnitee") intends to claim indemnification under this Section 8, CRUCELL shall promptly notify COMPANY (the "Indemnitor") of any claim, demand, action, or other proceeding for which the Indemnitee intends to claim such indemnification. The Indemnitor shall have the right to participate in, and to the extent the Indemnitor so desires jointly with any other Indemnitor similarly noticed, to assume the defense thereof with counsel selected by the Indemnitor; provided, however, that the Indemnitee shall have the right to retain its own counsel, with the reasonable fees and expenses to be paid by the Indemnitor, if representation of the Indemnitee by the counsel retained by the Indemnitor would be inappropriate due to actual or potential differing interests between the Indemnitee and any other Party represented by such counsel in such proceedings. The indemnity obligations under this Section 8 shall not apply to amounts paid in settlement of any claim, demand, action or other proceeding if such settlement is effected without the prior express written consent of the Indemnitor, which consent shall not be unreasonably withheld or delayed. The failure to deliver notice to the Indemnitor within a reasonable time after notice of any such claim or demand, or the commencement of any such action or other proceeding, if prejudicial to its ability to defend such claim, demand, action or other proceeding, shall relieve such Indemnitor of any liability to the Indemnitee under this Section 8 with respect thereto, but the omission so to deliver notice to the Indemnitor shall not relieve it of any liability that it may have to the Indemnitee otherwise than under this Section 8.

The Indemnitor may not settle or otherwise consent to an adverse judgment in any such claim, demand, action or other proceeding, that diminishes the rights or interests of the Indemnitee without the prior express written consent of the Indemnitee, which consent shall not be unreasonably withheld or delayed. The Indemnitee, its employees and agents, shall reasonably cooperate with the Indemnitor and its legal representatives in the investigation of any claim, demand, action or other proceeding covered by this Section 8.

8.6 Insurance. COMPANY shall obtain and maintain commercial general liability insurance, including products/completed operations liability and contractual liability insurance to protect CRUCELL, its trustees, officers, directors, employees and agents under the indemnification provided hereunder. COMPANY shall maintain this insurance to protect against claims covered by the indemnification hereunder, even if asserted subsequent to the TERM of this Agreement.

9 TERM AND TERMINATION

9.1 Term. This Agreement shall become effective as of the EFFECTIVE DATE and, unless earlier terminated pursuant to the other provisions of this Section 9, shall continue in full force and effect until the expiration or termination of the Second Restated License Agreement between VAXIN and CRUCELL having the EFFECTIVE DATE of October 4, 2005, provided that after the term of this Agreement so expires, the license granted to COMPANY under Section 2.1 shall continue on a fully paid basis with respect to any know-how rights then-existing that are included within the PER.C6® KNOW-HOW.

9.2 Termination for Cause. Either party to this Agreement may terminate this Agreement in the event the other party shall be in material breach of, or defaulted in the performance of, any of its material obligations hereunder, and such default shall have continued uncured for sixty (60) days after written notice thereof was provided to the party-in-breach by the party not in-breach. Any termination shall become effective at the end of such sixty (60) day period unless the party-in-breach (or any other party on its behalf) has cured any such breach or default prior to the expiration of the sixty (60) day period.

9.3 Termination for Convenience or Otherwise.

9.4 Entire Agreement. VAXIN and CRUCELL may terminate this Agreement upon mutual agreement at any time.

9.5 Unilateral Termination by VAXIN. VAXIN or COMPANY may decide to terminate this Agreement on ninety (90) days prior written notice to CRUCELL.

9.6 CRUCELL's Unilateral Right to Terminate. CRUCELL shall have the right to unilaterally terminate this Agreement, on sixty (60) day written notice, if VAXIN does not pay any milestone or maintenance fee payment obligation pursuant to the Second Restated License Agreement.

9.7 Termination Upon Insolvency. This license shall terminate, at either CRUCELL's or VAXIN's option, if VAXIN or COMPANY pledges substantially all of its assets for the benefit of creditors, or pledges any portion of PER.C6® CELL KNOW HOW for the benefit of creditors.

9.8 Rights and Obligations on Term, Termination, or Suspension.

9.8.1 Termination by either Party pursuant to this Article shall not prejudice any other remedy that a Party might have. Termination of this Agreement for any reason shall not release any party hereto from any liability which, at the time of such termination, has already accrued to the other party or which is attributable to a period prior to such termination nor preclude either party from pursuing all rights and remedies it may have hereunder or at law or in equity with respect to any breach of this Agreement.

9.8.2 Upon termination of this Agreement by either Party, at CRUCELL's written request, COMPANY shall destroy all supplies of PER.C6® CELLS, and all documents describing PER.C6® KNOW-HOW, and shall promptly thereafter confirm such destruction in writing to CRUCELL.

9.9 Return of Materials. Upon any termination of this Agreement, upon request of the other Party, COMPANY and CRUCELL shall promptly return to the other all Confidential Information received from the other (except one copy of which may be retained for archival purposes).

9.10 Stock on Hand. In the event this Agreement is terminated for any reason, the COMPANY and VAXIN shall have the right to sell or otherwise dispose of the stock of any VACCINE in the FIELD subject to this Agreement then on hand.

9.11 In the event of expiration or termination of this Agreement for any reason, Sections 2.2, 2.3, 4, 5, 6, 7, 8, 9, and 10 shall survive such expiration or termination.

9.12 Termination by either Party pursuant to this Article shall not prejudice any other remedy that a Party might have.

10 Miscellaneous

10.1 Entire Agreement. This Agreement, the Second Restated License Agreement, and all documents incorporated by reference therein, contain the entire agreement of the Parties regarding the subject matter hereof and supersedes all prior agreements, understandings, and negotiations regarding the same. This Agreement may not be changed, modified, amended, or supplemented except by a written instrument signed by both Parties hereto.

10.2 Severability. If any portion of this Agreement shall be finally determined by any court or governmental agency of competent jurisdiction to violate applicable law or otherwise not to conform to requirements of law, then the remainder of the Agreement shall not be affected thereby; provided, however, that if any provision hereof is invalid or unenforceable, then a suitable and equitable provision shall be substituted therefor in order to carry out, so far as may be valid and enforceable, the intent and purpose of the Agreement including the invalid or unenforceable provision.

10.3 Force Majeure. No Party shall be liable to another Party for any failure or delay in performance under this Agreement which is due in whole or in part directly or indirectly to any cause of any nature beyond reasonable control of such Party. In the event of delays in performance due to any such cause, the dates for performance will be postponed by a period of time equal to the delay period.

10.4 Independent Contractors. Each of the Parties is an independent contractor under this Agreement. Nothing contained in this Agreement is intended nor is to be construed so as to constitute COMPANY and CRUCELL as partners or joint venturers with respect to this Agreement. Neither Party hereto shall have any express or implied right or authority to assume or create any obligations on behalf of or in the name of the other Party or to bind the other Party to any contract, agreement, or undertaking with any third party.

10.5 Notices. Any notices required by this Agreement shall be in writing, shall specifically refer to this Agreement and shall be forwarded to the respective addresses set forth below unless subsequently changed by written notice to the other Party:

If to CRUCELL:
Business Development
CRUCELL Holland B.V.
Archimedesweg 4
2333 CN Leiden
The Netherlands
Fax:

If to COMPANY:

With a copy to VAXIN:
VAXIN, INC.
500 Beacon Parkway, West,
Birmingham, Alabama
USA 35209
Attn. CEO

10.6 Headings. The paragraph headings herein are inserted for convenience only and shall not be construed to limit or modify the scope of any provision of this Agreement.

10.7 Assignment and Successors Rights/Waiver. This obligations under this Agreement may not be assigned, and the duties under this Agreement may not be delegated, to any third party, without the prior written consent of every Party, and are binding upon and shall inure to the benefit of the Parties hereto, their representatives, successors and permitted assigns. Any purported assignment without the written prior consent of each Party shall be null and void. No failure or successive failures on the part of any Party, its successors or permitted assigns, to enforce any covenant or agreement, and no waiver or successive waivers on its or their part of any condition of this Agreement, shall operate as a discharge of such covenant, agreement or

condition, or render the same invalid, or impair the right of any Party, its successors and permitted assigns to enforce the same in the event of any subsequent breach or breaches by another Party, its successors or permitted assigns.

10.8 Choice of Law. This Agreement shall be exclusively governed by and construed in accordance with the laws of The Netherlands. All disputes arising out of or in relation to this Agreement shall, to the exclusion of all others, be referred exclusively to the competent Dutch Courts, and the Parties agree that judgments of the competent Dutch Court are enforceable in any court having jurisdiction over the Parties.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized representative as of the date and year written below.

Title:

CRUCELL HOLLAND B.V. **Date:** _____

By: _____ **VAXIN**
Name:
Title: **Name:**

Date: _____ **Title:**

COMPANY **Date:** _____

By: _____
Name:

Exhibit 1.8 – Cell Line Designation: PER.C6® Cells

Origin of the Cell Line

PER.C6® cells are Human Embryo Retinoblasts transformed with E1 sequences (nt.459 - 3510) of human Adenovirus type 5. The estimated copy number is five. The Adenovirus type 5 E1A region in the construct is driven by the human PGK promoter. The poly(A) sequences are derived from hepatitis B virus.

Cell Line Passage History

Research Master Cell Bank coded A068-016 was stored at passage number 29 on 17 January 1996. Research Working Cell Bank coded A068-043W was generated from A068-016 and stored at passage number 33 on 7 February 1996. The cell banks are stored in the vapour phase of liquid nitrogen at 1.0E+06 cells in 1 mL DMEM/9% FBS/10% DMSO.

Components Used For Culture of the Cells

Dulbecco's Modified Eagle Medium supplemented with 10% (v/v) of Fetal Bovine Serum (US origin) and, optionally, 10 mM $MgCI_2$. Porcine Pancreas Trypsin/EDTA (porcine parvovirus tested) was used for passaging cells.

Quality Control

All work on the development of PER.C6® cells carried out at CRUCELL Holland has been carried out under controlled conditions. The data have been reviewed by QA CRUCELL Holland. The research Master Cell Bank and research Working Cell Bank have been tested by GLP-inspected contract testing companies. All recorded data mentioned have been reviewed by Quality Assurance, CRUCELL Holland BV, Leiden. All final reports have been reviewed for compliance to the specifications and pertinent relevant regulatory requirements from the US and EEC.

Safety Tests on the PER.C6® Human Adenoviral Producer Cell Line

Research Master Cell Bank

Test	Result
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]

[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]

Research Working Cell Bank

Test	Result
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]
[****]	[****]

EXHIBIT 1.9 – PER.C6® PATENTS

National patents corresponding to PCT/NL96/00244 (filed June 14, 1996; published January 3, 1997: WO 97/0032). The currently filed members of patent family "Improved materials derived from recombinant adenovirus to be used in gene therapy" claim priorities based on European priority documents EP 95201611.1 (filed June 15, 1995) and EP 95201728.3 (filed June 26, 1995). Members of this patent (application) family further include:

Application	Filing Date	Published	Publication
PCT/NL00/00263	April 25, 2000	February 1, 2001	WO 01/07571
PCT/EP00/07074	July 19, 2000	January 25, 2001	WO 01/05945
EP 96917735.1	June 14, 1996	January 3, 1997	EP 0 833 934
EP 00965872.5	July 19, 2000	February 1, 2001	EP 1 198 559
US 09/918,029	July 30, 2001		
US 10/125,751	April 18, 2002		
US 10/136,139	May 1, 2002		
US 10/038,271	October 23, 2001		
US 10/219,414	August 15, 2002		
US 10/618,526	July 11, 2003		
CA 2,222,140	June 14, 1996		
IL 122614	June 14, 1996		
JP 502948/1997	June 14, 1996		
KR 97-709411	June 14, 1996		
NZ 515107	April 25, 2000		
AU 19705/01	June 14, 1996		
AU 44371/00	October 23, 2001		
US 5,994,128	(Issued November 30, 1999)		
US 6,033,908	(Issued March 7, 2000)		
US 6,238,893	(Issued May 29, 2001)		
US 6,265,212	(Issued July 24, 2001)		
US 6,306,652	(Issued October 23, 2001)		
US 6,395,519	(Issued May 28, 2002)		
US 6,602,706	(Issued August 5, 2003)		
US 6,692,966	(Issued February 17, 2004)		
AU 731767	(Issued July 19, 2001)		

PER.C6® PATENT also includes the patent rights of Transgene S.A., US Patent 6,040,174 “Defective adenoviruses and corresponding complementation lines”, Imler et al, inventors, issued March 21, 2000, and cognate patents thereto, only as far as the E1-(only) complementing cell lines and E1-(only) deleted vectors are concerned:

Application	Filing Date	Published	Publication
PCT/FR94/00624	May 27, 1994	December 8, 1994	WO94/28152
EP 98124036.9	May 27, 1994	June 2, 1999	EP 0 919 624
EP 98124038.5	May 27, 1994	June 2, 1999	EP 0 919 626
EP 01111931.0	May 27, 1994	October 31, 2001	EP 1 149 916
FR 9306482	May 28, 1993		
US 09/218,143	December 22, 1998		
US 09/725,720	November 30, 2000	December 6, 2001	US 20010049136
US 09/739,007	December 19, 2000	Sep 11, 2003	US 20030170885
CA 2,141,212	May 27, 1994		
AU 727970	January 4, 2001		
JP 07509616	May 27, 1994		
EP 0 652 968 B1	(Issued February 21, 2001)		
EP 0 919 625 B1	(Issued September 20, 2002)		
EP 0 919 627 B1	(Issued September 20, 2000)		
US 6,040,174	(Issued March 21, 2000)		
US 6,133,028	(Issued October 17, 2000)		

PER.C6® PATENT also includes the patent rights as claimed in the national patents corresponding to international patent application PCT/US00/27946 to GenVec, Inc. (filed October 10, 2000; published October 18, 2001: WO 01/77304), which application claims priority from application US 09/545,385 (filed April 7, 2000). Members of this patent (application) family further include:

Application	Filing Date	Published	Publication
EP 00973440.1	October 10, 2000	October 18, 2001	EP 1 268 748
CA 2,400,746	October 10, 2000		
AU 11944/01	October 10, 2000		
US 6,168,941	(Issued January 2, 2001)		

Confidential Treatment Requested — Certain Portions of this Exhibit, Marked as [***], Have Been Omitted Pursuant to a Pending Request for Confidential Treatment and Have Been Filed Separately with the Securities and Exchange Commission

AMENDMENT NO. 1 TO SECOND RESTATED LICENSE AGREEMENT

This Amendment No. 1 to the Second Restated License Agreement is made and effective as of September 25, 2015 by and between **Crucell Holland B.V.**, a corporation organized under the laws of the Netherlands, having offices at Archimedesweg 4-6, 2333 CN Leiden, the Netherlands ("CRUCELL") and **Altimmune Inc.**, a Delaware corporation, having offices located at 19 Firstfield Road, Gaithersburg, Maryland, USA 20878, formerly VAXIN INC., a Delaware corporation, having offices located at 1500 First Avenue North, Birmingham, Alabama, U.S.A. ("VAXIN").

Recitals

Whereas CRUCELL and VAXIN entered into a Second Restated License Agreement effective as of October 4, 2005 (the "Agreement");

Whereas CRUCELL and VAXIN acknowledge that the Research Term has expired and the Research License granted in Section 2.5 of the Agreement has also expired; and

Whereas CRUCELL and VAXIN desire to further amend the Agreement on the terms and conditions set forth below in accordance with Section 14.1 of the Agreement.

NOW THEREFORE, for and in consideration of the mutual covenants contained herein, CRUCELL and VAXIN hereby agree as follows:

1. Definitions and Cross References. Unless otherwise specified herein, each capitalized term shall have the meaning assigned to it in the Agreement and each reference to a Section or Article shall refer to the corresponding Section or Article in the Agreement.

The following definition is hereby added as a new definition under the Agreement:

"STRATEGIC PARTNER" means a company with whom VAXIN will enter or has entered into an agreement to use the PER.C6® CELLS solely in its own facilities to manufacture VIRAL PARTICLES to make the VACCINE for VAXIN's use in the FIELD and which is approved as such in writing by CRUCELL and identified together with the services performing for VAXIN in Exhibit 1.1 to this Agreement.

2. Section 1.13. Section 1.13 is amended to read as follows:

"1.13 PER.C6® CELL KNOW HOW or PER.C6® KNOW HOW means all materials, information, experience and data, formulae, procedures, results and specification, in written or electronic form, which are (i) specifically related to PER.C6® CELLS, (ii) in the possession of the Parties during the TERM, (iii) are not generally known, and (iv) are not subject to a third party confidentiality obligation that prevents either Party from disclosing the same."

3. Section 2.1 to 2.3. Section 2.1 to 2.3 are deleted and replaced entirely with the following:

"2.1 Non-Exclusive License Grant: Effective upon receipt by CRUCELL of the License Issuance consideration described in Section 3.1, CRUCELL grants to VAXIN a royalty-bearing, worldwide non-exclusive license, with the limited right to sublicense as specified in 2.1.1, under the PER.C6® TECHNOLOGY, to use the PER.C6® CELLS in its own facilities to develop and use VACCINE in the VACCINE PROGRAM, and to make, use, sell, offer to sell and import VACCINE in the FIELD. CRUCELL also grants to VAXIN a royalty-bearing, worldwide non-exclusive license, with no rights to sublicense, subject to the terms of 2.2.2, under the PER.C6® TECHNOLOGY, to use the PER.C6 CELLS solely in the facilities of STRATEGIC PARTNERS (as defined below) to manufacture VIRAL PARTICLES to make the VACCINE for VAXIN's use in the FIELD. VAXIN warrants that all obligations of VAXIN under this Agreement shall apply and be incorporated into the agreement by and between VAXIN and its STRATEGIC PARTNER(S) and REGISTERED AFFILIATES for the manufacture of the VIRAL PARTICLES to make the VACCINE for VAXIN's use in the FIELD. VAXIN shall remain responsible in full for all actions and omissions by its STRATEGIC PARTNERS and REGISTERED AFFILIATES.

2.1.1 VAXIN may sublicense, without the right to further sublicense, its rights to develop and use VACCINE in the VACCINE PROGRAM, to use, offer for sale, sell and import VACCINE in the FIELD to a third party; provided that (i) VAXIN notifies CRUCELL timely thereof, (ii) such sublicense is under a written agreement containing terms no less restrictive than those herein, including that the SUBLICENSEE grants CRUCELL substantially the same grant back license as set out in Section 2.2 of this Agreement and (iii) the sublicense terminates automatically upon termination of this AGREEMENT. All obligations of VAXIN under this Agreement shall apply and be incorporated into all such sublicense agreements, except that VAXIN shall remain solely responsible for the payment of all royalties and other fees directly to CRUCELL and VAXIN shall remain responsible in full for all actions and omissions by its SUBLICENSEE. For clarity, nothing in this Section 2.1.2 permits VAXIN to transfer PER.C6® KNOW HOW or PER.C6® CELLS to a third party, except that VAXIN may, after obtaining the prior written approval of CRUCELL, provide the PER.C6® KNOW HOW to a SUBLICENSEE if the PER.C6® KNOW HOW is explicitly required to obtain regulatory approval from the regulatory authorities for the sale of the VACCINE in the respective country.

2.1.2. If VAXIN elects to have a REGISTERED AFFILIATE to manufacture VIRAL PARTICLES to make the VACCINE, VAXIN shall timely notify CRUCELL thereof and such REGISTERED AFFILIATE shall be added as such to this Agreement by amending Annex 1.1. If VAXIN wish a third party to become a STRATEGIC PARTNER to manufacture VIRAL PARTICLES to make the VACCINE, VAXIN shall timely request CRUCELL for its approval on the respective third party becoming a STRATEGIC PARTNER and CRUCELL shall respond within 60 (sixty) days to such request. CRUCELL shall not unreasonably withheld its consent, provided that such STRATEGIC PARTNER is (A) a reputable vaccine manufacturer with the capability and resources to provide GMP manufacturing facilities for the production of VIRAL PARTICLES to make the VACCINE, and (B) has adequate security safeguards to protect CRUCELL's proprietary interest in PER.C6® CELLS and PER.C6® CELL KNOW HOW.

2.1.3. If VAXIN uses a STRATEGIC PARTNER to manufacture VIRAL PARTICLES, VAXIN shall execute a written agreement with said STRATEGIC PARTNER containing terms no less restrictive than those herein, including that the STRATEGIC PARTNER grants substantially the same grant back license to CRUCELL as Section 2.2 of this Agreement, and providing that the agreement with STRATEGIC PARTNER terminates automatically upon termination of this AGREEMENT.

2.2 Grant Back License. VAXIN grants to CRUCELL an irrevocable, non-exclusive, sublicensable license, to PER.C6 KNOW-HOW controlled by VAXIN. VAXIN grants to CRUCELL an irrevocable, non-exclusive license, with the right to sublicense, to PATENTS and know-how controlled by VAXIN and claiming (for PATENTS) or related to (for know-how) inventions made or conceived during the course of, or resulting from, activities performed under the license in Section 2.1, which inventions relate to and cover the production of VIRAL PARTICLES using PER.C6® CELLS and/or the use, and/or optimization of operating parameters relating to PER.C6® CELLS. To the extent that such PATENTS extend to cells other than PER.C6® CELLS, CRUCELL's license under this clause shall be limited to PER.C6® CELLS and the use of, handling of or manufacture thereof, and CRUCELL's rights shall not extend to the use or sale of the particular VIRAL PARTICLES that are developed by VAXIN and/or that are subject to the licenses under Section 2.1. CRUCELL shall only sublicense its rights under this clause to licensees of PER.C6® PATENTS or PER.C6® KNOW HOW, which licensees grant to CRUCELL a grant-back license to improvements on substantially the same terms as granted herein, which terms provide for the sublicensing of such improvements to other PER.C6® licensees.

2.3 Restrictions. VAXIN shall not, and shall procure that its SUBLICENSEES and STRATEGIC PARTNERS do not:

(a) use PER.C6® CELLS in or for FUNCTIONAL GENOMICS studies;

(b) use PER.C6® CELLS for the development of products to prevent or treat diseases caused by chicken anemia virus, or to produce vectors, or expression products thereof, containing all or a part of a chicken anemia virus gene;

(c) use PER.C6® CELLS for the development of therapeutics in the GENE THERAPY FIELD;

(d) except as explicitly permitted by this Agreement, offer, provide, give access to or otherwise make available PER.C6® CELLS to any third party;

(e) except for the sole purpose of the acts licensed by this Agreement, offer or provide services to third parties, relating to or using PER.C6® CELLS or PER.C6® KNOW HOW; and

(f) administer the PER.C6® CELLS to humans."

4. Article 6. Article 6 is deleted and replaced entirely with the following:

"6 TECHNICAL AND MATERIAL TRANSFER

6.1 Know how transfer to VAXIN. As soon as practicable, but no longer than within thirty (30) days of the receipt of the license fee pursuant to Section 3.1.1, CRUCELL shall provide VAXIN with that of the PER.C6® KNOW HOW that is in possession of CRUCELL at the time of transfer and that is necessary for the research use of PER.C6® CELLS.

6.2 Technical assistance. During the TERM, CRUCELL shall, upon request of VAXIN, provide technical assistance (including guidance on know how related to the work with PER.C6®) to VAXIN, as may be necessary to use the PER.C6® CELLS and PER.C6® KNOW HOW for the VACCINE PROGRAM and for the manufacture and making of the VACCINE upon reasonable request up to five (5) man-hours per year based. Any additional technical assistance will only be provided at CRUCELL's option and VAXIN shall compensate CRUCELL for technical assistance in excess of the abovementioned five (5) man-hours timeframe. For any such additional technical assistance VAXIN will pay the then standard FTE rates per hour per person. Crucell will send an invoice to VAXIN after providing the additional technical assistance and VAXIN pay the invoiced amount within 45 (forty five) days after receipt of such invoice.

6.3 Know how transfer to CRUCELL. At CRUCELL's request, VAXIN shall transfer to CRUCELL PER.C6® KNOW-HOW controlled by VAXIN.

6.4 PER.C6® CELL transfer. At VAXIN's request, CRUCELL shall provide to either VAXIN, its REGISTERED AFFILIATE, or STRATEGIC PARTNER a total of one (1) vial of suspension GMP-grade PER.C6® cells and one (1) vial of adherent GMP-grade PER.C6® CELLS. VAXIN shall reimburse CRUCELL for any transportation or transfer costs associated with the transfer of such PER.C6® CELLS. At VAXIN's request, CRUCELL shall provide up to a total of two (2) additional vials each of non-GMP PER.C6® CELLS and/or GMP PER.6® CELLS. VAXIN shall reimburse CRUCELL [***] for each vial of non-GMP PER.C6® CELLS and [***] for GMP PER.C6® CELLS. Any additional vials shall be provided at CRUCELL's option and at a cost agreed to by the Parties." In the unanticipated event that a vial of cells provided under any of the above conditions fails to recover from freezing due to no negligence or willful misconduct of VAXIN, a replacement vial will be provided without cost providing VAXIN reimburses CRUCELL for any transportation or transfer costs associated with the transfer of such PER.C6® CELLS.

6.5 PERC.6 Medium. CRUCELL will approve the use of custom made PERC.6® CELL growth medium by VAXIN, its REGISTERED AFFILIATE, or STRATEGIC PARTNER for adenovirus production under the terms of this amendment.

5. Section 7.5. Insert Section 7.5 immediately after Section 7.4.3.

"7.5. Efforts. VAXIN shall use commercially reasonable efforts to develop and commercialize at least one VACCINE for the prevention and/or treatment of human infectious diseases caused by infectious agents belonging to the family of influenza virus. VAXIN shall use

commercially reasonable efforts to develop and commercialize at least one VACCINE for the prevention and/or treatment of human infections caused by *Bacillus anthracis.* Failure to exercise commercially reasonable efforts shall be considered a material breach of this Agreement, and Crucell may terminate this agreement in whole or in part in accordance with Section 9.2."

6. Counterparts. This Amendment No. 1 may be executed is one or more counterparts or facsimiles thereof, each of which together shall constitute a single instrument.

(signature page follows)

IN WITNESS WHEREOF, CRUCELL and VAXIN have caused this Amendment No. 1 to be duly executed by their authorized representatives under seal, in duplicate on the dates written herein below.

For Crucell Holland B.V.	For Altimmune Inc.
/s/ Maarten Santman	/s/ William Enright
Signature	Signature
Maarten Santman	
Senior Legal Counsel & Corporate Secretary	William Enright
Printed Name	Printed Name
1 October 2015	25 September 2015
Date	Date

Exhibit 1.1

Approved REGISTERED AFFILIATES: [***]

Approved STRATEGIC PARTNERS:

- [***]

Exhibit 10.12

FORM OF INDEMNIFICATION AGREEMENT

THIS INDEMNIFICATION AGREEMENT (the "**Agreement**") is made and entered into as of , 20 between Altimmune Inc. a Delaware corporation (the "**Company**"), and [ ] ("**Indemnitee**").

WITNESSETH THAT:

WHEREAS, highly competent persons have become more reluctant to serve corporations as directors or in other capacities unless they are provided with adequate protection through insurance or adequate indemnification against inordinate risks of claims and actions against them arising out of their service to and activities on behalf of the corporation;

WHEREAS, the Board of Directors of the Company (the "**Board**") has determined that, in order to attract and retain qualified individuals, the Company will attempt to maintain on an ongoing basis, at its sole expense, liability insurance to protect persons serving the Company and its subsidiaries from certain liabilities. Although the furnishing of such insurance has been a customary and widespread practice among United States-based corporations and other business enterprises, the Company believes that, given current market conditions and trends, such insurance may be available to it in the future only at higher premiums and with more exclusions. At the same time, directors, officers, and other persons in service to corporations or business enterprises are being increasingly subjected to expensive and time-consuming litigation relating to, among other things, matters that traditionally would have been brought only against the Company or business enterprise itself. In addition, the Certificate of Incorporation of the Company requires indemnification of the directors of the Company. Indemnitee may also be entitled to indemnification pursuant to the General Corporation Law of the State of Delaware ("**DGCL**"). The Certificate of Incorporation and the DGCL expressly provide that the indemnification provisions set forth therein are not exclusive, and thereby contemplate that contracts may be entered into between the Company and members of the Board, officers and other persons with respect to indemnification;

WHEREAS, the uncertainties relating to such insurance and to indemnification have increased the difficulty of attracting and retaining such persons;

WHEREAS, the Board has determined that the increased difficulty in attracting and retaining such persons is detrimental to the best interests of the Company's stockholders and that the Company should act to assure such persons that there will be increased certainty of such protection in the future;

WHEREAS, it is reasonable, prudent and necessary for the Company contractually to obligate itself to indemnify, and to advance expenses on behalf of, such persons to the fullest extent permitted by applicable law so that they will serve or continue to serve the Company free from undue concern that they will not be so indemnified;

WHEREAS, this Agreement is a supplement to and in furtherance of the Certificate of Incorporation of the Company and any resolutions adopted pursuant thereto, and shall not be deemed a substitute therefor, nor to diminish or abrogate any rights of Indemnitee thereunder; and

WHEREAS, Indemnitee does not regard the protection available under the Company's Certificate of Incorporation and insurance as adequate in the present circumstances, and may not be willing to serve as an officer or director without adequate protection, and the Company desires Indemnitee to serve in such capacity. Indemnitee is willing to serve, continue to serve and to take on additional service for or on behalf of the Company on the condition that he be so indemnified; and

[**WHEREAS**, Indemnitee has certain rights to indemnification and/or insurance provided by [*name of fund/sponsor*] which Indemnitee and [*name of fund/sponsor*] intend to be secondary to the primary obligation of the Company to indemnify Indemnitee as provided herein, with the Company's acknowledgement and agreement to the foregoing being a material condition to Indemnitee's willingness to serve on the Board.]

NOW, THEREFORE, in consideration of Indemnitee's agreement to serve as a director from and after the date hereof, the parties hereto agree as follows:

1. Indemnity of Indemnitee. The Company hereby agrees to hold harmless and indemnify Indemnitee to the fullest extent permitted by law, as such may be amended from time to time. In furtherance of the foregoing indemnification, and without limiting the generality thereof.

(a) Proceedings Other Than Proceedings by or in the Right of the Company. Indemnitee shall be entitled to the rights of indemnification provided in this Section l(a) if, by reason of his Corporate Status (as hereinafter defined), the Indemnitee is, or is threatened to be made, a party to or participant in any Proceeding (as hereinafter defined) other than a Proceeding by or in the right of the Company. Pursuant to this Section 1(a), Indemnitee shall be indemnified against all Expenses (as hereinafter defined), judgments, penalties, fines and amounts paid in settlement actually and reasonably incurred by him, or on his behalf, in connection with such Proceeding or any claim, issue or matter therein, if the Indemnitee acted in good faith and in a manner the Indemnitee reasonably believed to be in or not opposed to the best interests of the Company, and with respect to any criminal Proceeding, had no reasonable cause to believe the Indemnitee's conduct was unlawful.

(b) Proceedings by or in the Right of the Company. Indemnitee shall be entitled to the rights of indemnification provided in this Section 1(b) if, by reason of his Corporate Status, the Indemnitee is, or is threatened to be made, a party to or participant in any Proceeding brought by or in the right of the Company. Pursuant to this Section 1(b), Indemnitee shall be indemnified against all Expenses actually and reasonably incurred by the Indemnitee, or on the Indemnitee's behalf, in connection with such Proceeding if the Indemnitee acted in good faith and in a manner the Indemnitee reasonably believed to be in or not opposed to the best interests of the Company; provided, however, if applicable law so provides, no indemnification against such Expenses shall be made in respect of any claim, issue or matter in such Proceeding as to which Indemnitee shall have been adjudged to be liable to the Company unless and to the extent that the Court of Chancery of the State of Delaware shall determine that such indemnification may be made.

(c) Indemnification for Expenses of a Party Who is Wholly or Partly Successful. Notwithstanding any other provision of this Agreement, to the extent that Indemnitee is, by reason of his Corporate Status, a party to and is successful, on the merits or

otherwise, in any Proceeding, he shall be indemnified to the maximum extent permitted by law, as such may be amended from time to time, against all Expenses actually and reasonably incurred by him or on his behalf in connection therewith. If Indemnitee is not wholly successful in such Proceeding but is successful, on the merits or otherwise, as to one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by him or on his behalf in connection with each successfully resolved claim, issue or matter. For purposes of this Section and without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

2. Additional Indemnity. In addition to, and without regard to any limitations on, the indemnification provided for in Section 1 of this Agreement, the Company shall and hereby does indemnify and hold harmless Indemnitee against all Expenses, judgments, penalties, fines and amounts paid in settlement actually and reasonably incurred by him or on his behalf if, by reason of his Corporate Status, he is, or is threatened to be made, a party to or participant in any Proceeding (including a Proceeding by or in the right of the Company), including, without limitation, all liability arising out of the negligence or active or passive wrongdoing of Indemnitee. The only limitation that shall exist upon the Company's obligations pursuant to this Agreement shall be that the Company shall not be obligated to make any payment to Indemnitee that is finally determined (under the procedures, and subject to the presumptions, set forth in Sections 6 and 7 hereof) to be unlawful.

3. Contribution.

(a) Whether or not the indemnification provided in Sections 1 and 2 hereof is available, in respect of any threatened, pending or completed action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), the Company shall pay, in the first instance, the entire amount of any judgment or settlement of such action, suit or proceeding without requiring Indemnitee to contribute to such payment and the Company hereby waives and relinquishes any right of contribution it may have against Indemnitee. The Company shall not enter into any settlement of any action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding) unless such settlement provides for a full and final release of all claims asserted against Indemnitee.

(b) Without diminishing or impairing the obligations of the Company set forth in the preceding subparagraph, if, for any reason, Indemnitee shall elect or be required to pay all or any portion of any judgment or settlement in any threatened, pending or completed action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), the Company shall contribute to the amount of Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred and paid or payable by Indemnitee in proportion to the relative benefits received by the Company and all officers, directors or employees of the Company, other than Indemnitee, who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, from the transaction or events from which such action, suit or proceeding arose; provided, however, that the proportion determined on the basis of relative benefit may, to the extent necessary to conform to law, be further adjusted by reference to the relative fault of the Company and all officers, directors or employees of the Company other than Indemnitee who are jointly liable with Indemnitee (or would be if joined in such action, suit or

proceeding), on the one hand, and Indemnitee, on the other hand, in connection with the transaction or events that resulted in such expenses, judgments, fines or settlement amounts, as well as any other equitable considerations which applicable law may require to be considered. The relative fault of the Company and all officers, directors or employees of the Company, other than Indemnitee, who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, shall be determined by reference to, among other things, the degree to which their actions were motivated by intent to gain personal profit or advantage, the degree to which their liability is primary or secondary and the degree to which their conduct is active or passive.

(c) The Company hereby agrees to fully indemnify and hold Indemnitee harmless from any claims of contribution which may be brought by officers, directors, or employees of the Company, other than Indemnitee, who may be jointly liable with Indemnitee.

(d) To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnitee for any reason whatsoever, the Company, in lieu of indemnifying Indemnitee, shall contribute to the amount incurred by Indemnitee, whether for judgments, fines, penalties, excise taxes, amounts paid or to be paid in settlement and/or for Expenses, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such Proceeding in order to reflect (i) the relative benefits received by the Company and Indemnitee as a result of the event(s) and/or transaction(s) giving cause to such Proceeding and/or (ii) the relative fault of the Company (and its directors, officers, employees and agents) and Indemnitee in connection with such event(s) and/or transaction(s).

4. Indemnification for Expenses of a Witness. Notwithstanding any other provision of this Agreement, to the extent that Indemnitee is, by reason of his Corporate Status, a witness, or is made (or asked) to respond to discovery requests, in any Proceeding to which Indemnitee is not a party, he shall be indemnified against all Expenses actually and reasonably incurred by him or on his behalf in connection therewith.

5. Advancement of Expenses. Notwithstanding any other provision of this Agreement, the Company shall advance all Expenses incurred by or on behalf of Indemnitee in connection with any Proceeding by reason of Indemnitee's Corporate Status within thirty (30) days after the receipt by the Company of a statement or statements from Indemnitee requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by Indemnitee and shall include or be preceded or accompanied by a written undertaking by or on behalf of Indemnitee to repay any Expenses advanced if it shall ultimately be determined that Indemnitee is not entitled to be indemnified against such Expenses. Any advances and undertakings to repay pursuant to this Section 5 shall be unsecured and interest free.

6. Procedures and Presumptions for Determination of Entitlement to Indemnification. It is the intent of this Agreement to secure for Indemnitee rights of indemnity that are as favorable as may be permitted under the DGCL and public policy of the State of Delaware. Accordingly, the parties agree that the following procedures and presumptions shall apply in the event of any question as to whether Indemnitee is entitled to indemnification under this Agreement:

(a) To obtain indemnification under this Agreement, Indemnitee shall submit to the Company a written request, including therein or therewith such documentation and information as is reasonably available to Indemnitee and is reasonably necessary to determine whether and to what extent Indemnitee is entitled to indemnification. The Secretary of the Company shall, promptly upon receipt of such a request for indemnification, advise the Board in writing that Indemnitee has requested indemnification. Notwithstanding the foregoing, any failure of Indemnitee to provide such a request to the Company, or to provide such a request in a timely fashion, shall not relieve the Company of any liability that it may have to Indemnitee unless, and to the extent that, such failure actually and materially prejudices the interests of the Company.

(b) Upon written request by Indemnitee for indemnification pursuant to the first sentence of Section 6(a) hereof, a determination with respect to Indemnitee's entitlement thereto shall be made in the specific case by one of the following four methods, which shall be at the election of the Board (1) by a majority vote of the disinterested directors, even though less than a quorum, (2) by a committee of disinterested directors designated by a majority vote of the disinterested directors, even though less than a quorum, (3) if there are no disinterested directors or if the disinterested directors so direct, by independent legal counsel in a written opinion to the Board, a copy of which shall be delivered to the Indemnitee, or (4) if so directed by the Board, by the stockholders of the Company. For purposes hereof, disinterested directors are those members of the Board who are not parties to the action, suit or proceeding in respect of which indemnification is sought by Indemnitee.

(c) If the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 6(b) hereof, the Independent Counsel shall be selected as provided in this Section 6(c). The Independent Counsel shall be selected by the Board. Indemnitee may, within ten (10) days after such written notice of selection shall have been given, deliver to the Company a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "**Independent Counsel**" as defined in Section 13 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If a written objection is made and substantiated, the Independent Counsel selected may not serve as Independent Counsel unless and until such objection is withdrawn or a court has determined that such objection is without merit. If, within twenty (20) days after submission by Indemnitee of a written request for indemnification pursuant to Section 6(a) hereof, no Independent Counsel shall have been selected and not objected to, either the Company or Indemnitee may petition the Court of Chancery of the State of Delaware or other court of competent jurisdiction for resolution of any objection which shall have been made by the Indemnitee to the Company's selection of Independent Counsel and/or for the appointment as Independent Counsel of a person selected by the court or by such other person as the court shall designate, and the person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel under Section 6(b) hereof. The Company shall pay any and all reasonable fees and expenses of Independent Counsel incurred by such Independent Counsel in connection with acting pursuant to Section 6(b) hereof, and the Company shall pay all reasonable fees and expenses incident to the procedures of this Section 6(c), regardless of the manner in which such Independent Counsel was selected or appointed.

(d) In making a determination with respect to entitlement to indemnification hereunder, the person or persons or entity making such determination shall presume that Indemnitee is entitled to indemnification under this Agreement. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence. Neither the failure of the Company (including by its directors or independent legal counsel) to have made a determination prior to the commencement of any action pursuant to this Agreement that indemnification is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor an actual determination by the Company (including by its directors or independent legal counsel) that Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that Indemnitee has not met the applicable standard of conduct.

(e) Indemnitee shall be deemed to have acted in good faith if Indemnitee's action is based on the records or books of account of the Enterprise (as hereinafter defined), including financial statements, or on information supplied to Indemnitee by the officers of the Enterprise in the course of their duties, or on the advice of legal counsel for the Enterprise or on information or records given or reports made to the Enterprise by an independent certified public accountant or by an appraiser or other expert selected with reasonable care by the Enterprise. In addition, the knowledge and/or actions, or failure to act, of any director, officer, agent or employee of the Enterprise shall not be imputed to Indemnitee for purposes of determining the right to indemnification under this Agreement. Whether or not the foregoing provisions of this Section 6(e) are satisfied, it shall in any event be presumed that Indemnitee has at all times acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence.

(f) If the person, persons or entity empowered or selected under Section 6 to determine whether Indemnitee is entitled to indemnification shall not have made a determination within sixty (60) days after receipt by the Company of the request therefor, the requisite determination of entitlement to indemnification shall be deemed to have been made and Indemnitee shall be entitled to such indemnification absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law; provided, however, that such sixty (60) day period may be extended for a reasonable time, not to exceed an additional thirty (30) days, if the person, persons or entity making such determination with respect to entitlement to indemnification in good faith requires such additional time to obtain or evaluate documentation and/or information relating thereto; and provided further, that the foregoing provisions of this Section 6(f) shall not apply if the determination of entitlement to indemnification is to be made by the stockholders pursuant to Section 6(b) of this Agreement and if (A) within fifteen (15) days after receipt by the Company of the request for such determination, the Board or the Disinterested Directors, if appropriate, resolve to submit such determination to the stockholders for their consideration at an annual meeting thereof to be held within seventy five (75) days after such receipt and such determination is made thereat, or (B) a special meeting of stockholders is called within fifteen (15) days after such receipt for the purpose of making such determination, such meeting is held for such purpose within sixty (60) days after having been so called and such determination is made thereat.

(g) Indemnitee shall cooperate with the person, persons or entity making such determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information which is not privileged or otherwise protected from disclosure and which is reasonably available to Indemnitee and reasonably necessary to such determination. Any Independent Counsel, member of the Board or stockholder of the Company shall act reasonably and in good faith in making a determination regarding the Indemnitee's entitlement to indemnification under this Agreement. Any costs or expenses (including attorneys' fees and disbursements) incurred by Indemnitee in so cooperating with the person, persons or entity making such determination shall be borne by the Company (irrespective of the determination as to Indemnitee's entitlement to indemnification) and the Company hereby indemnifies and agrees to hold Indemnitee harmless therefrom.

(h) The Company acknowledges that a settlement or other disposition short of final judgment may be successful if it permits a party to avoid expense, delay, distraction, disruption and uncertainty. In the event that any action, claim or proceeding to which Indemnitee is a party is resolved in any manner other than by adverse judgment against Indemnitee (including, without limitation, settlement of such action, claim or proceeding with or without payment of money or other consideration) it shall be presumed that Indemnitee has been successful on the merits or otherwise in such action, suit or proceeding. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence.

(i) The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of nolo contendere or its equivalent, shall not (except as otherwise expressly provided in this Agreement) of itself adversely affect the right of Indemnitee to indemnification or create a presumption that Indemnitee did not act in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe that his conduct was unlawful.

7. Remedies of Indemnitee.

(a) In the event that (i) a determination is made pursuant to Section 6 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 5 of this Agreement, (iii) no determination of entitlement to indemnification is made pursuant to Section 6(b) of this Agreement within ninety (90) days after receipt by the Company of the request for indemnification, (iv) payment of indemnification is not made pursuant to this Agreement within ten (10) days after receipt by the Company of a written request therefor, or (v) payment of indemnification is not made within ten (10) days after a determination has been made that Indemnitee is entitled to indemnification or such determination is deemed to have been made pursuant to Section 6 of this Agreement, Indemnitee shall be entitled to an adjudication in an appropriate court of the State of Delaware, or in any other court of competent jurisdiction, of Indemnitee's entitlement to such indemnification. Indemnitee shall commence such proceeding seeking an adjudication within one hundred eighty (180) days following the date on which Indemnitee first has the right to commence such proceeding pursuant to this Section 7(a). The Company shall not oppose Indemnitee's right to seek any such adjudication.

(b) In the event that a determination shall have been made pursuant to Section 6(b) of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding commenced pursuant to this Section 7 shall be conducted in all respects as a de novo trial on the merits, and Indemnitee shall not be prejudiced by reason of the adverse determination under Section 6(b).

(c) If a determination shall have been made pursuant to Section 6(b) of this Agreement that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding commenced pursuant to this Section 7, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's misstatement not materially misleading in connection with the application for indemnification, or (ii) a prohibition of such indemnification under applicable law.

(d) In the event that Indemnitee, pursuant to this Section 7, seeks a judicial adjudication of his rights under, or to recover damages for breach of, this Agreement, or to recover under any directors' and officers' liability insurance policies maintained by the Company, the Company shall pay on his behalf, in advance, any and all expenses (of the types described in the definition of Expenses in Section 13 of this Agreement) actually and reasonably incurred by him in such judicial adjudication, regardless of whether Indemnitee ultimately is determined to be entitled to such indemnification, advancement of expenses or insurance recovery.

(e) The Company shall be precluded from asserting in any judicial proceeding commenced pursuant to this Section 7 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court that the Company is bound by all the provisions of this Agreement. The Company shall indemnify Indemnitee against any and all Expenses and, if requested by Indemnitee, shall (within ten (10) days after receipt by the Company of a written request therefore) advance, to the extent not prohibited by law, such expenses to Indemnitee, which are incurred by Indemnitee in connection with any action brought by Indemnitee for indemnification or advance of Expenses from the Company under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company, regardless of whether Indemnitee ultimately is determined to be entitled to such indemnification, advancement of Expenses or insurance recovery, as the case may be.

(f) Notwithstanding anything in this Agreement to the contrary, no determination as to entitlement to indemnification under this Agreement shall be required to be made prior to the final disposition of the Proceeding.

8. Non-Exclusivity; Survival of Rights; Insurance; Primacy of Indemnification; Subrogation.

(a) The rights of indemnification as provided by this Agreement shall not be deemed exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the Certificate of Incorporation, the By-laws, any agreement, a vote of stockholders, a resolution of directors of the Company, or otherwise. No amendment, alteration or repeal of this Agreement or of any provision hereof shall limit or restrict any right of Indemnitee under this Agreement in respect of any action taken or omitted by such Indemnitee in his Corporate Status prior to such amendment, alteration or repeal. To the extent that a change in the DGCL, whether by statute or judicial decision, permits greater indemnification than would be

afforded currently under the Certificate of Incorporation, By-laws and this Agreement, it is the intent of the parties hereto that Indemnitee shall enjoy by this Agreement the greater benefits so afforded by such change. No right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

(b) To the extent that the Company maintains an insurance policy or policies providing liability insurance for directors, officers, employees, or agents or fiduciaries of the Company or of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise that such person serves at the request of the Company, Indemnitee shall be covered by such policy or policies in accordance with its or their terms to the maximum extent of the coverage available for any director, officer, employee, agent or fiduciary under such policy or policies. If, at the time of the receipt of a notice of a claim pursuant to the terms hereof, the Company has directors' and officers' liability insurance in effect, the Company shall give prompt notice of the commencement of such proceeding to the insurers in accordance with the procedures set forth in the respective policies. The Company shall thereafter take all necessary or desirable action to cause such insurers to pay, on behalf of the Indemnitee, all amounts payable as a result of such proceeding in accordance with the terms of such policies.

(c) [The Company hereby acknowledges that Indemnitee has certain rights to indemnification, advancement of expenses and/or insurance provided by [*name of fund/sponsor*] and certain of [its][their] affiliates (collectively, the "Fund Indemnitors"). The Company hereby agrees (i) that it is the indemnitor of first resort (*i.e.*, its obligations to Indemnitee are primary and any obligation of the Fund Indemnitors to advance expenses or to provide indemnification for the same expenses or liabilities incurred by Indemnitee are secondary), (ii) that it shall be required to advance the full amount of expenses incurred by Indemnitee and shall be liable for the full amount of all Expenses, judgments, penalties, fines and amounts paid in settlement to the extent legally permitted and as required by the terms of this Agreement and the Certificate of Incorporation or Bylaws of the Company (or any other agreement between the Company and Indemnitee), without regard to any rights Indemnitee may have against the Fund Indemnitors, and (iii) that it irrevocably waives, relinquishes and releases the Fund Indemnitors from any and all claims against the Fund Indemnitors for contribution, subrogation or any other recovery of any kind in respect thereof. The Company further agrees that no advancement or payment by the Fund Indemnitors on behalf of Indemnitee with respect to any claim for which Indemnitee has sought indemnification from the Company shall affect the foregoing and the Fund Indemnitors shall have a right of contribution and/or be subrogated to the extent of such advancement or payment to all of the rights of recovery of Indemnitee against the Company. The Company and Indemnitee agree that the Fund Indemnitors are express third party beneficiaries of the terms of this Section 8(c).]

(d) [Except as provided in paragraph (c) above,] in the event of any payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee (other than against the Fund Indemnitors), who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

(e) [Except as provided in paragraph (c) above,] the Company shall not be liable under this Agreement to make any payment of amounts otherwise indemnifiable hereunder if and to the extent that Indemnitee has otherwise actually received such payment under any insurance policy, contract, agreement or otherwise.

(f) [Except as provided in paragraph (c) above,] the Company's obligation to indemnify or advance Expenses hereunder to Indemnitee who is or was serving at the request of the Company as a director, officer, employee or agent of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise shall be reduced by any amount Indemnitee has actually received as indemnification or advancement of expenses from such other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise.

9. Exception to Right of Indemnification. Notwithstanding any provision in this Agreement, the Company shall not be obligated under this Agreement to make any indemnity in connection with any claim made against Indemnitee:

(a) for which payment has actually been made to or on behalf of Indemnitee under any insurance policy or other indemnity provision, except with respect to any excess beyond the amount paid under any insurance policy or other indemnity provision, [provided, that the foregoing shall not affect the rights of Indemnitee or the Fund Indemnitors set forth in Section 8(c) above]; or

(b) for an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Securities Exchange Act of 1934, as amended, or similar provisions of state statutory law or common law; or

(c) in connection with any Proceeding (or any part of any Proceeding) initiated by Indemnitee, including any Proceeding (or any part of any Proceeding) initiated by Indemnitee against the Company or its directors, officers, employees or other indemnitees, unless (i) the Board authorized the Proceeding (or any part of any Proceeding) prior to its initiation, or (ii) the Company provides the indemnification, in its sole discretion, pursuant to the powers vested in the Company under applicable law.

10. Duration of Agreement. All agreements and obligations of the Company contained herein shall continue during the period Indemnitee is an officer or director of the Company (or is or was serving at the request of the Company as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise) and shall continue thereafter so long as Indemnitee shall be subject to any Proceeding (or any proceeding commenced under Section 7 hereof) by reason of his Corporate Status, whether or not he is acting or serving in any such capacity at the time any liability or expense is incurred for which indemnification can be provided under this Agreement. This Agreement shall be binding upon and inure to the benefit of and be enforceable by the parties hereto and their respective successors (including any direct or indirect successor by purchase, merger, consolidation or otherwise to all or substantially all of the business or assets of the Company), assigns, spouses, heirs, executors and personal and legal representatives.

11. Security. To the extent requested by Indemnitee and approved by the Board, the Company may at any time and from time to time provide security to Indemnitee for the Company's obligations hereunder through an irrevocable bank line of credit, funded trust or other collateral. Any such security, once provided to Indemnitee, may not be revoked or released without the prior written consent of the Indemnitee.

12. Enforcement.

(a) The Company expressly confirms and agrees that it has entered into this Agreement and assumes the obligations imposed on it hereby in order to induce Indemnitee to serve as an officer or director of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving as an officer or director of the Company.

(b) This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral, written and implied, between the parties hereto with respect to the subject matter hereof.

(c) The Company shall not seek from a court, or agree to, a "bar order" which would have the effect of prohibiting or limiting the Indemnitee's rights to receive advancement of expenses under this Agreement.

13. Definitions. For purposes of this Agreement:

(a) "**Corporate Status**" describes the status of a person who is or was a director, officer, employee, agent or fiduciary of the Company or of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise that such person is or was serving at the express written request of the Company.

(b) "**Disinterested Director**" means a director of the Company who is not and was not a party to the Proceeding in respect of which indemnification is sought by Indemnitee.

(c) "**Enterprise**" shall mean the Company and any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise that Indemnitee is or was serving at the express written request of the Company as a director, officer, employee, agent or fiduciary.

(d) "**Expenses**" shall include all reasonable attorneys' fees, retainers, court costs, transcript costs, fees of experts, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees and all other disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, participating, or being or preparing to be a witness in a Proceeding, or responding to, or objecting to, a request to provide discovery in any Proceeding. Expenses also shall include Expenses incurred in connection with any appeal resulting from any Proceeding and any federal, state, local or foreign taxes imposed on the Indemnitee as a result of the actual or deemed receipt of any payments under this Agreement, including without limitation the premium, security for, and other costs relating to any cost bond, supersede as bond, or other appeal bond or its equivalent. Expenses, however, shall not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee.

(e) "**Independent Counsel**" means a law firm, or a member of a law firm, that is experienced in matters of corporation law and neither presently is, nor in the past five years has been, retained to represent (i) the Company or Indemnitee in any matter material to either such party (other than with respect to matters concerning Indemnitee under this Agreement, or of other indemnitees under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "Independent Counsel" shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee's rights under this Agreement. The Company agrees to pay the reasonable fees of the Independent Counsel referred to above and to fully indemnify such counsel against any and all Expenses, claims, liabilities and damages arising out of or relating to this Agreement or its engagement pursuant hereto.

(f) "**Proceeding**" includes any threatened, pending or completed action, suit, arbitration, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing or any other actual, threatened or completed proceeding, whether brought by or in the right of the Company or otherwise and whether civil, criminal, administrative or investigative, in which Indemnitee was, is or will be involved as a party or otherwise, by reason of his or her Corporate Status, by reason of any action taken by him or of any inaction on his part while acting in his or her Corporate Status; in each case whether or not he is acting or serving in any such capacity at the time any liability or expense is incurred for which indemnification can be provided under this Agreement; including one pending on or before the date of this Agreement, but excluding one initiated by an Indemnitee pursuant to Section 7 of this Agreement to enforce his rights under this Agreement.

14. Severability. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provision. Without limiting the generality of the foregoing, this Agreement is intended to confer upon Indemnitee indemnification rights to the fullest extent permitted by applicable laws. In the event any provision hereof conflicts with any applicable law, such provision shall be deemed modified, consistent with the aforementioned intent, to the extent necessary to resolve such conflict.

15. Modification and Waiver. No supplement, modification, termination or amendment of this Agreement shall be binding unless executed in writing by both of the parties hereto. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions hereof (whether or not similar) nor shall such waiver constitute a continuing waiver.

16. Notice By Indemnitee. Indemnitee agrees promptly to notify the Company in writing upon being served with or otherwise receiving any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter which may be subject to indemnification covered hereunder. The failure to so notify the Company shall not relieve the Company of any obligation which it may have to Indemnitee under this Agreement or otherwise unless and only to the extent that such failure or delay materially prejudices the Company.

17. Notices. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given (a) upon personal delivery to the party to be notified, (b) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient, and if not so confirmed, then on the next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent:

(a) To Indemnitee at the address set forth below Indemnitee signature hereto.

(b) To the Company at:

19 Firstfield Road
Gaithersburg, MD 20878
Attention: Chief Executive Officer

or to such other address as may have been furnished to Indemnitee by the Company or to the Company by Indemnitee, as the case may be.

18. Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

19. Headings. The headings of the paragraphs of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

20. Governing Law and Consent to Jurisdiction. This Agreement and the legal relations among the parties shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. The Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Chancery Court of the State of Delaware (the "**Delaware Court**"), and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action or proceeding arising out of or in connection with this Agreement, (iii) appoint, to the extent such party is not otherwise subject to service of process in the State of Delaware, irrevocably The Corporation Trust Company, located 12209 Orange Street, Wilmington, Delaware as its agent in the State of Delaware as such party's agent for acceptance of legal process in connection with any such action or proceeding against such party with the same legal force and validity as if served upon such party personally within the State of Delaware, (iv) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court, and (v) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court has been brought in an improper or inconvenient forum.

SIGNATURE PAGE TO FOLLOW

IN WITNESS WHEREOF, the parties hereto have executed this Indemnification Agreement on and as of the day and year first above written.

VAXIN INC.

By: _____
William Enright
Chief Executive Officer

INDEMNITEE

_____

Name: _____

Address: _____

_____

_____

_____

[Signature Page to Indemnification Agreement]

Exhibit 10.13

AMENDED AND RESTATED EMPLOYMENT AGREEMENT

This **AMENDED AND RESTATED EMPLOYMENT AGREEMENT** ("Agreement") is made and entered into as of December 7, 2015, by and between William J. Enright ("Enright") and Altimmune Inc. (f/k/a Vaxin, Inc.), a Delaware corporation ("Altimmune"). This Agreement will become effective upon the date of the underwriting agreement between Altimmune and the underwriter(s) managing the initial public offering of Altimmune's common stock (the "IPO"), pursuant to which such common stock is priced for the IPO (the "Effective Date"); provided that if (i) Altimmune does not complete an IPO on or prior to the one year anniversary of the date hereof or (b) Enright does not remain continuously employed by Altimmune from the date hereof through the Effective Date, this Agreement shall be void *ab initio* (*i.e*., it shall never take effect) and the Prior Employment Agreement (as defined below) shall remain in full force and effect.

WHEREAS, Enright currently serves as the President and Chief Executive Officer of Altimmune pursuant to that certain Employment Agreement, by and between Enright and Altimmune, effective as of June 27, 2008 (the "Prior Employment Agreement");

WHEREAS, the Board of Directors of Altimmune (the "Board") or an authorized committee thereof and Enright desire to terminate and supersede the Prior Employment Agreement as of the Effective Date pursuant to the terms hereof to assure Altimmune of Enright's continued employment in an executive capacity and to compensate him therefor;

WHEREAS, the Board considers the establishment and maintenance of a sound management to be essential to protecting and enhancing the best interests of Altimmune and its stockholders;

WHEREAS, the Board has determined that appropriate steps should be taken to retain Enright and to reinforce and encourage his continued attention and dedication to his assigned duties and Altimmune desires to retain the services of Enright, and Enright desires to be employed by Altimmune pursuant to the terms and conditions set forth in this Agreement;

WHEREAS, Altimmune and Enright both acknowledge that there is no assurance that Altimmune will complete an IPO on or prior to the first anniversary of the date hereof or at all at any time and that if it does not, the Effective Date will not occur and this Agreement will not take effect; and

WHEREAS, Enright acknowledges that, in executing this Agreement, he has had a reasonable opportunity to seek the advice of independent legal and tax counsel, and has read and understood all of the terms and provisions of this Agreement.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

1. Titles, Duties and Responsibilities.

(a) Title and Duties. During the Employment Period (as defined in Section 2 below), Enright shall serve as President and Chief Executive Officer of Altimmune and shall have such duties, responsibilities and authority commensurate with such position, and such additional duties and responsibilities commensurate with such position as shall be determined from time to time by the Board. During the Employment Period, subject to the requirements of any applicable law (including, without limitation, any rules or regulations of any exchange on which the common stock of Altimmune is then listed or traded), Altimmune agrees to use its best efforts to cause Enright to be nominated for election (or re-election) at each annual meeting at which the class of directors of which Enright is a part is subject to election (or re-election). If requested, Enright shall also serve without additional compensation in such other offices of Altimmune or its subsidiaries or affiliates to which he may be elected or appointed.

(b) Reporting Responsibilities. Enright shall report directly to the Board.

(c) Conflicts of Interest and Compliance with Laws. Except as specifically set forth in this Section 1(c), during the Employment Period, Enright shall devote his entire time, attention, energies and business efforts to the affairs of Altimmune. Except as set forth below, during the Employment Period, Enright shall not, without the prior written consent of the Board (x) engage, directly or indirectly, in any other business activity that materially interferes with his duties as set forth in this Agreement and/or that creates a conflict of interest, (y) act as a proprietor, partner, director, officer, executive, consultant, advisor, agent, representative or any other capacity of any entity other than Altimmune and its divisions, subsidiaries and other affiliated entities, regardless of whether such activity is for gain, profit or other pecuniary advantage, or (z) allow or cause Altimmune to participate in any transaction with Enright, any of his relatives (other than as employees of Altimmune), or any entity in which Enright or any of his relatives has an interest. Enright further agrees that he shall not knowingly take any action, or authorize the taking of any action, that contravenes any applicable federal, state, municipal or other political subdivision ordinance, statute or rule, regulation or order of any jurisdiction. Enright agrees to immediately disclose to the Board any relationship, action or activity that may potentially be subject to the provisions of this Section 1(c). Notwithstanding any restrictions contained in this Section 1(c), it is expressly understood and agreed that Enright serves and may continue to serve on the Johns Hopkins University Carey Business School Dean's Alumni Advisory Board and the Johns Hopkins University Alumni Council, in each case, for so long as such service does not materially interfere with the performance of his duties and responsibilities hereunder or does not give rise to a conflict of interest.

2. Employment Term. Unless sooner terminated as provided elsewhere in this Agreement, Enright's employment with Altimmune under this Agreement shall begin on the Effective Date and end at 11:59 p.m. Eastern Time on December 31, 2017 (the "Initial Employment Period"). Commencing on January 1, 2018 and each January 1 thereafter (the "Extension Date"), this Agreement shall automatically renew on the terms and conditions as then in effect for additional successive periods of one (1) year unless terminated by either party upon written notice to the other party not less than ninety (90) days prior to the Extension Date. The Initial Employment Period and any extension or renewal thereof shall be referred to herein together as the "Employment Period." Notwithstanding anything to the contrary contained herein, the Employment Period is subject to termination pursuant to Section 6 hereof.

3. Salary, Bonus and Other Compensation. During Enright's employment, Altimmune shall provide the following salary, bonus and other compensation to Enright:

(a) Base Compensation. Altimmune shall pay Enright an initial annual base salary of Three Hundred Seventy-Five Thousand Dollars ($375,000) per annum ("Base Salary"), payable in substantially equal installments in accordance with Altimmune's normal payroll practices. Enright's compensation shall be evaluated and adjusted by the Compensation Committee of the Board (the "Committee") on at least an annual basis, provided that in no event shall Enright's Base Salary be reduced while this Agreement is in effect.

(b) Annual Bonus. In addition to the Base Salary, during each year of the Employment Period, Enright will be eligible for an annual cash bonus ("Annual Bonus") with a target award equal to fifty percent (50%) of the Base Salary. The Annual Bonus will be subject to all of the terms and conditions of the applicable bonus plan. The actual Annual Bonus payouts will be based on achievement of the individual and/or company performance criteria established for the applicable fiscal year by the Committee in its sole and absolute discretion. Enright must be actively employed on December 31st of the applicable fiscal year to be eligible for an Annual Bonus payment. The Annual Bonus shall be paid no later than the March 15th of the fiscal year immediately following the fiscal year in which such Annual Bonus was earned.

(c) IPO Option Award. Subject to the approval of the Committee, Altimmune shall grant Enright an option to purchase 133,395 shares of Altimmune's common stock (the "IPO Option") under the Altimmune, Inc. 2016 Omnibus Incentive Plan (the "2016 Plan") on the Effective Date. The exercise price of the IPO Option shall be equal to the initial public offering price per share of Altimmune's common stock on the Effective Date. One hundred percent (100%) of the IPO Option shall be unvested and unexercisable as of the Effective Date. Commencing on the first anniversary of the Effective Date, twenty-five percent (25%) of the unvested portion of the IPO Option shall vest and become exercisable, and the aggregate remaining unvested portion of the IPO Option shall vest and become exercisable in equal monthly installments over the thirty-six (36) month period following such anniversary date. Notwithstanding the foregoing, if the Committee, in its sole discretion, determines that the IPO was successful, 50% of the unvested portion of the IPO Option shall immediately vest and become exercisable. For the avoidance of doubt, the Committee shall have the sole and absolute discretion to determine whether the IPO was successful for purposes of the immediately preceding sentence. Other than as set forth in this Section 3(c), the IPO Option will be governed by the terms and conditions of the 2016 Plan and the stock option agreement approved by the Committee to evidence the grant of the IPO Option.

(d) Additional Equity Awards. Enright will be entitled to participate in the 2016 Plan or such other equity based long-term incentive compensation plan, program or arrangement generally made available to senior executive officers of Altimmune from time to time, as determined by the Committee in its sole and absolute discretion.

4. Benefits. During the Employment Period, Enright shall be eligible for participation in and shall receive all benefits under welfare benefit, savings and retirement plans provided by Altimmune (including, but not limited to, life insurance, disability insurance, medical insurance, dental insurance) to the extent applicable generally to senior executives of Altimmune, and consistent with the following specific agreements:

(a) Vacation. Enright will be entitled to twenty (20) days of paid vacation and six (6) days of personal and sick leave each year during the Employment Period. Enright is permitted to carry over a maximum of twelve (12) days of personal and sick leave per year, subject to applicable law.

(b) Health, Life, Vision and Disability Insurance

(i) Enright will be entitled to participate in all health, vision and dental insurance programs provided by Altimmune to the extent applicable generally to senior executives of Altimmune. Altimmune will pay all premiums for Enright and his family during the term this Agreement is in effect.

(ii) During Enright's employment with Altimmune, Altimmune shall provide Enright with term life insurance with a death benefit equal to Enright's Base Salary (subject to insurability).

(iii) Subject to Enright's insurability, during Enright's employment with Altimmune, Altimmune shall maintain, at its cost, renewable short-term and long-term disability plans that provide for the annual payment of not less than 60% of Enright's Base Salary for so long as any short-term and/or long-term disability of Enright continues.

(c) During Enright's employment with Altimmune, Altimmune shall maintain D&O insurance at Altimmune's expense and shall name Enright as an additional insured.

5. Reimbursement of Business Expenses. Altimmune shall reimburse Enright for all reasonable and customary out-of-pocket business expenses incurred by Enright in the course of his duties (to include monthly expenses to maintain cellular telephone service), in accordance with Altimmune's policies as in effect from time to time. Enright shall be required to submit to Altimmune appropriate documentation supporting such out-of-pocket business expenses as a prerequisite to reimbursement in accordance with such policies. Notwithstanding anything herein to the contrary or otherwise, except to the extent any expense or reimbursement described in this Agreement does not constitute a "deferral of compensation" within the meaning of Section 409A of the Code and the Treasury regulations and other guidance issued thereunder, any expense or reimbursement described in this Agreement shall meet the following requirements: (i) the amount of expenses eligible for reimbursement provided to Enright during any calendar year will not affect the amount of expenses eligible for reimbursement to Enright in any other calendar year; (ii) the reimbursements for expenses for which Enright is entitled to be reimbursed shall be made on or before the last day of the calendar year following the calendar year in which the applicable expense is incurred; (iii) the right to payment or reimbursement or in-kind benefits hereunder may not be liquidated or exchanged for any other benefit; and (iv) the reimbursements shall be made pursuant to objectively determinable and nondiscretionary company policies and procedures regarding such reimbursement of expenses.

6. Termination Provisions.

(a) Termination by Altimmune for Cause or Termination by Enright without Good Reason. Altimmune may terminate Enright's employment immediately for Cause (as defined below) and Enright may terminate his employment at any time without Good Reason upon providing Altimmune at least thirty (30) days advance written notice. Upon such termination, Altimmune shall provide Enright with the following: (i) payment of any accrued Base Salary through and including the date of Enright's termination to the extent not theretofore paid; (ii) any accrued and unused vacation pay through and including the date of Enright's termination; (iii) any unreimbursed business expenses in accordance with Section 5 hereof, and (iv) such accrued and vested rights or benefits as may be due to Enright under any Altimmune sponsored employee benefits plans payable in accordance with the terms and conditions of such plans (the payments and benefits referred to in subclauses (i) through (iv) above shall be collectively referred to as the "Accrued Obligations"). Except as provided in this Section 6(a), termination pursuant to this Section 6(a) shall terminate any other rights Enright may have under this Agreement and shall relieve Altimmune of any other obligations it may have under this Agreement.

For purposes of this Agreement, termination for Cause shall mean the termination of Enright's employment by Altimmune due to: (i) a material breach by Enright of his fiduciary duties to Altimmune; (ii) a material breach by Enright of this Agreement after being given written notice of such breach and a failure to cure within thirty (30) days of such notice; (iii) Enright's willful failure or refusal to follow Altimmune's written policies after being given written notice of said failure or refusal and a failure to cure within thirty (30) days of such notice; (iv) Enright's conviction of, or plea of guilty or *nolo contendere,* to a felony; and/or (v) Enright's continuing and willful refusal to act as directed by the Board (other than refusal resulting from incapacity due to physical or mental illness), after written notice is delivered to Enright within sixty (60) days of such refusal which identifies said refusal and sets forth a plan of corrective action and a failure to cure within thirty (30) days of such notice.

(b) Termination by Altimmune without Cause or Resignation by Enright for Good Reason. Altimmune may terminate Enright's employment without Cause at any time upon prior written notice to Enright and Enright may terminate his employment for Good Reason (as defined below). Upon such termination, subject to Enright's continued compliance with the restrictive covenants set forth in Section 7, Altimmune shall provide Enright with the following:

(i) continued payment of the Cash Severance Amount (as defined below) in twelve (12) equal monthly installments following the effective date of such termination and otherwise payable in accordance with Altimmune's normal payroll practices. As used herein, the "Cash Severance Amount" shall be equal to 12 months of Enright's Base Salary existing at the time of such termination, except that if such termination occurs within the one (1) year period commencing on the occurrence of a Change in Control (as defined below), the Cash Severance Amount shall instead be equal to the sum of 18 months of Enright's Base Salary (existing at the time of such termination) plus Enright's target Annual Bonus for the year of termination;

(ii) subject to Enright's timely election, and the availability, of continuation coverage under Part 6 of Title I of the Employment Retirement Income Security Act of 1974 (as amended) and Section 4980B of the Code ("COBRA"), Altimmune will pay monthly, on Enright's behalf, a portion of the cost of such coverage for the twelve (12) months after the date of such termination, which payments will be equal to the amount of the monthly premium for such coverage, less the amount that Enright would have been required to pay if Enright had remained an active employee of Altimmune (the "COBRA Assistance"); provided, however, if at any time Altimmune determines that the COBRA Assistance would result in a violation of the non-discrimination rules under Section 105(h)(2) of the Internal Revenue Code of 1986, as amended (the "Code") or any other applicable laws, statute or regulation of similar effect (including, but not limited to, the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of providing the COBRA Assistance, Altimmune will instead pay Enright fully taxable cash payments equal to, and paid at the same time as, the COBRA Assistance would have otherwise been paid, subject to applicable tax withholdings;

(iii) any unpaid prior year's Annual Bonus, payable by Altimmune to Enright at the same time annual bonuses in respect of the prior year are generally paid to senior executives of Altimmune;

(iv) the Accrued Obligations; and

(v) if such termination occurs within the one (1) year period commencing on the occurrence of a Change in Control, accelerated vesting of all unvested equity awards then outstanding and held by Enright (for the avoidance of doubt, if such termination does not occur during such one (1) year period, then any accelerated vesting of unvested equity awards shall be at the discretion of the Committee).

For purposes of this Agreement, resignation for Good Reason shall mean the resignation by Enright of his employment due to: (a) a reduction in Enright's Base Salary or target Annual Bonus opportunity; (b) a material diminution in Enright's authority, duties or responsibilities; or (c) a relocation by Altimmune of Enright's principal place of business for the performance of his duties under this Agreement to a location that is anywhere outside of a 50-mile radius of Gaithersburg, Maryland; provided, however, that Enright must notify Altimmune within ninety (90) days of the occurrence of any of the foregoing conditions that he considers to be a "Good Reason" condition and provide Altimmune with thirty (30) days in which to cure the condition. If Enright fails to provide this notice and cure period prior to his resignation, or resigns more than six (6) months after the initial existence of the condition, his resignation will not be deemed to be for "Good Reason."

For purposes of this Agreement, "Change in Control" means the occurrence of either (i) an acquisition from stockholders of Altimmune (including through purchase, reorganization, merger, consolidation or similar transaction), directly or indirectly, in one or more transactions by a Person (other than any Person or group of Persons consisting solely of shareholders of Altimmune as of the date immediately prior to the consummation of the transaction) of beneficial ownership (within the meaning of Rule 13d-3 under the Exchange Act) of securities representing 50% or more of the combined voting power of the securities of Altimmune entitled to vote generally in the election of directors of the Board, calculated on a fully diluted basis

after giving effect to such acquisition, or (ii) the sale or other disposition, directly or indirectly, of all or substantially all of the assets of Altimmune and its subsidiaries, taken as a whole, to any Person (other than any Person or group of Persons consisting solely of shareholders of Altimmune as of the date immediately prior to the consummation of the transaction). For the avoidance of doubt, a transaction effected primarily for the purpose of (x) an equity financing of Altimmune, (y) the reincorporation of Altimmune in a different state, or (z) the formation of a holding company that will be owned exclusively by Altimmune's stockholders, shall not be a Change in Control for purposes of this Agreement. A "Person" means any individual, entity or group within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder, other than employee benefit plans sponsored or maintained by Altimmune and by entities controlled by Altimmune or an underwriter of the capital stock of Altimmune in a registered public offering.

(c) Death or Disability. Enright's employment shall terminate automatically upon Enright's death. Subject to applicable law, Altimmune may terminate Enright's employment due to Enright's Disability (as defined below). Upon any such termination, Altimmune shall provide Enright (or his estate as the case may be) with the Accrued Obligations through the date of termination. The term "Disability" shall mean Enright becoming physically or mentally disabled such that he is unable to perform his duties to Altimmune for a period of 90 consecutive days.

(d) Expiration of Employment Term. In the event notice of termination is provided by Enright in accordance with Section 2, Enright's employment shall terminate upon the expiration of the Employment Period. Upon such termination, Altimmune shall provide Enright with the Accrued Obligations through the date of termination and his Annual Bonus.

(e) Limits. Notwithstanding anything herein to the contrary, Altimmune's obligation to make any payments or benefits to Enright upon termination of his employment under the circumstances described in Section 6(b) (other than the Accrued Obligations) and 6(d) (other than the Accrued Obligations) is conditioned upon Enright's execution, delivery and non-revocation of a valid and enforceable release of claims arising in connection with Enright's employment and termination or resignation of employment with Altimmune and its affiliates (the "Release") that becomes effective not later than sixty (60) days after the date of such termination or resignation of employment. Altimmune shall provide the form of the Release to Enright within seven (7) days following the date of Enright's termination or resignation of employment. Subject to the foregoing and Section 21 hereof, the Cash Severance Amount will commence to be paid to Enright on the sixtieth (60th) day following Enright's termination or resignation of employment, and such first payment shall include payment of any amounts that would otherwise be due prior thereto. On any termination entitling Enright to the payments and benefits under Section 6(b) or 6(d), Altimmune and its affiliates shall have no further obligation to make payments under this Agreement other than as specifically provided for in such section.

(f) Resignation from All Positions. Unless the parties otherwise agree in writing, upon the termination or resignation of Enright's employment with Altimmune for any reason, Enright shall be deemed to have resigned, as of the date of such termination or resignation, from and with respect to all positions Enright then holds as an officer, director or employee with Altimmune and any of its affiliates.

7. Secrecy, Non-Solicitation and Non-Competition.

(a) Secrecy. During the Employment Period and thereafter, Enright covenants and agrees that he will not, except in performance of Enright's obligations to Altimmune, or with the prior written consent of Altimmune pursuant to the authority granted by a resolution of the Board, directly or indirectly, disclose any secret or confidential information that he may learn or has learned by reason of his association with Altimmune or use any such information. The term "secret or confidential information" includes, without limitation, information not previously disclosed to the public or to the trade by Altimmune's management with respect to Altimmune's products, facilities and methods, trade secrets and other intellectual property, systems, procedures, manuals, confidential reports, product price lists, customer lists, member lists, financial information (including the revenues, costs or profits associated with any Altimmune's products), business plans, prospects, employee or employees, compensation, or opportunities but shall exclude any information already in the public domain which has been disclosed to the public during the normal course of Altimmune's business. Notwithstanding anything herein to the contrary, nothing in this Agreement shall be construed to prohibit Enright from reporting possible violations of federal or state law or regulations to any governmental agency or entity, including but not limited to the Department of Justice, the Securities and Exchange Commission, the Congress, and any agency Inspector General, or making other disclosures that are protected under the whistleblower provisions of federal or state law or regulation. Enright does not need the prior authorization of Altimmune to make any such reports or disclosures and Enright is not required to notify Altimmune that he made such reports or disclosures.

(b) Non-solicitation of Clients and Customers. Enright covenants and agrees that during the Employment Period and for a period of one (1) year thereafter, he will not solicit, either directly or indirectly, any customer or client of Altimmune on behalf of any direct competitor of Altimmune for the purpose of diverting business from Altimmune. This Agreement extends to prevent Enright from soliciting on behalf of Enright or any other individual or entity that seeks to compete with Altimmune.

(c) Non-solicitation of Employees. Enright covenants and agrees that during the Employment Period and for a period of one (1) year thereafter, he shall not directly or indirectly, on his behalf or on behalf of any person or other entity, solicit or induce, or attempt to solicit or induce, any person who is an employee of Altimmune, to terminate his or her employment with Altimmune.

(d) Noncompetition. Enright covenants and agrees that during the Employment Period and for a period of one (1) year thereafter, he will not directly or indirectly work for or engage in sales, marketing or related activities on behalf of himself or any other person or entity that is a direct competitor of Altimmune and that does any business in the same geographical area as Altimmune; provided that in the event of a termination of Enright's employment by Altimmune for Cause, the foregoing shall not apply after the end of the Employment Period.

(e) Equitable Relief. Enright acknowledges and agrees that the services performed by him are special, unique and extraordinary in that, by reason of Enright's employment, Enright may acquire confidential information and trade secrets concerning the operation of Altimmune, or that Enright may have contact with or obtain knowledge of Altimmune's members or prospects, the use or disclosure of which could cause Altimmune substantial loss and damages, which could not be readily calculated and for which no remedy at law would be adequate. Accordingly, Enright acknowledges and agrees that Altimmune shall be entitled to obtain a temporary restraining order and/or a preliminary or permanent injunction restraining Enright from engaging in activities prohibited by this Section 7 or such other relief as may be required to specifically enforce any of the covenants in this Section 7. Enright acknowledges and agrees that Altimmune shall be entitled to its attorneys' fees and court costs should Altimmune successfully pursue legal action to enforce its rights under this Section 7.

(f) Return of Property. Upon termination or resignation of Enright's employment with Altimmune, Enright shall promptly supply to Altimmune all property, keys, notes, memoranda, writings, lists, files, reports, customer lists, correspondence, tapes, disks, cards, surveys, maps, logs, machines, technical data and any other tangible product or document which has been produced by, received by or otherwise submitted to Enright during or prior to his employment with Altimmune, and any copies thereof in Enright's (or capable of being reduced to Enright's) possession.

(g) Survival. Any termination of Enright's employment, of the Employment Period or of this Agreement (or breach of this Agreement by Altimmune or Enright) shall have no effect on the continuing operation of this Section 7.

8. Governing Law. This Agreement is made and entered into in the State of Maryland, without regard to conflict of laws rules, and the laws of the State of Maryland shall govern its validity and interpretation in the performance by the parties of their respective duties and obligations.

9. Entire Agreement. This Agreement constitutes the entire agreement between the parties with respect to the matters described herein and supersedes all prior agreements and understandings both written and oral, among the parties with respect to the subject matter hereof (including, without limitation, the Prior Employment Agreement), and there are no representation, warranties or commitments, other than those in writing executed by the parties hereto.

10. Consent to Venue. Any dispute, controversy, or claim arising out of or relating to this Agreement or the breach thereof, arising out of or relating in any way to the employment of Enright or termination thereof, shall be brought in the Federal courts located in the State of Maryland; provided, however, that if any of the aforementioned courts is found to lack subject matter jurisdiction, then to the exclusive jurisdiction of the state courts in the State of Maryland. By executing and delivering this Agreement, each party, for itself or himself and in connection with its or his properties, irrevocably (a) accepts generally and unconditionally the exclusive jurisdiction and venue of such courts; (b) waives any defense of *forum non conveniens*; (c) agrees that service of all process in any such proceeding in any such court may be made by registered or certified mail, return receipt requested, to the applicable party at its address provided herein; and (d) agrees that service as provided in clause (c) above is sufficient to confer personal jurisdiction over the applicable party in any such proceeding in any such court, and otherwise constitutes effective and binding service in every respect.

11. WAIVER OF JURY TRIAL. EACH PARTY HERETO IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT TO TRIAL BY JURY IN ANY DISPUTE, CONTROVERSY OR CLAIM, WHETHER SOUNDING IN CONTRACT, TORT OR OTHERWISE, AMONG THE PARTIES HERETO ARISING OUT OF OR RELATING IN ANY WAY TO THE EMPLOYMENT OF ENRIGHT OR TERMINATION THEREOF OR FOR ANY COUNTERCLAIM THEREIN. THE PARTIES HERETO MAY FILE AN ORIGINAL COUNTERPART OR A COPY OF THIS AGREEMENT WITH ANY COURT OF COMPETENT JURISDICTION AS PROVIDED HEREIN AS WRITTEN EVIDENCE OF THE CONSENT OF THE PARTIES HERETO TO THE WAIVER OF THEIR RIGHT TO TRIAL BY JURY.

12. Assistance in Litigation. Enright shall make himself available, upon the request of Altimmune, to testify or otherwise assist in litigation, arbitration, or other disputes involving Altimmune, or any of the directors, officers, executives, subsidiaries, or parent corporations of Altimmune, at no additional cost during the Employment Period and at any time following the termination of Enright's employment for any reason; provided, however, in the event such request is made by Altimmune after the Employment Period, Enright shall be reimbursed for any reasonable out-of-pocket expenses incurred with respect thereto and shall also be paid a reasonable daily stipend based on his Base Salary at the time of termination.

13. Notices. Any notice or communication required or permitted to be given to the parties shall be delivered personally or sent by registered or certified mail, postage prepaid and return receipt requested, and addressed or delivered as follows, or to such other address as the party addressed may have substituted by notice pursuant to this Section.

(a) If to Altimmune, to:

Altimmune Inc.
19 Firstfield Road, Suite 200
Gaithersburg, Maryland 20878
ATTN: Board of Directors

(b) If to Enright, to:

The last address on file with Altimmune at the time of Notice.

14. Binding Agreement. This Agreement shall inure to the benefit of and be enforceable by Enright and his personal or legal representatives, executors, administrators, successors, heirs, distributees, devises and legatees. This Agreement shall inure to the benefit of and be enforceable by Altimmune and any of its successors and assigns. Altimmune will require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business and/or assets of Altimmune to assume expressly and agree to satisfy all of the obligations under this Agreement in the same manner and to the same extent that Altimmune would be required to satisfy such obligations if no such succession had taken place. As used in this Agreement, "Altimmune" shall mean "Altimmune" as hereinbefore defined and any successor to its respective businesses and/or assets as aforesaid which assumes and agrees to perform this Agreement by operation of law or otherwise.

15. Amendment. This Agreement may not be amended or modified otherwise than by a written agreement executed by Enright and the Chairman of the Board or their respective successors and legal representatives.

16. Construction. This Agreement shall not be construed against any party by reason of the drafting or preparation hereof.

17. Captions. The captions of this Agreement are inserted for convenience and are not part of the Agreement.

18. Severability. In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal, or unenforceable in any other respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Agreement. This Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been part of the Agreement and there shall be deemed substituted therefore such other provision as will most nearly accomplish the intent of the parties to the extent permitted by the applicable law.

19. Survivorship. Upon the expiration or other termination of this Agreement or termination of Enright's employment for any reason, the respective rights and obligations of the parties hereto shall survive such expiration or other termination to the extent necessary to carry out the intentions of the parties under this Agreement.

20. Withholding. Altimmune may withhold from any amounts payable under this Agreement such Federal, state, local or foreign taxes as shall be required to be withheld pursuant to any applicable law or regulation.

21. Section 409A.

(a) Although Altimmune does not guarantee the tax treatment of any payments or benefits provided under this Agreement, it is intended that this Agreement will comply with, or be exempt from, Code Section 409A to the extent this Agreement (or any benefit or payment provided hereunder) is subject thereto, and this Agreement shall be interpreted on a basis consistent with such intent.

(b) Notwithstanding any provision to the contrary in this Agreement, if Enright is deemed on the date of his "separation from service" (within the meaning of Treas. Reg. Section 1.409A-1(h)) with Altimmune to be a "specified employee" (within the meaning of Treas. Reg. Section 1.409A-1(i)), then with regard to any payment or benefit that is considered non-qualified deferred compensation under Code Section 409A payable on account of a "separation from service" that is required to be delayed pursuant to Code Section 409A(a)(2)(B) of the Code (after taking into account any applicable exceptions to such requirement), such payment or benefit shall be made or provided on the date that is the earlier of (i) the date immediately following the expiration of the six-month period measured from the date of Enright's "separation from service," and (ii) the date of Enright's death (the "Delay Period"). Upon the expiration of the Delay Period, all payments and benefits delayed pursuant to this Section 21(b) (whether they would have otherwise been payable in a single sum or in installments in the absence of such delay) shall be paid or reimbursed to Enright in a lump sum and any remaining payments and benefits due under this Agreement shall be paid or provided in accordance with the normal payment dates specified for them herein.

(c) Notwithstanding any provision of this Agreement to the contrary, for purposes of any provision of this Agreement providing for the payment of any amounts or benefits upon or following a termination of employment that are considered deferred compensation under Code Section 409A, references to Enright's "termination of employment" (and corollary terms) with Altimmune shall be construed to refer to Enright's "separation from service" (within the meaning of Treas. Reg. Section 1.409A-1(h)) with Altimmune.

(d) Whenever payments under this Agreement are to be made in installments, each such installment shall be deemed to be a separate payment for purposes of Code Section 409A. Whenever a payment under this Agreement specifies a payment period with reference to a number of days (e.g., "payment shall be made within thirty (30) days following the date of termination"), the actual date of payment within the specified period shall be within the sole discretion of Altimmune. Notwithstanding anything herein, Enright shall be responsible for payment of any applicable personal tax liabilities associated with the receipt of income or benefits pursuant to this Agreement.

22. Section 280G.

(a) Notwithstanding anything contained in this Agreement to the contrary, (i) to the extent that any payment or distribution of any type to or for the benefit of Enright by Altimmune, any affiliate thereof, any person or entity who acquires ownership or effective control of Altimmune or ownership of a substantial portion of Altimmune's assets (within the meaning of Section 280G of the Code and the regulations thereunder), or any affiliate of such person or entity, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Payments") constitutes "parachute payments" (within the meaning of Section 280G of the Code), and if (ii) such aggregate Payments would, if reduced by all federal, state and local taxes applicable thereto, including the excise tax imposed under Section 4999 of the Code (the "Excise Tax"), be less than the amount Enright would receive, after all taxes, if Enright received aggregate Payments equal (as valued under Section 280G of the Code) to only three times Enright's "base amount" (within the meaning of Section 280G of the Code), less $1.00, then (iii) such Payments shall be reduced (but not below zero) if and to the extent necessary so that no Payments to be made or benefit to be provided to Enright shall be subject to the Excise Tax; provided, however, that, solely to the extent applicable, Altimmune shall use its reasonable best efforts to obtain shareholder approval of the Payments provided for in this Agreement in a manner intended to satisfy requirements of the "shareholder approval" exception to Section 280G of the Code and the regulations promulgated thereunder, such that payment may be made to Enright of such Payments without the application of an Excise Tax. If the Payments are so reduced, Altimmune shall reduce or eliminate the Payments (x) by first reducing or eliminating the portion of the Payments which are not payable in cash (other than that portion of the Payments subject to clause (z) hereof), (y) then by reducing or eliminating cash payments (other than that portion of the Payments subject to clause (z) hereof) and (z) then by reducing or eliminating the portion of the Payments (whether payable in cash or not payable in cash) to which Treasury Regulation § 1.280G-1 Q/A 24(c) (or successor thereto) applies, in each case in reverse order beginning with payments or benefits which are to be paid the farthest in time.

(b) The determination of whether the Payments shall be reduced as provided in Section 22(a) hereof and the amount of such reduction shall be made at Altimmune's expense by an independent public accounting firm of national reputation selected by Altimmune (the "Accounting Firm"). The Accounting Firm shall provide its determination (the "Determination"), together with detailed supporting calculations and documentation, to Altimmune and Enright within ten (10) days after Enright's final day of employment. If the Accounting Firm determines that no Excise Tax is payable by Enright with respect to the Payments, it shall furnish Enright with an opinion reasonably acceptable to the him that no Excise Tax will be imposed with respect to any such payments and, absent manifest error, such Determination shall be binding, final and conclusive upon Altimmune and Enright.

23. Special Indemnification. Altimmune hereby agrees to hold harmless, defend, release and indemnify Enright against any and all assessments, charges, claims and liability which may be imposed upon Enright by the taxation authorities of the United Kingdom and/or of the United States of America in respect of any liability arising from Enright's service as a director of any affiliate of Altimmune located in the United Kingdom, and any resulting imputed income, inclusive of interest or penalties associated therewith. Any such indemnification payment shall, to the extent necessary to offset any taxes imposed thereon, be fully grossed-up so that the net effect upon Enright is tax neutral.

24. Counterparts. This Agreement may be executed simultaneously in two or more counterparts, each of which shall be deemed an original, but all of which shall together constitute one in the same Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first written above.

ALTIMMUNE INC.:	WILLIAM J. ENRIGHT:
By: /s/ David J. Drutz Chairman of the Board	/s/ William J. Enright
Date: December 8, 2015	Date: December 7, 2015

Exhibit 10.14

Execution Version

First Amendment to the
Amended and Restated Employment Agreement
between Altimmune, Inc. and William J. Enright

This First Amendment to the Amended and Restated Employment Agreement, effective as of January 18, 2017 (this "Amendment"), is by and between Altimmune, Inc. ("Altimmune") and William J. Enright ("Enright").

WHEREAS, Altimmune and Enright are parties to that certain Amended and Restated Employment Agreement, dated as of December 7, 2015 (the "Existing Agreement");

WHEREAS, Altimmune and Enright desire to amend the Existing Agreement as set forth in this Amendment; and

WHEREAS, Section 15 of the Existing Agreement requires that any amendment to the Existing Agreement be in a written agreement executed by Enright and the Chairman of the Company's Board of Directors;

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

1. The first paragraph of the Existing Agreement is amended and restated in its entirety to read as follows:

   "This AMENDED AND RESTATED EMPLOYMENT AGREEMENT ("Agreement") is made and entered into as of 7 December, 2015, by and between William J. Enright ("Enright") and Altimmune Inc. (f/k/a Vaxin, Inc.), a Delaware corporation ("Altimmune"). This Agreement will become effective upon the date (the "Effective Date") that is the earlier to occur of one of the following (each, an "IPO"): (x) the date of the underwriting agreement between Altimmune and the underwriter(s) managing the initial public offering of Altimmune's common stock, pursuant to which such common stock is priced for the initial public offering; and (y) the date of consummation of a transaction pursuant to which Altimmune becomes a wholly-owned subsidiary of a corporation ("Parent") that has a class of securities registered under Section 12 of the Securities Exchange Act of 1934; provided that if (i) Altimmune does not complete an IPO on or prior to June 30, 2017 or (b) Enright does not remain continuously employed by Altimmune from the date hereof through the Effective Date, this Agreement shall be void *ab initio* (*i.e.*, it shall never take effect) and the Prior Employment Agreement (as defined below) shall remain in full force and effect."

2. The fifth "WHEREAS" clause of the Existing Agreement is amended and restated in its entirety to read as follows:

   "**WHEREAS**, Altimmune and Enright both acknowledge that there is no assurance that Altimmune will complete an IPO on or prior to June 30, 2017 or at all at any time and that if it does not, the Effective Date will not occur and this Agreement will not take effect; and".

3. Section 2 of the Existing Agreement is amended and restated in its entirety to read as follows:

"**Employment Term.** Unless sooner terminated as provided elsewhere in this Agreement, Enright's employment with Altimmune under this Agreement shall begin on the Effective Date and end at 11:59 p.m. Eastern Time on December 31, 2018 (the "Initial Employment Period"). Commencing on January 1, 2019 and each January 1 thereafter (the "Extension Date"), this Agreement shall automatically renew on the terms and conditions as then in effect for additional successive periods of one (1) year unless terminated by either party upon written notice to the other party not less than ninety (90) days prior to the Extension Date. The Initial Employment Period and any extension or renewal thereof shall be referred to herein together as the "Employment Period." Notwithstanding anything to the contrary contained herein, the Employment Period is subject to termination pursuant to Section 6 hereof."

4. Section 3(c) of the Existing Agreement is amended and restated in its entirety to read as follows:

"IPO Option Award. Subject to the approval of the Committee, on the Effective Date, Altimmune shall grant (or cause to be granted) to Enright an option to purchase 133,395 shares of common stock (the "IPO Option") under the Altimmune, Inc. 2016 Omnibus Incentive Plan, an equity incentive plan of Parent, or such other equity incentive plan in effect on the Effective Date pursuant to which Enright is eligible to receive equity incentive awards (each, an "Equity Plan"). The exercise price of the IPO Option shall be equal to the initial public offering price per share of Altimmune's common stock on the Effective Date or if applicable, the closing price of Parent's common stock on a national securities exchange on the Effective Date. One hundred percent (100%) of the IPO Option shall be unvested and unexercisable as of the Effective Date. Commencing on the first anniversary of the Effective Date, twenty-five percent (25%) of the unvested portion of the IPO Option shall vest and become exercisable, and the aggregate remaining unvested portion of the IPO Option shall vest and become exercisable in equal monthly installments over the thirty-six (36) month period following such anniversary date. Notwithstanding the foregoing, if the Committee, in its sole discretion, determines that the IPO was successful, 50% of the unvested portion of the IPO Option shall immediately vest and become exercisable. For the avoidance of doubt, the Committee shall have the sole and absolute discretion to determine whether the IPO was successful for purposes of the immediately preceding sentence. Other than as set forth in this Section 3(c), the IPO Option will be governed by the terms and conditions of the Equity Plan and the applicable stock option award agreement."

5. Section 3(d) of the Existing Agreement shall be amended by replacing the reference to "2016 Plan" with "Equity Plan".

6. Except as expressly amended herein, the terms and conditions of the Existing Agreement shall remain in full force and effect.

[Signature page follows]

IN WITNESS WHEREOF, the parties hereto have executed this Amendment as of the date first written above.

ALTIMMUNE, INC.

By: /s/ David Drutz
Name: David Drutz
Title: Chairman of the Board

WILLIAM J. ENRIGHT

/s/ William J. Enright

Exhibit 10.15

EMPLOYMENT AGREEMENT

This **EMPLOYMENT AGREEMENT** ("Agreement") is made and entered into as of December 7, 2015 (the "Effective Date") by and between Elizabeth Czerepak ("Czerepak") and Altimmune, Inc. (f/k/a Vaxin, Inc.), a Delaware corporation ("Altimmune").

WHEREAS, Czerepak currently serves as the Chief Financial Officer of Altimmune pursuant to that certain Offer Letter, by and between Czerepak and Altimmune, dated as of March 26, 2015 (the "Offer Letter");

WHEREAS, the Offer Letter expressly contemplates that Altimmune and Czerepak will enter into this Agreement to govern the terms and conditions of Czerepak's employment relationship with Altimmune;

WHEREAS, in connection with the execution of this Agreement, the Board of Directors of Altimmune (the "Board") or an authorized committee thereof and Czerepak desire to terminate and supersede in its entirety, subject to Section 9 of this Agreement, the Offer Letter as of the Effective Date pursuant to the terms hereof to assure Altimmune of Czerepak's continued employment in an executive capacity and to compensate her therefor; and

WHEREAS, Czerepak acknowledges that, in executing this Agreement, she has had a reasonable opportunity to seek the advice of independent legal and tax counsel, and has read and understood all of the terms and provisions of this Agreement.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

1. Titles, Duties and Responsibilities.

(a) Title and Duties. During the Employment Period (as defined in Section 2 below), Czerepak shall serve as Chief Financial Officer of Altimmune and shall have such duties, responsibilities and authority commensurate with such position, and such additional duties and responsibilities commensurate with such position as shall be determined from time to time by the Chief Executive Officer of Altimmune (the "CEO").

(b) Reporting Responsibilities. Czerepak shall report directly to the CEO.

(c) Conflicts of Interest and Compliance with Laws. Except as specifically set forth in this Section 1(c), during the Employment Period, Czerepak shall devote her entire time, attention, energies and business efforts to the affairs of Altimmune. Except as set forth below, during the Employment Period, Czerepak shall not, without the prior written consent of the Board (x) engage, directly or indirectly, in any other business activity that materially interferes with her duties as set forth in this Agreement and/or that creates a conflict of interest, (y) act as a proprietor, partner, director, officer, executive, consultant, advisor, agent, representative or any other capacity of any entity other than Altimmune and its divisions, subsidiaries and other affiliated entities, regardless of whether such activity is for gain, profit or other pecuniary advantage, or (z) allow or cause Altimmune to participate in any transaction

with Czerepak, any of her relatives (other than as employees of Altimmune), or any entity in which Czerepak or any of her relatives has an interest. Czerepak further agrees that she shall not knowingly take any action, or authorize the taking of any action, that contravenes any applicable federal, state, municipal or other political subdivision ordinance, statute or rule, regulation or order of any jurisdiction. Czerepak agrees to immediately disclose to the Board any relationship, action or activity that may potentially be subject to the provisions of this Section 1(c).

2. Employment Term. Unless sooner terminated as provided elsewhere in this Agreement, Czerepak's employment with Altimmune under this Agreement shall begin on the Effective Date and end at 11:59 p.m. Eastern Time on December 31, 2017 (the "Initial Employment Period"). Commencing on January 1, 2018 and each January 1 thereafter (the "Extension Date"), this Agreement shall automatically renew on the terms and conditions as then in effect for additional successive periods of one (1) year unless terminated by either party upon written notice to the other party not less than ninety (90) days prior to the Extension Date. The Initial Employment Period and any extension or renewal thereof shall be referred to herein together as the "Employment Period." Notwithstanding anything to the contrary contained herein, the Employment Period is subject to termination pursuant to Section 6 hereof.

3. Salary, Bonus and Other Compensation. During Czerepak's employment, Altimmune shall provide the following salary, bonus and other compensation to Czerepak:

(a) Base Compensation. Altimmune shall pay Czerepak an initial annual base salary of Two Hundred Ninety Thousand Dollars ($290,000) per annum (or, upon the consummation of a Qualified IPO (as defined in Exhibit A hereto), the base salary shall be Three Hundred Twenty-Five Thousand Dollars ($325,000) per annum) (such salary, as applicable, "Base Salary"), payable in substantially equal installments in accordance with Altimmune's normal payroll practices. Czerepak's compensation shall be evaluated and adjusted by the Compensation Committee of the Board (the "Committee") on at least an annual basis, provided that in no event shall Czerepak's Base Salary be reduced while this Agreement is in effect.

(b) Annual Bonus. In addition to the Base Salary, during each year of the Employment Period, Czerepak will be eligible for an annual cash bonus ("Annual Bonus") with a target award equal to thirty percent (30%) of the Base Salary, prorated for any partial periods. The Annual Bonus will be subject to all of the terms and conditions of the applicable bonus plan. The actual Annual Bonus payouts will be based on achievement of the individual and/or company performance criteria established for the applicable fiscal year by the Committee in its sole and absolute discretion. Czerepak must be actively employed on December 31st of the applicable fiscal year to be eligible for an Annual Bonus payment. The Annual Bonus shall be paid no later than the March 15th of the fiscal year immediately following the fiscal year in which such Annual Bonus was earned.

(c) Equity Awards. Czerepak will be entitled to participate in the Altimmune 2016 Omnibus Incentive Plan or such other equity based long-term incentive compensation plan, program or arrangement generally made available to senior executive officers of Altimmune from time to time, as determined by the Committee in its sole and absolute discretion.

4. Benefits. During the Employment Period, Czerepak shall be eligible for participation in and shall receive all benefits under welfare benefit, savings and retirement plans provided by Altimmune (including, but not limited to, life insurance, disability insurance, medical insurance, dental insurance) to the extent applicable generally to senior executives of Altimmune, and consistent with the following specific agreements:

(a) Vacation. Czerepak will be entitled to twenty (20) days of paid vacation and six (6) days of personal and sick leave each year during the Employment Period. Czerepak is permitted to carry over a maximum of twelve (12) days of personal and sick leave per year, subject to applicable law.

(b) Health, Life, Vision and Disability Insurance. Czerepak will be entitled to participate in all health, vision and dental insurance programs provided by Altimmune to the extent applicable generally to senior executives of Altimmune.

5. Reimbursement of Business Expenses. Altimmune shall reimburse Czerepak for all reasonable and customary out-of-pocket business expenses incurred by Czerepak in the course of her duties (to include monthly expenses to maintain cellular telephone service), in accordance with Altimmune's policies as in effect from time to time. Czerepak shall be required to submit to Altimmune appropriate documentation supporting such out-of-pocket business expenses as a prerequisite to reimbursement in accordance with such policies. Notwithstanding anything herein to the contrary or otherwise, except to the extent any expense or reimbursement described in this Agreement does not constitute a "deferral of compensation" within the meaning of Section 409A of the Code and the Treasury regulations and other guidance issued thereunder, any expense or reimbursement described in this Agreement shall meet the following requirements: (i) the amount of expenses eligible for reimbursement provided to Czerepak during any calendar year will not affect the amount of expenses eligible for reimbursement to Czerepak in any other calendar year; (ii) the reimbursements for expenses for which Czerepak is entitled to be reimbursed shall be made on or before the last day of the calendar year following the calendar year in which the applicable expense is incurred; (iii) the right to payment or reimbursement or in-kind benefits hereunder may not be liquidated or exchanged for any other benefit; and (iv) the reimbursements shall be made pursuant to objectively determinable and nondiscretionary company policies and procedures regarding such reimbursement of expenses.

6. Termination Provisions.

(a) Termination by Altimmune for Cause or Termination by Czerepak without Good Reason. Altimmune may terminate Czerepak's employment immediately for Cause (as defined below) and Czerepak may terminate her employment at any time without Good Reason upon providing Altimmune at least thirty (30) days advance written notice. Upon such termination, Altimmune shall provide Czerepak with the following: (i) payment of any accrued Base Salary through and including the date of Czerepak's termination to the extent not theretofore paid; (ii) any accrued and unused vacation pay through and including the date of Czerepak's termination; (iii) any unreimbursed business expenses in accordance with Section 5 hereof, and (iv) such accrued and vested rights or benefits as may be due to Czerepak under any Altimmune sponsored employee benefits plans payable in accordance with the terms and conditions of such plans (the payments and benefits referred to in subclauses (i) through

(iv) above shall be collectively referred to as the "Accrued Obligations"). Except as provided in this Section 6(a), termination pursuant to this Section 6(a) shall terminate any other rights Czerepak may have under this Agreement and shall relieve Altimmune of any other obligations it may have under this Agreement.

For purposes of this Agreement, termination for Cause shall mean the termination of Czerepak's employment by Altimmune due to: (i) a material breach by Czerepak of her fiduciary duties to Altimmune; (ii) a material breach by Czerepak of this Agreement after being given written notice of such breach and a failure to cure within thirty (30) days of such notice; (iii) Czerepak's willful failure or refusal to follow Altimmune's written policies after being given written notice of said failure or refusal and a failure to cure within thirty (30) days of such notice; (iv) Czerepak's conviction of, or plea of guilty or *nolo contendere,* to a felony; and/or (v) Czerepak's continuing and willful refusal to act as directed by the Board or CEO (other than refusal resulting from incapacity due to physical or mental illness), after written notice is delivered to Czerepak within sixty (60) days of such refusal which identifies said refusal and sets forth a plan of corrective action and a failure to cure within thirty (30) days of such notice.

(b) Termination by Altimmune without Cause or Resignation by Czerepak for Good Reason. Altimmune may terminate Czerepak's employment without Cause at any time upon prior written notice to Czerepak and Czerepak may terminate her employment for Good Reason (as defined below). Upon such termination, subject to Czerepak's continued compliance with the restrictive covenants set forth in Section 7, Altimmune shall provide Czerepak with the following:

(i) continued payment of the Cash Severance Amount (as defined below) in equal monthly installments during the applicable severance period (as determined below) following the effective date of such termination and otherwise payable in accordance with Altimmune's normal payroll practices. As used herein, the "Cash Severance Amount" shall be equal to six (6) months of Czerepak's Base Salary existing at the time of such termination payable over the six (6) month period following such termination, except that if such termination occurs within the one (1) year period commencing on the occurrence of a Change in Control (as defined below), the Cash Severance Amount shall instead be equal to the sum of twelve (12) months of Czerepak's Base Salary (existing at the time of such termination) plus Czerepak's target Annual Bonus for the year of termination, payable over the twelve (12) month period following such termination;

(ii) subject to Czerepak's timely election, and the availability, of continuation coverage under Part 6 of Title I of the Employment Retirement Income Security Act of 1974 (as amended) and Section 4980B of the Code ("COBRA"), Altimmune will pay monthly, on Czerepak's behalf, a portion of the cost of such coverage for the six (6) months after the date of such termination, which payments will be equal to the amount of the monthly premium for such coverage, less the amount that Czerepak would have been required to pay if Czerepak had remained an active employee of Altimmune (the "COBRA Assistance"); provided, however, if at any time Altimmune determines that the COBRA Assistance would result in a violation of the non-discrimination rules under Section 105(h)(2) of the Internal Revenue Code of 1986, as amended (the "Code") or any other applicable laws, statute or regulation of similar effect (including, but not limited to, the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of providing the COBRA Assistance, Altimmune will instead pay Czerepak fully taxable cash payments equal to, and paid at the same time as, the COBRA Assistance would have otherwise been paid, subject to applicable tax withholdings;

(iii) any unpaid prior year's Annual Bonus, payable by Altimmune to Czerepak at the same time annual bonuses in respect of the prior year are generally paid to senior executives of Altimmune;

(iv) the Accrued Obligations; and

(v) if such termination occurs within the one (1) year period commencing on the occurrence of a Change in Control, accelerated vesting of all unvested equity awards then outstanding and held by Czerepak (for the avoidance of doubt, if such termination does not occur during such one (1) year period, then any accelerated vesting of unvested equity awards shall be at the discretion of the Committee).

For purposes of this Agreement, resignation for Good Reason shall mean the resignation by Czerepak of her employment due to: (a) a reduction in Czerepak's Base Salary or target Annual Bonus opportunity; (b) a material diminution in Czerepak's authority, duties or responsibilities; or (c) a relocation by Altimmune of Czerepak's principal place of business for the performance of her duties under this Agreement to a location that is anywhere outside of a 50-mile radius of Gaithersburg, Maryland; provided, however, that Czerepak must notify Altimmune within ninety (90) days of the occurrence of any of the foregoing conditions that she considers to be a "Good Reason" condition and provide Altimmune with thirty (30) days in which to cure the condition. If Czerepak fails to provide this notice and cure period prior to her resignation, or resigns more than six (6) months after the initial existence of the condition, her resignation will not be deemed to be for "Good Reason."

For purposes of this Agreement, "Change in Control" means the occurrence of either (i) an acquisition from stockholders of Altimmune (including through purchase, reorganization, merger, consolidation or similar transaction), directly or indirectly, in one or more transactions by a Person (other than any Person or group of Persons consisting solely of shareholders of Altimmune as of the date immediately prior to the consummation of the transaction) of beneficial ownership (within the meaning of Rule 13d-3 under the Exchange Act) of securities representing 50% or more of the combined voting power of the securities of Altimmune entitled to vote generally in the election of directors of the Board, calculated on a fully diluted basis after giving effect to such acquisition, or (ii) the sale or other disposition, directly or indirectly, of all or substantially all of the assets of Altimmune and its subsidiaries, taken as a whole, to any Person (other than any Person or group of Persons consisting solely of shareholders of Altimmune as of the date immediately prior to the consummation of the transaction). For the avoidance of doubt, a transaction effected primarily for the purpose of (x) an equity financing of Altimmune, (y) the reincorporation of Altimmune in a different state, or (z) the formation of a holding company that will be owned exclusively by Altimmune's stockholders, shall not be a Change in Control for purposes of this Agreement. A "Person" means any individual, entity or group within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder, other than employee benefit plans sponsored or maintained by Altimmune and by entities controlled by Altimmune or an underwriter of the capital stock of Altimmune in a registered public offering.

(c) Death or Disability. Czerepak's employment shall terminate automatically upon Czerepak's death. Subject to applicable law, Altimmune may terminate Czerepak's employment due to Czerepak's Disability (as defined below). Upon any such termination, Altimmune shall provide Czerepak (or her estate as the case may be) with the Accrued Obligations through the date of termination. The term "Disability" shall mean Czerepak becoming physically or mentally disabled such that she is unable to perform her duties to Altimmune for a period of 90 consecutive days.

(d) Expiration of Employment Term. In the event notice of termination is provided by Czerepak in accordance with Section 2, Czerepak's employment shall terminate upon the expiration of the Employment Period. Upon such termination, Altimmune shall provide Czerepak with the Accrued Obligations through the date of termination and her Annual Bonus.

(e) Limits. Notwithstanding anything herein to the contrary, Altimmune's obligation to make any payments or benefits to Czerepak upon termination of her employment under the circumstances described in Section 6(b) (other than the Accrued Obligations) and 6(d) (other than the Accrued Obligations) is conditioned upon Czerepak's execution, delivery and non-revocation of a valid and enforceable release of claims arising in connection with Czerepak's employment and termination or resignation of employment with Altimmune and its affiliates (the "Release") that becomes effective not later than sixty (60) days after the date of such termination or resignation of employment. Altimmune shall provide the form of the Release to Czerepak within seven (7) days following the date of Czerepak's termination or resignation of employment. Subject to the foregoing and Section 21 hereof, the Cash Severance Amount will commence to be paid to Czerepak on the sixtieth (60th) day following Czerepak's termination or resignation of employment, and such first payment shall include payment of any amounts that would otherwise be due prior thereto. On any termination entitling Czerepak to the payments and benefits under Section 6(b) or 6(d), Altimmune and its affiliates shall have no further obligation to make payments under this Agreement other than as specifically provided for in such section.

(f) Resignation from All Positions. Unless the parties otherwise agree in writing, upon the termination or resignation of Czerepak's employment with Altimmune for any reason, Czerepak shall be deemed to have resigned, as of the date of such termination or resignation, from and with respect to all positions Czerepak then holds as an officer, director or employee with Altimmune and any of its affiliates.

7. Secrecy, Non-Solicitation and Non-Competition.

(a) Secrecy. During the Employment Period and thereafter, Czerepak covenants and agrees that she will not, except in performance of Czerepak's obligations to Altimmune, or with the prior written consent of Altimmune pursuant to the authority granted by a resolution of the Board, directly or indirectly, disclose any secret or confidential information that she may learn or has learned by reason of her association with Altimmune or use any such information. The term "secret or confidential information" includes, without limitation, information not previously disclosed to the public or to the trade by Altimmune's management with respect to Altimmune's products, facilities and methods, trade secrets and other intellectual property, systems, procedures, manuals, confidential reports, product price

lists, customer lists, member lists, financial information (including the revenues, costs or profits associated with any Altimmune's products), business plans, prospects, employee or employees, compensation, or opportunities but shall exclude any information already in the public domain which has been disclosed to the public during the normal course of Altimmune's business. Notwithstanding anything herein to the contrary, nothing in this Agreement shall be construed to prohibit Czerepak from reporting possible violations of federal or state law or regulations to any governmental agency or entity, including but not limited to the Department of Justice, the Securities and Exchange Commission, the Congress, and any agency Inspector General, or making other disclosures that are protected under the whistleblower provisions of federal or state law or regulation. Czerepak does not need the prior authorization of Altimmune to make any such reports or disclosures and Czerepak is not required to notify Altimmune that she made such reports or disclosures.

(b) Non-solicitation of Clients and Customers. Czerepak covenants and agrees that during the Employment Period and for a period of six (6) months thereafter, she will not solicit, either directly or indirectly, any customer or client of Altimmune on behalf of any direct competitor of Altimmune for the purpose of diverting business from Altimmune. This Agreement extends to prevent Czerepak from soliciting on behalf of Czerepak or any other individual or entity that seeks to compete with Altimmune.

(c) Non-solicitation of Employees. Czerepak covenants and agrees that during the Employment Period and for a period of six (6) months thereafter, she shall not directly or indirectly, on her behalf or on behalf of any person or other entity, solicit or induce, or attempt to solicit or induce, any person who is an employee of Altimmune, to terminate his or her employment with Altimmune.

(d) Noncompetition. Czerepak covenants and agrees that during the Employment Period and for a period of six (6) months thereafter, she will not directly or indirectly work for or engage in sales, marketing or related activities on behalf of herself or any other person or entity that is a direct competitor of Altimmune.

(e) Equitable Relief. Czerepak acknowledges and agrees that the services performed by her are special, unique and extraordinary in that, by reason of Czerepak's employment, Czerepak may acquire confidential information and trade secrets concerning the operation of Altimmune, or that Czerepak may have contact with or obtain knowledge of Altimmune's members or prospects, the use or disclosure of which could cause Altimmune substantial loss and damages, which could not be readily calculated and for which no remedy at law would be adequate. Accordingly, Czerepak acknowledges and agrees that Altimmune shall be entitled to obtain a temporary restraining order and/or a preliminary or permanent injunction restraining Czerepak from engaging in activities prohibited by this Section 7 or such other relief as may be required to specifically enforce any of the covenants in this Section 7. Czerepak acknowledges and agrees that Altimmune shall be entitled to its attorneys' fees and court costs should Altimmune successfully pursue legal action to enforce its rights under this Section 7.

(f) Return of Property. Upon termination or resignation of Czerepak's employment with Altimmune, Czerepak shall promptly supply to Altimmune all property, keys, notes, memoranda, writings, lists, files, reports, customer lists, correspondence, tapes, disks, cards, surveys, maps, logs, machines, technical data and any other tangible product or document which has been produced by, received by or otherwise submitted to Czerepak during or prior to her employment with Altimmune, and any copies thereof in Czerepak's (or capable of being reduced to Czerepak's) possession.

(g) Survival. Any termination of Czerepak's employment, of the Employment Period or of this Agreement (or breach of this Agreement by Altimmune or Czerepak) shall have no effect on the continuing operation of this Section 7.

8. Governing Law. This Agreement is made and entered into in the State of Maryland, without regard to conflict of laws rules, and the laws of the State of Maryland shall govern its validity and interpretation in the performance by the parties of their respective duties and obligations.

9. Entire Agreement. This Agreement constitutes the entire agreement between the parties with respect to the matters described herein and supersedes all prior agreements and understandings both written and oral, among the parties with respect to the subject matter hereof (including, without limitation, the Offer Letter), and there are no representation, warranties or commitments, other than those in writing executed by the parties hereto; provided, however, that Czerepak's reimbursement obligations to Altimmune for the sign-on bonus and the relocation allowance under the Offer Letter shall survive until the first anniversary of Czerepak's employment commencement date with Altimmune.

10. Consent to Venue. Any dispute, controversy, or claim arising out of or relating to this Agreement or the breach thereof, arising out of or relating in any way to the employment of Czerepak or termination thereof, shall be brought in the Federal courts located in the State of Maryland; provided, however, that if any of the aforementioned courts is found to lack subject matter jurisdiction, then to the exclusive jurisdiction of the state courts in the State of Maryland. By executing and delivering this Agreement, each party, for itself or herself and in connection with its or her properties, irrevocably (a) accepts generally and unconditionally the exclusive jurisdiction and venue of such courts; (b) waives any defense of forum non conveniens; (c) agrees that service of all process in any such proceeding in any such court may be made by registered or certified mail, return receipt requested, to the applicable party at its address provided herein; and (d) agrees that service as provided in clause (c) above is sufficient to confer personal jurisdiction over the applicable party in any such proceeding in any such court, and otherwise constitutes effective and binding service in every respect.

11. WAIVER OF JURY TRIAL. EACH PARTY HERETO IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT TO TRIAL BY JURY IN ANY DISPUTE, CONTROVERSY OR CLAIM, WHETHER SOUNDING IN CONTRACT, TORT OR OTHERWISE, AMONG THE PARTIES HERETO ARISING OUT OF OR RELATING IN ANY WAY TO THE EMPLOYMENT OF CZEREPAK OR TERMINATION THEREOF OR FOR ANY COUNTERCLAIM THEREIN. THE PARTIES HERETO MAY FILE AN ORIGINAL COUNTERPART OR A COPY OF THIS AGREEMENT WITH ANY COURT OF COMPETENT JURISDICTION AS PROVIDED HEREIN AS WRITTEN EVIDENCE OF THE CONSENT OF THE PARTIES HERETO TO THE WAIVER OF THEIR RIGHT TO TRIAL BY JURY.

12. Assistance in Litigation. Czerepak shall make herself available, upon the request of Altimmune, to testify or otherwise assist in litigation, arbitration, or other disputes involving Altimmune, or any of the directors, officers, executives, subsidiaries, or parent corporations of Altimmune, at no additional cost during the Employment Period and at any time following the termination of Czerepak's employment for any reason; provided, however, in the event such request is made by Altimmune after the Employment Period, Czerepak shall be reimbursed for any reasonable out-of-pocket expenses incurred with respect thereto and shall also be paid a reasonable daily stipend based on her Base Salary at the time of termination.

13. Notices. Any notice or communication required or permitted to be given to the parties shall be delivered personally or sent by registered or certified mail, postage prepaid and return receipt requested, and addressed or delivered as follows, or to such other address as the party addressed may have substituted by notice pursuant to this Section.

(a) If to Altimmune, to:

Altimmune, Inc.
19 Firstfield Road, Suite 200
Gaithersburg, Maryland 20878
ATTN: Chief Executive Officer

(b) If to Czerepak, to:

The last address on file with Altimmune at the time of Notice.

14. Binding Agreement. This Agreement shall inure to the benefit of and be enforceable by Czerepak and her personal or legal representatives, executors, administrators, successors, heirs, distributees, devises and legatees. This Agreement shall inure to the benefit of and be enforceable by Altimmune and any of its successors and assigns. Altimmune will require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business and/or assets of Altimmune to assume expressly and agree to satisfy all of the obligations under this Agreement in the same manner and to the same extent that Altimmune would be required to satisfy such obligations if no such succession had taken place. As used in this Agreement, "Altimmune" shall mean "Altimmune" as hereinbefore defined and any successor to its respective businesses and/or assets as aforesaid which assumes and agrees to perform this Agreement by operation of law or otherwise.

15. Amendment. This Agreement may not be amended or modified otherwise than by a written agreement executed by Czerepak and the Chairman of the Board or their respective successors and legal representatives.

16. Construction. This Agreement shall not be construed against any party by reason of the drafting or preparation hereof.

17. Captions. The captions of this Agreement are inserted for convenience and are not part of the Agreement.

18. Severability. In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal, or unenforceable in any other respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Agreement. This Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been part of the Agreement and there shall be deemed substituted therefore such other provision as will most nearly accomplish the intent of the parties to the extent permitted by the applicable law.

19. Survivorship. Upon the expiration or other termination of this Agreement or termination of Czerepak's employment for any reason, the respective rights and obligations of the parties hereto shall survive such expiration or other termination to the extent necessary to carry out the intentions of the parties under this Agreement.

20. Withholding. Altimmune may withhold from any amounts payable under this Agreement such Federal, state, local or foreign taxes as shall be required to be withheld pursuant to any applicable law or regulation.

21. Section 409A.

(a) Although Altimmune does not guarantee the tax treatment of any payments or benefits provided under this Agreement, it is intended that this Agreement will comply with, or be exempt from, Code Section 409A to the extent this Agreement (or any benefit or payment provided hereunder) is subject thereto, and this Agreement shall be interpreted on a basis consistent with such intent.

(b) Notwithstanding any provision to the contrary in this Agreement, if Czerepak is deemed on the date of her "separation from service" (within the meaning of Treas. Reg. Section 1.409A-1(h)) with Altimmune to be a "specified employee" (within the meaning of Treas. Reg. Section 1.409A-1(i)), then with regard to any payment or benefit that is considered non-qualified deferred compensation under Code Section 409A payable on account of a "separation from service" that is required to be delayed pursuant to Code Section 409A(a)(2)(B) of the Code (after taking into account any applicable exceptions to such requirement), such payment or benefit shall be made or provided on the date that is the earlier of (i) the date immediately following the expiration of the six-month period measured from the date of Czerepak's "separation from service," and (ii) the date of Czerepak's death (the "Delay Period"). Upon the expiration of the Delay Period, all payments and benefits delayed pursuant to this Section 21(b) (whether they would have otherwise been payable in a single sum or in installments in the absence of such delay) shall be paid or reimbursed to Czerepak in a lump sum and any remaining payments and benefits due under this Agreement shall be paid or provided in accordance with the normal payment dates specified for them herein.

(c) Notwithstanding any provision of this Agreement to the contrary, for purposes of any provision of this Agreement providing for the payment of any amounts or benefits upon or following a termination of employment that are considered deferred compensation under Code Section 409A, references to Czerepak's "termination of employment" (and corollary terms) with Altimmune shall be construed to refer to Czerepak's "separation from service" (within the meaning of Treas. Reg. Section 1.409A-1(h)) with Altimmune.

(d) Whenever payments under this Agreement are to be made in installments, each such installment shall be deemed to be a separate payment for purposes of Code Section 409A. Whenever a payment under this Agreement specifies a payment period with reference to a number of days (e.g., "payment shall be made within thirty (30) days following the date of termination"), the actual date of payment within the specified period shall be within the sole discretion of Altimmune. Notwithstanding anything herein, Czerepak shall be responsible for payment of any applicable personal tax liabilities associated with the receipt of income or benefits pursuant to this Agreement.

22. Section 280G.

(a) Notwithstanding anything contained in this Agreement to the contrary, (i) to the extent that any payment or distribution of any type to or for the benefit of Czerepak by Altimmune, any affiliate thereof, any person or entity who acquires ownership or effective control of Altimmune or ownership of a substantial portion of Altimmune's assets (within the meaning of Section 280G of the Code and the regulations thereunder), or any affiliate of such person or entity, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Payments") constitutes "parachute payments" (within the meaning of Section 280G of the Code), and if (ii) such aggregate Payments would, if reduced by all federal, state and local taxes applicable thereto, including the excise tax imposed under Section 4999 of the Code (the "Excise Tax"), be less than the amount Czerepak would receive, after all taxes, if Czerepak received aggregate Payments equal (as valued under Section 280G of the Code) to only three times Czerepak's "base amount" (within the meaning of Section 280G of the Code), less $1.00, then (iii) such Payments shall be reduced (but not below zero) if and to the extent necessary so that no Payments to be made or benefit to be provided to Czerepak shall be subject to the Excise Tax; provided, however, that, solely to the extent applicable, Altimmune shall use its reasonable best efforts to obtain shareholder approval of the Payments provided for in this Agreement in a manner intended to satisfy requirements of the "shareholder approval" exception to Section 280G of the Code and the regulations promulgated thereunder, such that payment may be made to Czerepak of such Payments without the application of an Excise Tax. If the Payments are so reduced, Altimmune shall reduce or eliminate the Payments (x) by first reducing or eliminating the portion of the Payments which are not payable in cash (other than that portion of the Payments subject to clause (z) hereof), (y) then by reducing or eliminating cash payments (other than that portion of the Payments subject to clause (z) hereof) and (z) then by reducing or eliminating the portion of the Payments (whether payable in cash or not payable in cash) to which Treasury Regulation § 1.280G-1 Q/A 24(c) (or successor thereto) applies, in each case in reverse order beginning with payments or benefits which are to be paid the farthest in time.

(b) The determination of whether the Payments shall be reduced as provided in Section 22(a) hereof and the amount of such reduction shall be made at Altimmune's expense by an independent public accounting firm of national reputation selected by Altimmune (the "Accounting Firm"). The Accounting Firm shall provide its determination (the "Determination"), together with detailed supporting calculations and documentation, to Altimmune and Czerepak within ten (10) days after Czerepak's final day of employment. If the Accounting Firm determines that no Excise Tax is payable by Czerepak with respect to the Payments, it shall furnish Czerepak with an opinion reasonably acceptable to her that no Excise Tax will be imposed with respect to any such payments and, absent manifest error, such Determination shall be binding, final and conclusive upon Altimmune and Czerepak.

23. Counterparts. This Agreement may be executed simultaneously in two or more counterparts, each of which shall be deemed an original, but all of which shall together constitute one in the same Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first written above.

ALTIMMUNE, INC.:

By: /s/ William J. Enright
Chief Executive Officer

Date: December 7, 2015

ELIZABETH CZEREPAK:

/s/ Elizabeth Czerepak

Date: December 7, 2015

Exhibit 10.16

Execution Version

First Amendment to the Employment Agreement
between Altimmune, Inc. and Elizabeth Czerepak

This First Amendment to the Employment Agreement, effective as of January 18, 2017 (this "Amendment"), is by and between Altimmune, Inc. ("Altimmune") and Elizabeth Czerepak ("Czerepak").

WHEREAS, Altimmune and Czerepak are parties to that certain Employment Agreement, dated as of December 7, 2015 (the "Existing Agreement");

WHEREAS, Altimmune and Czerepak desire to amend the Existing Agreement as set forth in this Amendment; and

WHEREAS, Section 15 of the Existing Agreement requires that any amendment to the Existing Agreement be in a written agreement executed by Czerepak and the Chairman of the Company's Board of Directors;

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

1. Section 1(a) of the Existing Agreement is amended and restated in its entirety to read as follows:

   "Title and Duties. During the Employment Period (as defined in Section 2 below), Czerepak shall serve as Chief Financial Officer and Executive Vice President, Corporate Development, of Altimmune and shall have such duties, responsibilities and authority commensurate with such positions, and such additional duties and responsibilities commensurate with such positions as shall be determined from time to time by the Chief Executive Officer of Altimmune (the "CEO")."

2. Exhibit A to the Existing Agreement is amended and restated in its entirety to read as follows:

   "A "Qualified IPO" shall mean (i) an initial public offering of Altimmune's common stock with gross proceeds to Altimmune of at least $25 million from new investors at a valuation of at least $125 million or (ii) the consummation of a transaction pursuant to which Altimmune becomes a wholly-owned subsidiary of a corporation that has a class of securities registered under Section 12 of the Securities Exchange Act of 1934."

3. Except as expressly amended herein, the terms and conditions of the Existing Agreement shall remain in full force and effect.

[Signature page follows]

IN WITNESS WHEREOF, the parties hereto have executed this Amendment as of the date first written above.

ALTIMMUNE, INC.

By: /s/ William Enright
Name: William Enright
Title: Chief Executive Officer

ELIZABETH CZEREPAK

/s/ Elizabeth Czerepak

Exhibit 10.17

EMPLOYMENT AGREEMENT

This **EMPLOYMENT AGREEMENT** ("Agreement") is made and entered into as of December 7, 2015 (the "Effective Date") by and between M. Scot Roberts ("Roberts") and Altimmune, Inc. (f/k/a Vaxin, Inc.), a Delaware corporation ("Altimmune").

WHEREAS, Roberts currently serves as the Chief Scientific Officer of Altimmune pursuant to that certain Offer Letter, by and between Roberts and Altimmune, dated as of October 29, 2012 (the "Offer Letter");

WHEREAS, in connection with the execution of this Agreement, the Board of Directors of Altimmune (the "Board") or an authorized committee thereof and Roberts desire to terminate and supersede in its entirety the Offer Letter as of the Effective Date pursuant to the terms hereof to assure Altimmune of Roberts' continued employment in an executive capacity and to compensate him therefor; and

WHEREAS, Roberts acknowledges that, in executing this Agreement, he has had a reasonable opportunity to seek the advice of independent legal and tax counsel, and has read and understood all of the terms and provisions of this Agreement.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

1. Titles, Duties and Responsibilities.

(a) Title and Duties. During the Employment Period (as defined in Section 2 below), Roberts shall serve as Chief Scientific Officer of Altimmune and shall have such duties, responsibilities and authority commensurate with such position, and such additional duties and responsibilities commensurate with such position as shall be determined from time to time by the Chief Executive Officer of Altimmune (the "CEO").

(b) Reporting Responsibilities. Roberts shall report directly to the CEO.

(c) Conflicts of Interest and Compliance with Laws. Except as specifically set forth in this Section 1(c), during the Employment Period, Roberts shall devote his entire time, attention, energies and business efforts to the affairs of Altimmune. Except as set forth below, during the Employment Period, Roberts shall not, without the prior written consent of the Board (x) engage, directly or indirectly, in any other business activity that materially interferes with his duties as set forth in this Agreement and/or that creates a conflict of interest, (y) act as a proprietor, partner, director, officer, executive, consultant, advisor, agent, representative or any other capacity of any entity other than Altimmune and its divisions, subsidiaries and other affiliated entities, regardless of whether such activity is for gain, profit or other pecuniary advantage, or (z) allow or cause Altimmune to participate in any transaction with Roberts, any of his relatives (other than as employees of Altimmune), or any entity in which Roberts or any of his relatives has an interest. Roberts further agrees that he shall not knowingly take any action, or authorize the taking of any action, that contravenes any applicable federal, state, municipal or other political subdivision ordinance, statute or rule, regulation or order of any jurisdiction. Roberts agrees to immediately disclose to the Board any relationship, action or activity that may potentially be subject to the provisions of this Section 1(c).

2. Employment Term. Unless sooner terminated as provided elsewhere in this Agreement, Roberts' employment with Altimmune under this Agreement shall begin on the Effective Date and end at 11:59 p.m. Eastern Time on December 31, 2017 (the "Initial Employment Period"). Commencing on January 1, 2018 and each January 1 thereafter (the "Extension Date"), this Agreement shall automatically renew on the terms and conditions as then in effect for additional successive periods of one (1) year unless terminated by either party upon written notice to the other party not less than ninety (90) days prior to the Extension Date. The Initial Employment Period and any extension or renewal thereof shall be referred to herein together as the "Employment Period." Notwithstanding anything to the contrary contained herein, the Employment Period is subject to termination pursuant to Section 6 hereof.

3. Salary, Bonus and Other Compensation. During Roberts' employment, Altimmune shall provide the following salary, bonus and other compensation to Roberts:

(a) Base Compensation. Altimmune shall pay Roberts an initial annual base salary of Two Hundred Thousand Dollars ($200,000) per annum (or, upon the consummation of a Qualified IPO (as defined in Exhibit A hereto), the base salary shall be Two Hundred Twenty Thousand Dollars ($220,000) per annum) (such salary, as applicable, "Base Salary"), payable in substantially equal installments in accordance with Altimmune's normal payroll practices. Roberts' compensation shall be evaluated and adjusted by the Compensation Committee of the Board (the "Committee") on at least an annual basis, provided that in no event shall Roberts' Base Salary be reduced while this Agreement is in effect.

(b) Annual Bonus. In addition to the Base Salary, during each year of the Employment Period, Roberts will be eligible for an annual cash bonus ("Annual Bonus") with a target award equal to thirty percent (30%) of the Base Salary. The Annual Bonus will be subject to all of the terms and conditions of the applicable bonus plan. The actual Annual Bonus payouts will be based on achievement of the individual and/or company performance criteria established for the applicable fiscal year by the Committee in its sole and absolute discretion. Roberts must be actively employed on December 31st of the applicable fiscal year to be eligible for an Annual Bonus payment. The Annual Bonus shall be paid no later than the March 15th of the fiscal year immediately following the fiscal year in which such Annual Bonus was earned.

(c) Equity Awards. Roberts will be entitled to participate in the Altimmune 2016 Omnibus Incentive Plan or such other equity based long-term incentive compensation plan, program or arrangement generally made available to senior executive officers of Altimmune from time to time, as determined by the Committee in its sole and absolute discretion.

4. Benefits. During the Employment Period, Roberts shall be eligible for participation in and shall receive all benefits under welfare benefit, savings and retirement plans provided by Altimmune (including, but not limited to, life insurance, disability insurance, medical insurance, dental insurance) to the extent applicable generally to senior executives of Altimmune, and consistent with the following specific agreements:

(a) Vacation. Roberts will be entitled to twenty (20) days of paid vacation and six (6) days of personal and sick leave each year during the Employment Period. Roberts is permitted to carry over a maximum of twelve (12) days of personal and sick leave per year, subject to applicable law.

(b) Health, Life, Vision and Disability Insurance. Roberts will be entitled to participate in all health, vision and dental insurance programs provided by Altimmune to the extent applicable generally to senior executives of Altimmune.

5. Reimbursement of Business Expenses. Altimmune shall reimburse Roberts for all reasonable and customary out-of-pocket business expenses incurred by Roberts in the course of his duties (to include monthly expenses to maintain cellular telephone service), in accordance with Altimmune's policies as in effect from time to time. Roberts shall be required to submit to Altimmune appropriate documentation supporting such out-of-pocket business expenses as a prerequisite to reimbursement in accordance with such policies. Notwithstanding anything herein to the contrary or otherwise, except to the extent any expense or reimbursement described in this Agreement does not constitute a "deferral of compensation" within the meaning of Section 409A of the Code and the Treasury regulations and other guidance issued thereunder, any expense or reimbursement described in this Agreement shall meet the following requirements: (i) the amount of expenses eligible for reimbursement provided to Roberts during any calendar year will not affect the amount of expenses eligible for reimbursement to Roberts in any other calendar year; (ii) the reimbursements for expenses for which Roberts is entitled to be reimbursed shall be made on or before the last day of the calendar year following the calendar year in which the applicable expense is incurred; (iii) the right to payment or reimbursement or in-kind benefits hereunder may not be liquidated or exchanged for any other benefit; and (iv) the reimbursements shall be made pursuant to objectively determinable and nondiscretionary company policies and procedures regarding such reimbursement of expenses.

6. Termination Provisions.

(a) Termination by Altimmune for Cause or Termination by Roberts without Good Reason. Altimmune may terminate Roberts' employment immediately for Cause (as defined below) and Roberts may terminate his employment at any time without Good Reason upon providing Altimmune at least thirty (30) days advance written notice. Upon such termination, Altimmune shall provide Roberts with the following: (i) payment of any accrued Base Salary through and including the date of Roberts' termination to the extent not theretofore paid; (ii) any accrued and unused vacation pay through and including the date of Roberts' termination; (iii) any unreimbursed business expenses in accordance with Section 5 hereof, and (iv) such accrued and vested rights or benefits as may be due to Roberts under any Altimmune sponsored employee benefits plans payable in accordance with the terms and conditions of such plans (the payments and benefits referred to in subclauses (i) through (iv) above shall be collectively referred to as the "Accrued Obligations"). Except as provided in this Section 6(a), termination pursuant to this Section 6(a) shall terminate any other rights Roberts may have under this Agreement and shall relieve Altimmune of any other obligations it may have under this Agreement.

For purposes of this Agreement, termination for Cause shall mean the termination of Roberts' employment by Altimmune due to: (i) a material breach by Roberts of his fiduciary duties to Altimmune; (ii) a material breach by Roberts of this Agreement after being given written notice of such breach and a failure to cure within thirty (30) days of such notice; (iii) Roberts' willful failure or refusal to follow Altimmune's written policies after being given written notice of said failure or refusal and a failure to cure within thirty (30) days of such notice; (iv) Roberts' conviction of, or plea of guilty or *nolo contendere,* to a felony; and/or (v) Roberts' continuing and willful refusal to act as directed by the Board or CEO (other than refusal resulting from incapacity due to physical or mental illness), after written notice is delivered to Roberts within sixty (60) days of such refusal which identifies said refusal and sets forth a plan of corrective action and a failure to cure within thirty (30) days of such notice.

(b) Termination by Altimmune without Cause or Resignation by Roberts for Good Reason. Altimmune may terminate Roberts' employment without Cause at any time upon prior written notice to Roberts and Roberts may terminate his employment for Good Reason (as defined below). Upon such termination, subject to Roberts' continued compliance with the restrictive covenants set forth in Section 7, Altimmune shall provide Roberts with the following:

(i) continued payment of the Cash Severance Amount (as defined below) in equal monthly installments during the applicable severance period (as determined below) following the effective date of such termination and otherwise payable in accordance with Altimmune's normal payroll practices. As used herein, the "Cash Severance Amount" shall be equal to six (6) months of Roberts' Base Salary existing at the time of such termination payable over the six (6) month period following such termination, except that if such termination occurs within the one (1) year period commencing on the occurrence of a Change in Control (as defined below), the Cash Severance Amount shall instead be equal to the sum of twelve (12) months of Roberts' Base Salary (existing at the time of such termination) plus Roberts' target Annual Bonus for the year of termination, payable over the twelve (12) month period following such termination;

(ii) subject to Roberts' timely election, and the availability, of continuation coverage under Part 6 of Title I of the Employment Retirement Income Security Act of 1974 (as amended) and Section 4980B of the Code ("COBRA"), Altimmune will pay monthly, on Roberts' behalf, a portion of the cost of such coverage for the six (6) months after the date of such termination, which payments will be equal to the amount of the monthly premium for such coverage, less the amount that Roberts would have been required to pay if Roberts had remained an active employee of Altimmune (the "COBRA Assistance"); provided, however, if at any time Altimmune determines that the COBRA Assistance would result in a violation of the non-discrimination rules under Section 105(h)(2) of the Internal Revenue Code of 1986, as amended (the "Code") or any other applicable laws, statute or regulation of similar effect (including, but not limited to, the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of providing the COBRA Assistance, Altimmune will instead pay Roberts fully taxable cash payments equal to, and paid at the same time as, the COBRA Assistance would have otherwise been paid, subject to applicable tax withholdings;

(iii) any unpaid prior year's Annual Bonus, payable by Altimmune to Roberts at the same time annual bonuses in respect of the prior year are generally paid to senior executives of Altimmune;

(iv) the Accrued Obligations; and

(v) if such termination occurs within the one (1) year period commencing on the occurrence of a Change in Control, accelerated vesting of all unvested equity awards then outstanding and held by Roberts (for the avoidance of doubt, if such termination does not occur during such one (1) year period, then any accelerated vesting of unvested equity awards shall be at the discretion of the Committee).

For purposes of this Agreement, resignation for Good Reason shall mean the resignation by Roberts of his employment due to: (a) a reduction in Roberts' Base Salary or target Annual Bonus opportunity; (b) a material diminution in Roberts' authority, duties or responsibilities; or (c) a relocation by Altimmune of Roberts' principal place of business for the performance of his duties under this Agreement to a location that is anywhere outside of a 50-mile radius of Gaithersburg, Maryland; provided, however, that Roberts must notify Altimmune within ninety (90) days of the occurrence of any of the foregoing conditions that he considers to be a "Good Reason" condition and provide Altimmune with thirty (30) days in which to cure the condition. If Roberts fails to provide this notice and cure period prior to his resignation, or resigns more than six (6) months after the initial existence of the condition, his resignation will not be deemed to be for "Good Reason."

For purposes of this Agreement, "Change in Control" means the occurrence of either (i) an acquisition from stockholders of Altimmune (including through purchase, reorganization, merger, consolidation or similar transaction), directly or indirectly, in one or more transactions by a Person (other than any Person or group of Persons consisting solely of shareholders of Altimmune as of the date immediately prior to the consummation of the transaction) of beneficial ownership (within the meaning of Rule 13d-3 under the Exchange Act) of securities representing 50% or more of the combined voting power of the securities of Altimmune entitled to vote generally in the election of directors of the Board, calculated on a fully diluted basis after giving effect to such acquisition, or (ii) the sale or other disposition, directly or indirectly, of all or substantially all of the assets of Altimmune and its subsidiaries, taken as a whole, to any Person (other than any Person or group of Persons consisting solely of shareholders of Altimmune as of the date immediately prior to the consummation of the transaction). For the avoidance of doubt, a transaction effected primarily for the purpose of (x) an equity financing of Altimmune, (y) the reincorporation of Altimmune in a different state, or (z) the formation of a holding company that will be owned exclusively by Altimmune's stockholders, shall not be a Change in Control for purposes of this Agreement. A "Person" means any individual, entity or group within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder, other than employee benefit plans sponsored or maintained by Altimmune and by entities controlled by Altimmune or an underwriter of the capital stock of Altimmune in a registered public offering.

(c) Death or Disability. Roberts' employment shall terminate automatically upon Roberts' death. Subject to applicable law, Altimmune may terminate Roberts' employment due to Roberts' Disability (as defined below). Upon any such termination, Altimmune shall provide Roberts (or his estate as the case may be) with the Accrued Obligations through the date of termination. The term "Disability" shall mean Roberts becoming physically or mentally disabled such that he is unable to perform his duties to Altimmune for a period of 90 consecutive days.

(d) Expiration of Employment Term. In the event notice of termination is provided by Roberts in accordance with Section 2, Roberts' employment shall terminate upon the expiration of the Employment Period. Upon such termination, Altimmune shall provide Roberts with the Accrued Obligations through the date of termination and his Annual Bonus.

(e) Limits. Notwithstanding anything herein to the contrary, Altimmune's obligation to make any payments or benefits to Roberts upon termination of his employment under the circumstances described in Section 6(b) (other than the Accrued Obligations) and 6(d) (other than the Accrued Obligations) is conditioned upon Roberts' execution, delivery and non-revocation of a valid and enforceable release of claims arising in connection with Roberts' employment and termination or resignation of employment with Altimmune and its affiliates (the "Release") that becomes effective not later than sixty (60) days after the date of such termination or resignation of employment. Altimmune shall provide the form of the Release to Roberts within seven (7) days following the date of Roberts' termination or resignation of employment. Subject to the foregoing and Section 21 hereof, the Cash Severance Amount will commence to be paid to Roberts on the sixtieth (60th) day following Roberts' termination or resignation of employment, and such first payment shall include payment of any amounts that would otherwise be due prior thereto. On any termination entitling Roberts to the payments and benefits under Section 6(b) or 6(d), Altimmune and its affiliates shall have no further obligation to make payments under this Agreement other than as specifically provided for in such section.

(f) Resignation from All Positions. Unless the parties otherwise agree in writing, upon the termination or resignation of Roberts' employment with Altimmune for any reason, Roberts shall be deemed to have resigned, as of the date of such termination or resignation, from and with respect to all positions Roberts then holds as an officer, director or employee with Altimmune and any of its affiliates.

7. Secrecy, Non-Solicitation and Non-Competition.

(a) Secrecy. During the Employment Period and thereafter, Roberts covenants and agrees that he will not, except in performance of Roberts' obligations to Altimmune, or with the prior written consent of Altimmune pursuant to the authority granted by a resolution of the Board, directly or indirectly, disclose any secret or confidential information that he may learn or has learned by reason of his association with Altimmune or use any such information. The term "secret or confidential information" includes, without limitation, information not previously disclosed to the public or to the trade by Altimmune's management with respect to Altimmune's products, facilities and methods, trade secrets and other intellectual property, systems, procedures, manuals, confidential reports, product price lists, customer lists, member lists, financial information (including the revenues, costs or profits associated with any Altimmune's products), business plans, prospects, employee or

employees, compensation, or opportunities but shall exclude any information already in the public domain which has been disclosed to the public during the normal course of Altimmune's business. Notwithstanding anything herein to the contrary, nothing in this Agreement shall be construed to prohibit Roberts from reporting possible violations of federal or state law or regulations to any governmental agency or entity, including but not limited to the Department of Justice, the Securities and Exchange Commission, the Congress, and any agency Inspector General, or making other disclosures that are protected under the whistleblower provisions of federal or state law or regulation. Roberts does not need the prior authorization of Altimmune to make any such reports or disclosures and Roberts is not required to notify Altimmune that he made such reports or disclosures.

(b) Non-solicitation of Clients and Customers. Roberts covenants and agrees that during the Employment Period and for a period of six (6) months thereafter, he will not solicit, either directly or indirectly, any customer or client of Altimmune on behalf of any direct competitor of Altimmune for the purpose of diverting business from Altimmune. This Agreement extends to prevent Roberts from soliciting on behalf of Roberts or any other individual or entity that seeks to compete with Altimmune.

(c) Non-solicitation of Employees. Roberts covenants and agrees that during the Employment Period and for a period of six (6) months thereafter, he shall not directly or indirectly, on his behalf or on behalf of any person or other entity, solicit or induce, or attempt to solicit or induce, any person who is an employee of Altimmune, to terminate his or her employment with Altimmune.

(d) Noncompetition. Roberts covenants and agrees that during the Employment Period and for a period of six (6) months thereafter, he will not directly or indirectly work for or engage in sales, marketing or related activities on behalf of himself or any other person or entity that is a direct competitor of Altimmune.

(e) Equitable Relief. Roberts acknowledges and agrees that the services performed by him are special, unique and extraordinary in that, by reason of Roberts' employment, Roberts may acquire confidential information and trade secrets concerning the operation of Altimmune, or that Roberts may have contact with or obtain knowledge of Altimmune's members or prospects, the use or disclosure of which could cause Altimmune substantial loss and damages, which could not be readily calculated and for which no remedy at law would be adequate. Accordingly, Roberts acknowledges and agrees that Altimmune shall be entitled to obtain a temporary restraining order and/or a preliminary or permanent injunction restraining Roberts from engaging in activities prohibited by this Section 7 or such other relief as may be required to specifically enforce any of the covenants in this Section 7. Roberts acknowledges and agrees that Altimmune shall be entitled to its attorneys' fees and court costs should Altimmune successfully pursue legal action to enforce its rights under this Section 7.

(f) Return of Property. Upon termination or resignation of Roberts' employment with Altimmune, Roberts shall promptly supply to Altimmune all property, keys, notes, memoranda, writings, lists, files, reports, customer lists, correspondence, tapes, disks, cards, surveys, maps, logs, machines, technical data and any other tangible product or document which has been produced by, received by or otherwise submitted to Roberts during or prior to his employment with Altimmune, and any copies thereof in Roberts' (or capable of being reduced to Roberts') possession.

(g) Survival. Any termination of Roberts' employment, of the Employment Period or of this Agreement (or breach of this Agreement by Altimmune or Roberts) shall have no effect on the continuing operation of this Section 7.

8. Governing Law. This Agreement is made and entered into in the State of Maryland, without regard to conflict of laws rules, and the laws of the State of Maryland shall govern its validity and interpretation in the performance by the parties of their respective duties and obligations.

9. Entire Agreement. This Agreement constitutes the entire agreement between the parties with respect to the matters described herein and supersedes all prior agreements and understandings both written and oral, among the parties with respect to the subject matter hereof (including, without limitation, the Offer Letter), and there are no representation, warranties or commitments, other than those in writing executed by the parties hereto.

10. Consent to Venue. Any dispute, controversy, or claim arising out of or relating to this Agreement or the breach thereof, arising out of or relating in any way to the employment of Roberts or termination thereof, shall be brought in the Federal courts located in the State of Maryland; provided, however, that if any of the aforementioned courts is found to lack subject matter jurisdiction, then to the exclusive jurisdiction of the state courts in the State of Maryland. By executing and delivering this Agreement, each party, for itself or himself and in connection with its or his properties, irrevocably (a) accepts generally and unconditionally the exclusive jurisdiction and venue of such courts; (b) waives any defense of forum non conveniens; (c) agrees that service of all process in any such proceeding in any such court may be made by registered or certified mail, return receipt requested, to the applicable party at its address provided herein; and (d) agrees that service as provided in clause (c) above is sufficient to confer personal jurisdiction over the applicable party in any such proceeding in any such court, and otherwise constitutes effective and binding service in every respect.

11. WAIVER OF JURY TRIAL. EACH PARTY HERETO IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT TO TRIAL BY JURY IN ANY DISPUTE, CONTROVERSY OR CLAIM, WHETHER SOUNDING IN CONTRACT, TORT OR OTHERWISE, AMONG THE PARTIES HERETO ARISING OUT OF OR RELATING IN ANY WAY TO THE EMPLOYMENT OF ROBERTS OR TERMINATION THEREOF OR FOR ANY COUNTERCLAIM THEREIN. THE PARTIES HERETO MAY FILE AN ORIGINAL COUNTERPART OR A COPY OF THIS AGREEMENT WITH ANY COURT OF COMPETENT JURISDICTION AS PROVIDED HEREIN AS WRITTEN EVIDENCE OF THE CONSENT OF THE PARTIES HERETO TO THE WAIVER OF THEIR RIGHT TO TRIAL BY JURY.

12. Assistance in Litigation. Roberts shall make himself available, upon the request of Altimmune, to testify or otherwise assist in litigation, arbitration, or other disputes involving Altimmune, or any of the directors, officers, executives, subsidiaries, or parent corporations of Altimmune, at no additional cost during the Employment Period and at any time following the

termination of Roberts' employment for any reason; provided, however, in the event such request is made by Altimmune after the Employment Period, Roberts shall be reimbursed for any reasonable out-of-pocket expenses incurred with respect thereto and shall also be paid a reasonable daily stipend based on his Base Salary at the time of termination.

13. Notices. Any notice or communication required or permitted to be given to the parties shall be delivered personally or sent by registered or certified mail, postage prepaid and return receipt requested, and addressed or delivered as follows, or to such other address as the party addressed may have substituted by notice pursuant to this Section.

(a) If to Altimmune, to:

Altimmune, Inc.
19 Firstfield Road, Suite 200
Gaithersburg, Maryland 20878
ATTN: Chief Executive Officer

(b) If to Roberts, to:

The last address on file with Altimmune at the time of Notice.

14. Binding Agreement. This Agreement shall inure to the benefit of and be enforceable by Roberts and his personal or legal representatives, executors, administrators, successors, heirs, distributees, devises and legatees. This Agreement shall inure to the benefit of and be enforceable by Altimmune and any of its successors and assigns. Altimmune will require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business and/or assets of Altimmune to assume expressly and agree to satisfy all of the obligations under this Agreement in the same manner and to the same extent that Altimmune would be required to satisfy such obligations if no such succession had taken place. As used in this Agreement, "Altimmune" shall mean "Altimmune" as hereinbefore defined and any successor to its respective businesses and/or assets as aforesaid which assumes and agrees to perform this Agreement by operation of law or otherwise.

15. Amendment. This Agreement may not be amended or modified otherwise than by a written agreement executed by Roberts and the Chairman of the Board or their respective successors and legal representatives.

16. Construction. This Agreement shall not be construed against any party by reason of the drafting or preparation hereof.

17. Captions. The captions of this Agreement are inserted for convenience and are not part of the Agreement.

18. Severability. In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal, or unenforceable in any other respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Agreement. This Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been part of the Agreement and there shall be deemed substituted therefore such other provision as will most nearly accomplish the intent of the parties to the extent permitted by the applicable law.

19. Survivorship. Upon the expiration or other termination of this Agreement or termination of Roberts' employment for any reason, the respective rights and obligations of the parties hereto shall survive such expiration or other termination to the extent necessary to carry out the intentions of the parties under this Agreement.

20. Withholding. Altimmune may withhold from any amounts payable under this Agreement such Federal, state, local or foreign taxes as shall be required to be withheld pursuant to any applicable law or regulation.

21. Section 409A.

(a) Although Altimmune does not guarantee the tax treatment of any payments or benefits provided under this Agreement, it is intended that this Agreement will comply with, or be exempt from, Code Section 409A to the extent this Agreement (or any benefit or payment provided hereunder) is subject thereto, and this Agreement shall be interpreted on a basis consistent with such intent.

(b) Notwithstanding any provision to the contrary in this Agreement, if Roberts is deemed on the date of his "separation from service" (within the meaning of Treas. Reg. Section 1.409A-1(h)) with Altimmune to be a "specified employee" (within the meaning of Treas. Reg. Section 1.409A-1(i)), then with regard to any payment or benefit that is considered non-qualified deferred compensation under Code Section 409A payable on account of a "separation from service" that is required to be delayed pursuant to Code Section 409A(a)(2)(B) of the Code (after taking into account any applicable exceptions to such requirement), such payment or benefit shall be made or provided on the date that is the earlier of (i) the date immediately following the expiration of the six-month period measured from the date of Roberts' "separation from service," and (ii) the date of Roberts' death (the "Delay Period"). Upon the expiration of the Delay Period, all payments and benefits delayed pursuant to this Section 21(b) (whether they would have otherwise been payable in a single sum or in installments in the absence of such delay) shall be paid or reimbursed to Roberts in a lump sum and any remaining payments and benefits due under this Agreement shall be paid or provided in accordance with the normal payment dates specified for them herein.

(c) Notwithstanding any provision of this Agreement to the contrary, for purposes of any provision of this Agreement providing for the payment of any amounts or benefits upon or following a termination of employment that are considered deferred compensation under Code Section 409A, references to Roberts' "termination of employment" (and corollary terms) with Altimmune shall be construed to refer to Roberts' "separation from service" (within the meaning of Treas. Reg. Section 1.409A-1(h)) with Altimmune.

(d) Whenever payments under this Agreement are to be made in installments, each such installment shall be deemed to be a separate payment for purposes of Code Section 409A. Whenever a payment under this Agreement specifies a payment period with reference to a number of days (e.g., "payment shall be made within thirty (30) days following the date of termination"), the actual date of payment within the specified period shall be within the sole discretion of Altimmune. Notwithstanding anything herein, Roberts shall be responsible for payment of any applicable personal tax liabilities associated with the receipt of income or benefits pursuant to this Agreement.

22. Section 280G.

(a) Notwithstanding anything contained in this Agreement to the contrary, (i) to the extent that any payment or distribution of any type to or for the benefit of Roberts by Altimmune, any affiliate thereof, any person or entity who acquires ownership or effective control of Altimmune or ownership of a substantial portion of Altimmune's assets (within the meaning of Section 280G of the Code and the regulations thereunder), or any affiliate of such person or entity, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Payments") constitutes "parachute payments" (within the meaning of Section 280G of the Code), and if (ii) such aggregate Payments would, if reduced by all federal, state and local taxes applicable thereto, including the excise tax imposed under Section 4999 of the Code (the "Excise Tax"), be less than the amount Roberts would receive, after all taxes, if Roberts received aggregate Payments equal (as valued under Section 280G of the Code) to only three times Roberts' "base amount" (within the meaning of Section 280G of the Code), less $1.00, then (iii) such Payments shall be reduced (but not below zero) if and to the extent necessary so that no Payments to be made or benefit to be provided to Roberts shall be subject to the Excise Tax; provided, however, that, solely to the extent applicable, Altimmune shall use its reasonable best efforts to obtain shareholder approval of the Payments provided for in this Agreement in a manner intended to satisfy requirements of the "shareholder approval" exception to Section 280G of the Code and the regulations promulgated thereunder, such that payment may be made to Roberts of such Payments without the application of an Excise Tax. If the Payments are so reduced, Altimmune shall reduce or eliminate the Payments (x) by first reducing or eliminating the portion of the Payments which are not payable in cash (other than that portion of the Payments subject to clause (z) hereof), (y) then by reducing or eliminating cash payments (other than that portion of the Payments subject to clause (z) hereof) and (z) then by reducing or eliminating the portion of the Payments (whether payable in cash or not payable in cash) to which Treasury Regulation § 1.280G-1 Q/A 24(c) (or successor thereto) applies, in each case in reverse order beginning with payments or benefits which are to be paid the farthest in time.

(b) The determination of whether the Payments shall be reduced as provided in Section 22(a) hereof and the amount of such reduction shall be made at Altimmune's expense by an independent public accounting firm of national reputation selected by Altimmune (the "Accounting Firm"). The Accounting Firm shall provide its determination (the "Determination"), together with detailed supporting calculations and documentation, to Altimmune and Roberts within ten (10) days after Roberts' final day of employment. If the Accounting Firm determines that no Excise Tax is payable by Roberts with respect to the Payments, it shall furnish Roberts with an opinion reasonably acceptable to him that no Excise Tax will be imposed with respect to any such payments and, absent manifest error, such Determination shall be binding, final and conclusive upon Altimmune and Roberts.

23. Counterparts. This Agreement may be executed simultaneously in two or more counterparts, each of which shall be deemed an original, but all of which shall together constitute one in the same Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first written above.

ALTIMMUNE, INC.:

By: /s/ William Enright
Chief Executive Officer

Date: 7 Dec 2015

M. SCOT ROBERTS:

/s/ M. Scot Roberts

Date: 07 Dec 2015

Exhibit A

A “Qualified IPO” shall mean an initial public offering of Altimmune’s common stock with gross proceed to Altimmune of at least $25 million from new investors at a valuation of at least $125 million.

EMPLOYMENT AGREEMENT

This **EMPLOYMENT AGREEMENT** ("Agreement") is made and entered into as of April 4, 2016 (the "Effective Date") by and between Sybil Tasker ("Tasker") and Altimmune, Inc., a Delaware corporation ("Altimmune").

WHEREAS, Tasker currently serves as the Senior Vice President of Clinical Research and Development of Altimmune pursuant to that certain Offer Letter, by and between Tasker and Altimmune, dated as of March 9, 2016 (the "Offer Letter");

WHEREAS, the Offer Letter expressly contemplates that Altimmune and Tasker will enter into this Agreement to govern the terms and conditions of Tasker's employment relationship with Altimmune;

WHEREAS, in connection with the execution of this Agreement, the Board of Directors of Altimmune (the "Board") or an authorized committee thereof and Tasker desire to terminate and supersede in its entirety the Offer Letter as of the Effective Date pursuant to the terms hereof to assure Altimmune of Tasker's continued employment in an executive capacity and to compensate her therefor; and

WHEREAS, Tasker acknowledges that, in executing this Agreement, she has had a reasonable opportunity to seek the advice of independent legal and tax counsel, and has read and understood all of the terms and provisions of this Agreement.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

1. Titles, Duties and Responsibilities.

(a) Title and Duties. During the Employment Period (as defined in Section 2 below), Tasker shall serve as Senior Vice President of Clinical Research and Development of Altimmune and shall have such duties, responsibilities and authority commensurate with such position, and such additional duties and responsibilities commensurate with such position as shall be determined from time to time by the Chief Executive Officer of Altimmune (the "CEO").

(b) Reporting Responsibilities. Tasker shall report directly to the CEO.

(c) Conflicts of Interest and Compliance with Laws. Except as specifically set forth in this Section 1(c), during the Employment Period, Tasker shall devote her entire time, attention, energies and business efforts to the affairs of Altimmune. Except as set forth below, during the Employment Period, Tasker shall not, without the prior written consent of the Board (x) engage, directly or indirectly, in any other business activity that materially interferes with her duties as set forth in this Agreement and/or that creates a conflict of interest, (y) act as a proprietor, partner, director, officer, executive, consultant, advisor, agent, representative or any other capacity of any entity other than Altimmune and its divisions, subsidiaries and other affiliated entities, regardless of whether such activity is for gain, profit or

other pecuniary advantage, or (z) allow or cause Altimmune to participate in any transaction with Tasker, any of her relatives (other than as employees of Altimmune), or any entity in which Tasker or any of her relatives has an interest. Tasker further agrees that she shall not knowingly take any action, or authorize the taking of any action, that contravenes any applicable federal, state, municipal or other political subdivision ordinance, statute or rule, regulation or order of any jurisdiction. Tasker agrees to immediately disclose to the Board any relationship, action or activity that may potentially be subject to the provisions of this Section 1(c).

2. Employment Term. Unless sooner terminated as provided elsewhere in this Agreement, Tasker's employment with Altimmune under this Agreement shall begin on the Effective Date and end at 11:59 p.m. Eastern Time on December 31, 2017 (the "Initial Employment Period"). Commencing on January 1, 2018 and each January 1 thereafter (the "Extension Date"), this Agreement shall automatically renew on the terms and conditions as then in effect for additional successive periods of one (1) year unless terminated by either party upon written notice to the other party not less than ninety (90) days prior to the Extension Date. The Initial Employment Period and any extension or renewal thereof shall be referred to herein together as the "Employment Period." Notwithstanding anything to the contrary contained herein, the Employment Period is subject to termination pursuant to Section 6 hereof.

3. Salary, Bonus and Other Compensation. During Tasker's employment, Altimmune shall provide the following salary, bonus and other compensation to Tasker:

(a) Base Compensation. Altimmune shall pay Tasker an initial annual base salary of Two Hundred Ninety Thousand Dollars ($290,000) per annum (such salary, as applicable, "Base Salary"), payable in substantially equal installments in accordance with Altimmune's normal payroll practices. Tasker's compensation shall be evaluated and adjusted by the Compensation Committee of the Board (the "Committee") on at least an annual basis, provided that in no event shall Tasker's Base Salary be reduced while this Agreement is in effect.

(b) Annual Bonus. In addition to the Base Salary, during each year of the Employment Period, Tasker will be eligible for an annual cash bonus ("Annual Bonus") with a target award equal to thirty percent (30%) of the Base Salary. The Annual Bonus will be subject to all of the terms and conditions of the applicable bonus plan. The actual Annual Bonus payouts will be based on achievement of the individual and/or company performance criteria established for the applicable fiscal year by the Committee in its sole and absolute discretion. Tasker must be actively employed on December 31st of the applicable fiscal year to be eligible for an Annual Bonus payment. The Annual Bonus shall be paid no later than the March 15th of the fiscal year immediately following the fiscal year in which such Annual Bonus was earned.

(c) Equity Awards. Tasker will be entitled to participate in the Altimmune 2016 Omnibus Incentive Plan or such other equity based long-term incentive compensation plan, program or arrangement generally made available to senior executive officers of Altimmune from time to time, as determined by the Committee in its sole and absolute discretion.

4. Benefits. During the Employment Period, Tasker shall be eligible for participation in and shall receive all benefits under welfare benefit, savings and retirement plans provided by Altimmune (including, but not limited to, life insurance, disability insurance, medical insurance, dental insurance) to the extent applicable generally to senior executives of Altimmune, and consistent with the following specific agreements:

(a) Vacation. Tasker will be entitled to fifteen (15) days of paid vacation and six (6) days of personal and sick leave each year during the Employment Period. Tasker is permitted to carry over a maximum of twelve (12) days of personal and sick leave per year and five (5) days of vacation leave per year, subject to applicable law.

(b) Health, Life, Vision and Disability Insurance. Tasker will be entitled to participate in all health, vision and dental insurance programs provided by Altimmune to the extent applicable generally to senior executives of Altimmune.

(c) Relocation. Altimmune shall reimburse Tasker for up to $12,000 in out of pocket expenses incurred with her relocation to the greater Washington, D.C. area. Reimbursement is conditioned on compliance with Altimmune's policies and procedures, including as set forth in Section 5 below. In the event that Tasker's employment with Altimmune shall terminate prior to the first anniversary of the Effective Date, then Tasker shall promptly reimburse Altimmune for all amounts previously paid to Tasker pursuant to this Section 4(c).

5. Reimbursement of Business Expenses. Altimmune shall reimburse Tasker for all reasonable and customary out-of-pocket business expenses incurred by Tasker in the course of her duties (to include monthly expenses to maintain cellular telephone service), in accordance with Altimmune's policies as in effect from time to time. Tasker shall be required to submit to Altimmune appropriate documentation supporting such out-of-pocket business expenses as a prerequisite to reimbursement in accordance with such policies. Notwithstanding anything herein to the contrary or otherwise, except to the extent any expense or reimbursement described in this Agreement does not constitute a "deferral of compensation" within the meaning of Section 409A of the Code and the Treasury regulations and other guidance issued thereunder, any expense or reimbursement described in this Agreement shall meet the following requirements: (i) the amount of expenses eligible for reimbursement provided to Tasker during any calendar year will not affect the amount of expenses eligible for reimbursement to Tasker in any other calendar year; (ii) the reimbursements for expenses for which Tasker is entitled to be reimbursed shall be made on or before the last day of the calendar year following the calendar year in which the applicable expense is incurred; (iii) the right to payment or reimbursement or in-kind benefits hereunder may not be liquidated or exchanged for any other benefit; and (iv) the reimbursements shall be made pursuant to objectively determinable and nondiscretionary company policies and procedures regarding such reimbursement of expenses.

6. Termination Provisions.

(a) Termination by Altimmune for Cause or Termination by Tasker without Good Reason. Altimmune may terminate Tasker's employment immediately for Cause (as defined below) and Tasker may terminate her employment at any time without Good Reason

upon providing Altimmune at least thirty (30) days advance written notice. Upon such termination, Altimmune shall provide Tasker with the following: (i) payment of any accrued Base Salary through and including the date of Tasker's termination to the extent not theretofore paid; (ii) any accrued and unused vacation pay through and including the date of Tasker's termination; (iii) any unreimbursed business expenses in accordance with Section 5 hereof, and (iv) such accrued and vested rights or benefits as may be due to Tasker under any Altimmune sponsored employee benefits plans payable in accordance with the terms and conditions of such plans (the payments and benefits referred to in subclauses (i) through (iv) above shall be collectively referred to as the "Accrued Obligations"). Except as provided in this Section 6(a), termination pursuant to this Section 6(a) shall terminate any other rights Tasker may have under this Agreement and shall relieve Altimmune of any other obligations it may have under this Agreement.

For purposes of this Agreement, termination for Cause shall mean the termination of Tasker's employment by Altimmune due to: (i) a material breach by Tasker of her fiduciary duties to Altimmune; (ii) a material breach by Tasker of this Agreement after being given written notice of such breach and a failure to cure within thirty (30) days of such notice; (iii) Tasker's willful failure or refusal to follow Altimmune's written policies after being given written notice of said failure or refusal and a failure to cure within thirty (30) days of such notice; (iv) Tasker's conviction of, or plea of guilty or *nolo contendere,* to a felony; and/or (v) Tasker's continuing and willful refusal to act as directed by the Board or CEO (other than refusal resulting from incapacity due to physical or mental illness), after written notice is delivered to Tasker within sixty (60) days of such refusal which identifies said refusal and sets forth a plan of corrective action and a failure to cure within thirty (30) days of such notice.

(b) Termination by Altimmune without Cause or Resignation by Tasker for Good Reason. Altimmune may terminate Tasker's employment without Cause at any time upon prior written notice to Tasker and Tasker may terminate her employment for Good Reason (as defined below). Upon such termination, subject to Tasker's continued compliance with the restrictive covenants set forth in Section 7, Altimmune shall provide Tasker with the following:

(i) continued payment of the Cash Severance Amount (as defined below) in equal monthly installments during the applicable severance period (as determined below) following the effective date of such termination and otherwise payable in accordance with Altimmune's normal payroll practices. As used herein, the "Cash Severance Amount" shall be equal to six (6) months of Tasker's Base Salary existing at the time of such termination payable over the six (6) month period following such termination, except that if such termination occurs within the one (1) year period commencing on the occurrence of a Change in Control (as defined below), the Cash Severance Amount shall instead be equal to the sum of twelve (12) months of Tasker's Base Salary (existing at the time of such termination) plus Tasker's target Annual Bonus for the year of termination, payable over the twelve (12) month period following such termination;

(ii) subject to Tasker's timely election, and the availability, of continuation coverage under Part 6 of Title I of the Employment Retirement Income Security Act of 1974 (as amended) and Section 4980B of the Code ("COBRA"), Altimmune will pay monthly, on Tasker's behalf, a portion of the cost of such coverage for the six (6) months after

the date of such termination, which payments will be equal to the amount of the monthly premium for such coverage, less the amount that Tasker would have been required to pay if Tasker had remained an active employee of Altimmune (the "COBRA Assistance"); provided, however, if at any time Altimmune determines that the COBRA Assistance would result in a violation of the non-discrimination rules under Section 105(h)(2) of the Internal Revenue Code of 1986, as amended (the "Code") or any other applicable laws, statute or regulation of similar effect (including, but not limited to, the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of providing the COBRA Assistance, Altimmune will instead pay Tasker fully taxable cash payments equal to, and paid at the same time as, the COBRA Assistance would have otherwise been paid, subject to applicable tax withholdings;

(iii) any unpaid prior year's Annual Bonus, payable by Altimmune to Tasker at the same time annual bonuses in respect of the prior year are generally paid to senior executives of Altimmune;

(iv) the Accrued Obligations; and

(v) if such termination occurs within the one (1) year period commencing on the occurrence of a Change in Control, accelerated vesting of all unvested equity awards then outstanding and held by Tasker (for the avoidance of doubt, if such termination does not occur during such one (1) year period, then any accelerated vesting of unvested equity awards shall be at the discretion of the Committee).

For purposes of this Agreement, resignation for Good Reason shall mean the resignation by Tasker of her employment due to: (a) a reduction in Tasker's Base Salary or target Annual Bonus opportunity; (b) a material diminution in Tasker's authority, duties or responsibilities; or (c) a relocation by Altimmune of Tasker's principal place of business for the performance of her duties under this Agreement to a location that is anywhere outside of a 50-mile radius of Gaithersburg, Maryland; provided, however, that Tasker must notify Altimmune within ninety (90) days of the occurrence of any of the foregoing conditions that she considers to be a "Good Reason" condition and provide Altimmune with thirty (30) days in which to cure the condition. If Tasker fails to provide this notice and cure period prior to her resignation, or resigns more than six (6) months after the initial existence of the condition, her resignation will not be deemed to be for "Good Reason."

For purposes of this Agreement, "Change in Control" means the occurrence of either (i) an acquisition from stockholders of Altimmune (including through purchase, reorganization, merger, consolidation or similar transaction), directly or indirectly, in one or more transactions by a Person (other than any Person or group of Persons consisting solely of shareholders of Altimmune as of the date immediately prior to the consummation of the transaction) of beneficial ownership (within the meaning of Rule 13d-3 under the Exchange Act) of securities representing 50% or more of the combined voting power of the securities of Altimmune entitled to vote generally in the election of directors of the Board, calculated on a fully diluted basis after giving effect to such acquisition, or (ii) the sale or other disposition, directly or indirectly, of all or substantially all of the assets of Altimmune and its subsidiaries, taken as a whole, to any Person (other than any Person or group of Persons consisting solely of shareholders of Altimmune as of the date immediately prior to the consummation of the transaction). For the

avoidance of doubt, a transaction effected primarily for the purpose of (x) an equity financing of Altimmune, (y) the reincorporation of Altimmune in a different state, or (z) the formation of a holding company that will be owned exclusively by Altimmune's stockholders, shall not be a Change in Control for purposes of this Agreement. A "Person" means any individual, entity or group within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder, other than employee benefit plans sponsored or maintained by Altimmune and by entities controlled by Altimmune or an underwriter of the capital stock of Altimmune in a registered public offering.

(c) Death or Disability. Tasker's employment shall terminate automatically upon Tasker's death. Subject to applicable law, Altimmune may terminate Tasker's employment due to Tasker's Disability (as defined below). Upon any such termination, Altimmune shall provide Tasker (or her estate as the case may be) with the Accrued Obligations through the date of termination. The term "Disability" shall mean Tasker becoming physically or mentally disabled such that she is unable to perform her duties to Altimmune for a period of 90 consecutive days.

(d) Expiration of Employment Term. In the event notice of termination is provided by Tasker in accordance with Section 2, Tasker's employment shall terminate upon the expiration of the Employment Period. Upon such termination, Altimmune shall provide Tasker with the Accrued Obligations through the date of termination and her Annual Bonus.

(e) Limits. Notwithstanding anything herein to the contrary, Altimmune's obligation to make any payments or benefits to Tasker upon termination of her employment under the circumstances described in Section 6(b) (other than the Accrued Obligations) and 6(d) (other than the Accrued Obligations) is conditioned upon Tasker's execution, delivery and non-revocation of a valid and enforceable release of claims arising in connection with Tasker's employment and termination or resignation of employment with Altimmune and its affiliates (the "Release") that becomes effective not later than sixty (60) days after the date of such termination or resignation of employment. Altimmune shall provide the form of the Release to Tasker within seven (7) days following the date of Tasker's termination or resignation of employment. Subject to the foregoing and Section 21 hereof, the Cash Severance Amount will commence to be paid to Tasker on the sixtieth (60th) day following Tasker's termination or resignation of employment, and such first payment shall include payment of any amounts that would otherwise be due prior thereto. On any termination entitling Tasker to the payments and benefits under Section 6(b) or 6(d), Altimmune and its affiliates shall have no further obligation to make payments under this Agreement other than as specifically provided for in such section.

(f) Resignation from All Positions. Unless the parties otherwise agree in writing, upon the termination or resignation of Tasker's employment with Altimmune for any reason, Tasker shall be deemed to have resigned, as of the date of such termination or resignation, from and with respect to all positions Tasker then holds as an officer, director or employee with Altimmune and any of its affiliates.

7. Secrecy, Non-Solicitation and Non-Competition.

(a) Secrecy. During the Employment Period and thereafter, Tasker covenants and agrees that she will not, except in performance of Tasker's obligations to Altimmune, or with the prior written consent of Altimmune pursuant to the authority granted by a resolution of the Board, directly or indirectly, disclose any secret or confidential information that she may learn or has learned by reason of her association with Altimmune or use any such information. The term "secret or confidential information" includes, without limitation, information not previously disclosed to the public or to the trade by Altimmune's management with respect to Altimmune's products, facilities and methods, trade secrets and other intellectual property, systems, procedures, manuals, confidential reports, product price lists, customer lists, member lists, financial information (including the revenues, costs or profits associated with any Altimmune's products), business plans, prospects, employee or employees, compensation, or opportunities but shall exclude any information already in the public domain which has been disclosed to the public during the normal course of Altimmune's business. Notwithstanding anything herein to the contrary, nothing in this Agreement shall be construed to prohibit Tasker from reporting possible violations of federal or state law or regulations to any governmental agency or entity, including but not limited to the Department of Justice, the Securities and Exchange Commission, the Congress, and any agency Inspector General, or making other disclosures that are protected under the whistleblower provisions of federal or state law or regulation. Tasker does not need the prior authorization of Altimmune to make any such reports or disclosures and Tasker is not required to notify Altimmune that she made such reports or disclosures.

(b) Non-solicitation of Clients and Customers. Tasker covenants and agrees that during the Employment Period and for a period of six (6) months thereafter, she will not solicit, either directly or indirectly, any customer or client of Altimmune on behalf of any direct competitor of Altimmune for the purpose of diverting business from Altimmune. This Agreement extends to prevent Tasker from soliciting on behalf of Tasker or any other individual or entity that seeks to compete with Altimmune.

(c) Non-solicitation of Employees. Tasker covenants and agrees that during the Employment Period and for a period of six (6) months thereafter, she shall not directly or indirectly, on her behalf or on behalf of any person or other entity, solicit or induce, or attempt to solicit or induce, any person who is an employee of Altimmune, to terminate her or her employment with Altimmune.

(d) Noncompetition. Tasker covenants and agrees that during the Employment Period and for a period of six (6) months thereafter, she will not directly or indirectly work for or engage in sales, marketing or related activities on behalf of himself or any other person or entity that is a direct competitor of Altimmune.

(e) Equitable Relief. Tasker acknowledges and agrees that the services performed by him are special, unique and extraordinary in that, by reason of Tasker's employment, Tasker may acquire confidential information and trade secrets concerning the operation of Altimmune, or that Tasker may have contact with or obtain knowledge of Altimmune's members or prospects, the use or disclosure of which could cause Altimmune substantial loss and damages, which could not be readily calculated and for which no remedy at law would be adequate. Accordingly, Tasker acknowledges and agrees that Altimmune shall be entitled to obtain a temporary restraining order and/or a preliminary or permanent injunction restraining Tasker from engaging in activities prohibited by this Section 7 or such other relief as may be required to specifically enforce any of the covenants in this Section 7. Tasker acknowledges and agrees that Altimmune shall be entitled to its attorneys' fees and court costs should Altimmune successfully pursue legal action to enforce its rights under this Section 7.

(f) Return of Property. Upon termination or resignation of Tasker's employment with Altimmune, Tasker shall promptly supply to Altimmune all property, keys, notes, memoranda, writings, lists, files, reports, customer lists, correspondence, tapes, disks, cards, surveys, maps, logs, machines, technical data and any other tangible product or document which has been produced by, received by or otherwise submitted to Tasker during or prior to her employment with Altimmune, and any copies thereof in Tasker's (or capable of being reduced to Tasker's) possession.

(g) Survival. Any termination of Tasker's employment, of the Employment Period or of this Agreement (or breach of this Agreement by Altimmune or Tasker) shall have no effect on the continuing operation of this Section 7.

8. Governing Law. This Agreement is made and entered into in the State of Maryland, without regard to conflict of laws rules, and the laws of the State of Maryland shall govern its validity and interpretation in the performance by the parties of their respective duties and obligations.

9. Entire Agreement. This Agreement constitutes the entire agreement between the parties with respect to the matters described herein and supersedes all prior agreements and understandings both written and oral, among the parties with respect to the subject matter hereof (including, without limitation, the Offer Letter), and there are no representation, warranties or commitments, other than those in writing executed by the parties hereto.

10. Consent to Venue. Any dispute, controversy, or claim arising out of or relating to this Agreement or the breach thereof, arising out of or relating in any way to the employment of Tasker or termination thereof, shall be brought in the Federal courts located in the State of Maryland; provided, however, that if any of the aforementioned courts is found to lack subject matter jurisdiction, then to the exclusive jurisdiction of the state courts in the State of Maryland. By executing and delivering this Agreement, each party, for itself or himself and in connection with its or her properties, irrevocably (a) accepts generally and unconditionally the exclusive jurisdiction and venue of such courts; (b) waives any defense of forum non conveniens; (c) agrees that service of all process in any such proceeding in any such court may be made by registered or certified mail, return receipt requested, to the applicable party at its address provided herein; and (d) agrees that service as provided in clause (c) above is sufficient to confer personal jurisdiction over the applicable party in any such proceeding in any such court, and otherwise constitutes effective and binding service in every respect.

11. WAIVER OF JURY TRIAL. EACH PARTY HERETO IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT TO TRIAL BY JURY IN ANY DISPUTE, CONTROVERSY OR CLAIM, WHETHER SOUNDING IN CONTRACT, TORT OR OTHERWISE, AMONG THE PARTIES HERETO ARISING OUT OF OR RELATING IN ANY WAY TO THE EMPLOYMENT OF TASKER OR TERMINATION THEREOF OR FOR ANY COUNTERCLAIM THEREIN. THE PARTIES HERETO MAY FILE AN ORIGINAL COUNTERPART OR A COPY OF THIS AGREEMENT WITH ANY COURT OF COMPETENT JURISDICTION AS PROVIDED HEREIN AS WRITTEN EVIDENCE OF THE CONSENT OF THE PARTIES HERETO TO THE WAIVER OF THEIR RIGHT TO TRIAL BY JURY.

12. Assistance in Litigation. Tasker shall make himself available, upon the request of Altimmune, to testify or otherwise assist in litigation, arbitration, or other disputes involving Altimmune, or any of the directors, officers, executives, subsidiaries, or parent corporations of Altimmune, at no additional cost during the Employment Period and at any time following the termination of Tasker's employment for any reason; provided, however, in the event such request is made by Altimmune after the Employment Period, Tasker shall be reimbursed for any reasonable out-of-pocket expenses incurred with respect thereto and shall also be paid a reasonable daily stipend based on her Base Salary at the time of termination.

13. Notices. Any notice or communication required or permitted to be given to the parties shall be delivered personally or sent by registered or certified mail, postage prepaid and return receipt requested, and addressed or delivered as follows, or to such other address as the party addressed may have substituted by notice pursuant to this Section.

(a) If to Altimmune, to:

Altimmune, Inc.
19 Firstfield Road, Suite 200
Gaithersburg, Maryland 20878
ATTN: Chief Executive Officer

(b) If to Tasker, to:

The last address on file with Altimmune at the time of Notice.

14. Binding Agreement. This Agreement shall inure to the benefit of and be enforceable by Tasker and her personal or legal representatives, executors, administrators, successors, heirs, distributees, devises and legatees. This Agreement shall inure to the benefit of and be enforceable by Altimmune and any of its successors and assigns. Altimmune will require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business and/or assets of Altimmune to assume expressly and agree to satisfy all of the obligations under this Agreement in the same manner and to the same extent that Altimmune would be required to satisfy such obligations if no such succession had taken place. As used in this Agreement, "Altimmune" shall mean "Altimmune" as hereinbefore defined and any successor to its respective businesses and/or assets as aforesaid which assumes and agrees to perform this Agreement by operation of law or otherwise.

15. Amendment. This Agreement may not be amended or modified otherwise than by a written agreement executed by Tasker and the Chairman of the Board or their respective successors and legal representatives.

16. Construction. This Agreement shall not be construed against any party by reason of the drafting or preparation hereof.

17. Captions. The captions of this Agreement are inserted for convenience and are not part of the Agreement.

18. Severability. In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal, or unenforceable in any other respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Agreement. This Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been part of the Agreement and there shall be deemed substituted therefore such other provision as will most nearly accomplish the intent of the parties to the extent permitted by the applicable law.

19. Survivorship. Upon the expiration or other termination of this Agreement or termination of Tasker's employment for any reason, the respective rights and obligations of the parties hereto shall survive such expiration or other termination to the extent necessary to carry out the intentions of the parties under this Agreement.

20. Withholding. Altimmune may withhold from any amounts payable under this Agreement such Federal, state, local or foreign taxes as shall be required to be withheld pursuant to any applicable law or regulation.

21. Section 409A.

(a) Although Altimmune does not guarantee the tax treatment of any payments or benefits provided under this Agreement, it is intended that this Agreement will comply with, or be exempt from, Code Section 409A to the extent this Agreement (or any benefit or payment provided hereunder) is subject thereto, and this Agreement shall be interpreted on a basis consistent with such intent.

(b) Notwithstanding any provision to the contrary in this Agreement, if Tasker is deemed on the date of her "separation from service" (within the meaning of Treas. Reg. Section 1.409A-1(h)) with Altimmune to be a "specified employee" (within the meaning of Treas. Reg. Section 1.409A-1(i)), then with regard to any payment or benefit that is considered non-qualified deferred compensation under Code Section 409A payable on account of a "separation from service" that is required to be delayed pursuant to Code Section 409A(a)(2)(B) of the Code (after taking into account any applicable exceptions to such requirement), such payment or benefit shall be made or provided on the date that is the earlier of (i) the date immediately following the expiration of the six-month period measured from the date of Tasker's "separation from service," and (ii) the date of Tasker's death (the "Delay Period"). Upon the expiration of the Delay Period, all payments and benefits delayed pursuant to this Section 21(b) (whether they would have otherwise been payable in a single sum or in installments in the absence of such delay) shall be paid or reimbursed to Tasker in a lump sum and any remaining payments and benefits due under this Agreement shall be paid or provided in accordance with the normal payment dates specified for them herein.

(c) Notwithstanding any provision of this Agreement to the contrary, for purposes of any provision of this Agreement providing for the payment of any amounts or benefits upon or following a termination of employment that are considered deferred compensation under Code Section 409A, references to Tasker's "termination of employment" (and corollary terms) with Altimmune shall be construed to refer to Tasker's "separation from service" (within the meaning of Treas. Reg. Section 1.409A-1(h)) with Altimmune.

(d) Whenever payments under this Agreement are to be made in installments, each such installment shall be deemed to be a separate payment for purposes of Code Section 409A. Whenever a payment under this Agreement specifies a payment period with reference to a number of days (e.g., "payment shall be made within thirty (30) days following the date of termination"), the actual date of payment within the specified period shall be within the sole discretion of Altimmune. Notwithstanding anything herein, Tasker shall be responsible for payment of any applicable personal tax liabilities associated with the receipt of income or benefits pursuant to this Agreement.

22. Section 280G.

(a) Notwithstanding anything contained in this Agreement to the contrary, (i) to the extent that any payment or distribution of any type to or for the benefit of Tasker by Altimmune, any affiliate thereof, any person or entity who acquires ownership or effective control of Altimmune or ownership of a substantial portion of Altimmune's assets (within the meaning of Section 280G of the Code and the regulations thereunder), or any affiliate of such person or entity, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Payments") constitutes "parachute payments" (within the meaning of Section 280G of the Code), and if (ii) such aggregate Payments would, if reduced by all federal, state and local taxes applicable thereto, including the excise tax imposed under Section 4999 of the Code (the "Excise Tax"), be less than the amount Tasker would receive, after all taxes, if Tasker received aggregate Payments equal (as valued under Section 280G of the Code) to only three times Tasker's "base amount" (within the meaning of Section 280G of the Code), less $1.00, then (iii) such Payments shall be reduced (but not below zero) if and to the extent necessary so that no Payments to be made or benefit to be provided to Tasker shall be subject to the Excise Tax; provided, however, that, solely to the extent applicable, Altimmune shall use its reasonable best efforts to obtain shareholder approval of the Payments provided for in this Agreement in a manner intended to satisfy requirements of the "shareholder approval" exception to Section 280G of the Code and the regulations promulgated thereunder, such that payment may be made to Tasker of such Payments without the application of an Excise Tax. If the Payments are so reduced, Altimmune shall reduce or eliminate the Payments (x) by first reducing or eliminating the portion of the Payments which are not payable in cash (other than that portion of the Payments subject to clause (z) hereof), (y) then by reducing or eliminating cash payments (other than that portion of the Payments subject to clause (z) hereof) and (z) then by reducing or eliminating the portion of the Payments (whether payable in cash or not payable in cash) to which Treasury Regulation § 1.280G-1 Q/A 24(c) (or successor thereto) applies, in each case in reverse order beginning with payments or benefits which are to be paid the farthest in time.

(b) The determination of whether the Payments shall be reduced as provided in Section 22(a) hereof and the amount of such reduction shall be made at Altimmune's expense by an independent public accounting firm of national reputation selected by Altimmune (the "Accounting Firm"). The Accounting Firm shall provide its determination (the "Determination"), together with detailed supporting calculations and documentation, to Altimmune and Tasker within ten (10) days after Tasker's final day of employment. If the

Accounting Firm determines that no Excise Tax is payable by Tasker with respect to the Payments, it shall furnish Tasker with an opinion reasonably acceptable to him that no Excise Tax will be imposed with respect to any such payments and, absent manifest error, such Determination shall be binding, final and conclusive upon Altimmune and Tasker.

23. Counterparts. This Agreement may be executed simultaneously in two or more counterparts, each of which shall be deemed an original, but all of which shall together constitute one in the same Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first written above.

ALTIMMUNE, INC.:

By: _____

Chief Executive Officer

Date: _____

SYBIL TASKER:

_____

Date: _____

Exhibit 10.19

Execution Version

CONVERTIBLE PROMISSORY NOTE PURCHASE AGREEMENT

This CONVERTIBLE PROMISSORY NOTE PURCHASE AGREEMENT (this "**Agreement**"), dated as of January 18, 2017, by and among Altimmune, Inc., a Delaware corporation (the "**Company**"), the purchasers listed on the Schedule of Purchasers attached as Exhibit A-1 hereto on the date hereof (each a "**Purchaser**" and together the "**Purchasers**"). The Parties hereby agree as follows:

1. Purchase and Sale of Securities.

1.1 Sale and Issuance of Convertible Notes and Warrants.

(a) The Company shall (x) adopt and file with the Secretary of State of the State of Delaware on or before the Closing (as defined below) the Amended and Restated Certificate of Incorporation in the form of Exhibit B attached hereto (the "**Restated Certificate**").

(b) Subject to the terms and conditions of this Agreement, each Purchaser agrees, severally and not jointly, to purchase at the Initial Closing and the Company agrees to sell and issue to each Purchaser at the Initial Closing, (i) a convertible promissory note (each an "**Initial Closing Note**" and collectively, the "**Initial Closing Notes**") in the principal amount set forth opposite each Purchaser's name under the heading "Initial Closing Notes" on Exhibit A-1 hereto for a purchase price equal to the face amount thereof; and (ii) if applicable, a warrant to purchase up to the number of shares, as adjusted therein, of Class A common stock, par value $0.01 per share, of the Company (the "**Class A Common Stock**") set forth opposite such Purchaser's name on Exhibit A-1 hereto (each, a "**Warrant**" and collectively, the "**Warrants**"). Each Warrant shall be in the form of Exhibit C attached hereto.

(c) Subject to the terms and conditions of this Agreement, each Purchaser agrees, severally and not jointly, to purchase at the Second Closing, as applicable, (i) the number of shares of common stock, par value $0.0001 per share, of Pubco contemplated by Section 1.4 (the "**Pubco Shares**") or (ii) a convertible promissory note (each a "**Second Closing Note**" and collectively, the "**Second Closing Notes**") in the principal amount set forth opposite each Purchaser's name under the heading "Remaining Commitment" on Exhibit A-1 hereto for a purchase price equal to the face amount thereof.

(d) The Initial Closing Notes and the Second Closing Notes are hereinafter collectively referred to as the "**Notes**", and each Note shall be in the form of Exhibit F attached hereto. The Initial Closing Notes and Warrants sold to the Purchasers pursuant to this Agreement are hereinafter collectively referred to as the "**Initial Closing Securities**." The Pubco Shares or Second Closing Notes sold to the Purchasers pursuant to this Agreement are hereinafter collectively referred to as the "**Second Closing Securities**." The Initial Closing Securities and the Second Closing Securities are hereinafter collectively referred to as the "**Purchased Securities**". The Initial Closing Securities and the Second Closing Notes are hereinafter collectively referred to as the "**Company Purchased Securities**". The shares of Common Stock and any other security of the Company, directly or indirectly issued or issuable upon exercise of the Warrants are hereinafter collectively referred to as the "**Warrant Shares**." The shares of capital stock of the Company (including, without limitation, Common Stock) directly or indirectly issued or issuable upon conversion of the Notes is hereinafter referred to as the "**Conversion Stock**" and, together with the Warrant Shares, is hereinafter referred to as the "**Conversion Securities**." The Purchased Securities and the Conversion Securities are hereinafter collectively referred to as the "**Securities**."

(e) The sale of the Company Purchased Securities to each Purchaser under this Agreement shall constitute a separate sale, and the obligations of each Purchaser under this Agreement shall be separate from and independent of the obligations of each other Purchaser under this Agreement.

1.2 Allocation to Warrant; Not Issued as Compensation.

(a) The Company and each of the Purchasers severally agree, as between the Company and each Purchaser, that the fair market value of the right to buy one share of Class A Common Stock under the terms as set forth in the Warrant is equal to $0.0001. The aggregate purchase price for the Warrants to be purchased by each Purchaser, if any, is set forth opposite each such Purchaser's name on Schedule 1 attached hereto.

(b) The Company and each Purchaser, having adverse interests and as a result of arm's length bargaining, agree that (i) neither the Purchasers nor any of their respective affiliates or associates have rendered or agreed to render any services to the Company in connection with this Agreement or the issuance of the Warrants and (ii) the Warrants are not being issued to any Purchaser as compensation for services.

1.3 Initial Closing.

(a) The purchase and sale of the Initial Closing Securities shall take place at the offices of Proskauer Rose LLP, 1 International Place, Boston, MA 02110 by electronic exchange of documents and signatures on the earlier to occur of (i) the closing date of the merger contemplated by the Merger Agreement, and (ii) February 28, 2017 (which time and place are designated as the "**Initial Closing**"), unless a different date is otherwise agreed to by the Company and each Purchaser who is obligated to purchase a Note at the Initial Closing in a principal amount of at least $1,000,000. The Initial Closing shall be deemed to have occurred at 10 a.m. local time on such date (the "**Initial Closing Date**").

(b) At the Initial Closing, the Company shall deliver to each Purchaser (i) a Note representing the principal face amount set forth opposite such Purchaser's name under the heading "Initial Closing Notes" on Exhibit A-1 hereto and (ii) if applicable, a Warrant to initially purchase the number of Warrant Shares set forth opposite such Purchaser's name on Exhibit A-1 hereto, against payment of the purchase price therefor by (w) check payable to the Company, (x) wire transfer to the bank account designated by the Company, (y) cancellation or conversion of the indebtedness of the Company to Purchaser (or one or more of its Affiliates) specified on Exhibit A-1 hereto, or (z) any combination of such methods. Notwithstanding anything to the contrary herein, in the event the Initial Closing shall occur in connection with the closing under the Merger Agreement, then the Company shall not be required to physically deliver any Note or Warrant hereunder and, in lieu thereof, each Purchaser shall have the right to receive the applicable number of shares of common stock and warrants of Pubco pursuant to the terms of the Merger Agreement.

(c) Prior to the Initial Closing, the Company may agree to sell, on the same terms and conditions as those contained in this Agreement, additional Initial Closing Notes to one or more purchasers (the "**Additional Purchasers**"), provided that (i) such sale is consummated at the Initial Closing and (ii) each Additional Purchaser shall become a party to the Transaction Agreements by executing and delivering a counterpart signature page to each of the Transaction Agreements. Exhibit A-1 to this Agreement shall be updated to reflect the number of additional Initial Closing Notes to be purchased at the Initial Closing and the parties purchasing such additional Initial Closing Notes.

1.4 Second Closing.

(a) Subject to the terms of this Agreement, the closing of the purchase and sale of the Second Closing Securities (the "**Second Closing**") shall take place remotely via the exchange of documents and signatures at such place, orally or in writing, (i) in the event the Company shall consummate the transactions contemplated by the Merger Agreement (including without limitation the closing of the Mergers), upon the earlier of (x) the date of the closing of the first public offering (the "**Follow-On Offering**") of Pubco following the closing of the Mergers, and (y) the one hundred and thirty-fifth (135th) day following the Merger Closing Date (or, if such one hundred and thirty-fifth (135th) day is not a business day, then on the first business day following such one hundred and thirty-fifth (135th) day); or (ii) in the event of the termination of the Merger Agreement, on the tenth (10th) business day following the date of such termination.

(b) At the Second Closing, the Company or Pubco, as applicable, will sell and issue to each of the Purchasers, and each of the Purchasers will purchase:

(i) in the event the Second Closing occurs pursuant to Section 1.4(a)(i)(x) above, each Purchaser hereby commits to purchase, as a participant in a concurrent private placement and pursuant to the same terms and at the same price of the Follow-On Offering, a number of Pubco Shares equal to (x) the dollar amount set forth opposite such Purchaser's name under the heading "Remaining Commitment" on Exhibit A-1 hereto divided by (y) the public offering price per share (before any underwriting discount) set forth on the cover of the final prospectus used in connection with the Follow-On Offering;

(ii) in the event that the Second Closing occurs pursuant to Section 1.4(a)(i)(y) above, a number of Pubco Shares equal to (x) the dollar amount set forth opposite such Purchaser's name under the heading "Remaining Commitment" on Exhibit A-1 hereto divided by (y) the greater of (1) an amount equal to ninety million dollars ($90,000,000) divided by the total number of shares outstanding on the third business day prior to the date of such Closing and (2) the Average VWAP per share of common stock of Pubco during the thirty (30) day period ending on the third business day prior to the date of such Closing; or

(iii) in the event that the Second Closing occurs pursuant to Section 1.4(a)(ii) above, Second Closing Notes with a principal face amount equal to the dollar amount set forth opposite such Purchaser's name under the heading "Remaining Commitment" on Exhibit A-1 hereto.

(c) At the Second Closing, in the event it occurs pursuant to Section 1.4(a)(ii) above, the Company shall deliver to each Purchaser a Note representing the principal face amount set forth opposite such Purchaser's name under the heading "Remaining Commitment" on Exhibit A-1 hereto, against payment of the purchase price therefor by (x) check payable to the Company, (y) wire transfer to the bank account designated by the Company, or (z) any combination of such methods.

1.5 Defined Terms Used in this Agreement. In addition to the terms defined elsewhere in this Agreement, the following terms used in this Agreement shall be construed to have the meanings set forth or referenced below.

(a) "**Affiliate**" means, with respect to any specified Person, any other Person who, directly or indirectly, controls, is controlled by, or is under common control with such Person, including, without limitation, any general partner, managing member, officer or director of such Person or any venture capital fund now or hereafter existing that is controlled by one or more general partners or managing members of, or shares the same management company with, such Person.

(b) "**Average VWAP**" means the arithmetic mean of the VWAP of the security in question for each trading day of the applicable period.

(c) "**Class B Common Stock**" means the shares of Class B common stock, par value $0.01 per share, of the Company.

(d) "**Closing**" means the each of the Initial Closing and Second Closing.

(e) "**Code**" means the United States Internal Revenue Code of 1986, as amended.

(f) "**Common Stock**" means the Class A Common Stock and the Class B Common Stock of the Company.

(g) "**Company Covered Person**" means, with respect to the Company as an "issuer" for purposes of Rule 506 promulgated under the Securities Act, any Person listed in the first paragraph of Rule 506(d)(1).

(h) "**Company Intellectual Property**" means all patents, patent applications, trademarks, trademark applications, service marks, service mark applications, trade names, copyrights, trade secrets, domain names, mask works, information and proprietary rights and processes, similar or other intellectual property rights, subject matter of any of the foregoing, tangible embodiments of any of the foregoing, licenses in, to and under any of the foregoing, and any and all such cases that are owned or used by the Company in the conduct of the Company's business as conducted immediately prior to the Initial Closing.

(i) "**Investors' Rights Agreement**" means the Second Amended and Restated Investors' Rights Agreement among the Company and the Purchasers and other stockholders of the Company dated as of March 10, 2015, a copy of which is attached as Exhibit D to this Agreement.

(j) "**Key Employee**" means any executive-level employee (including division director and vice president-level positions) as well as any employee or consultant who either alone or in concert with others develops, invents, programs or designs any Company Intellectual Property.

(k) "**Knowledge**" including the phrase "**to the Company's knowledge**" shall mean the actual knowledge of Bill Enright, Elizabeth Czerepak and Scot Roberts.

(l) "**Material Adverse Effect**" means any fact, event, circumstance or change that individually or in the aggregate when taken together with one or more other facts, events, circumstances or changes is or would reasonably be expected to be materially adverse to the condition (financial or otherwise), business, revenue, profitability, assets, liabilities or results of operations of the Company, taken as a whole, or the business of the Company, but excluding any effect resulting from or relating to (i) general economic conditions or general effects on the industry in which the Company is primarily engaged (including as a result of an outbreak or escalation of hostilities or the declaration of a state of emergency or war) that does not disproportionately affect the Company, (ii) any change or amendment to any law that does not disproportionately affect the Company, (iii) any public announcement of the transactions contemplated by this Agreement or the Merger Agreement or (iv) the results of any clinical trial.

(m) "**Merger Agreement**" means that certain Agreement and Plan of Merger and Reorganization, dated as of the date hereof, by and among Pubco, the Company and the other parties thereto.

(n) "**Merger Closing Date**" means the date of the closing of the transactions contemplated by the Merger Agreement, including without limitation the Mergers.

(o) "**Mergers**" means the mergers contemplated by the Merger Agreement.

(p) "**Parties**" means the Company and the Purchasers.

(q) "**Person**" means any individual, corporation, partnership, trust, limited liability company, association or other entity.

(r) "**Pubco**" means the corporation currently known as PharmAthene, Inc., whether as currently in existence or after the consummation of the Mergers and the change of the name of such corporation to "Altimmune, Inc.".

(s) "**Securities Act**" means the United States Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

(t) "**Transaction Agreements**" means this Agreement and the Investors' Rights Agreement.

(u) "**VWAP**" means the dollar volume-weighted average price for the securities in question on the national securities exchange on which it trades during the period beginning at 9:30:01 a.m., New York City time (or such other time as the national securities exchange on which it trades publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York City time (or such other time as the national securities exchange on which it trades publicly announces is the official close of trading), as reported by Bloomberg, L.P. through its "Volume at Price" function.

2. **Representations and Warranties of the Company**. The Company hereby represents and warrants to each Purchaser that, except as set forth on the Disclosure Schedule attached as Exhibit E to this Agreement or as otherwise disclosed pursuant to the Merger Agreement, which exceptions shall be deemed to be part of the representations and warranties made hereunder, the following representations are true and complete as of the date hereof. The Disclosure Schedule shall be arranged in sections corresponding to the numbered and lettered Sections contained in this Section 2, and the disclosures in any Section of the Disclosure Schedule shall qualify other Sections in this Section 2 only to the extent it is readily apparent from a reading of the disclosure that such disclosure is applicable to such other sections and Sections.

2.1 Organization, Good Standing, Corporate Power and Qualification. The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware and has all requisite corporate power and authority to carry on its business as presently conducted and as proposed to be conducted. The Company is duly qualified to transact business and is in good standing in the State of Maryland and in each other jurisdiction in which the failure to so qualify would have a Material Adverse Effect.

2.2 Capitalization.

(a) The authorized capital of the Company consists, immediately prior to the Initial Closing, of:

(i) 20,000,000 shares of Class A Common Stock, 9,195,109 shares of which are issued and outstanding immediately prior to the Initial Closing, and 3,146,896 shares of Class B Common Stock, 38,836 of which are issued and outstanding immediately prior to the Initial Closing. All of the outstanding shares of Common Stock have been duly authorized, are fully paid and nonassessable and were issued in compliance with all applicable federal and state securities laws. The Company holds no Common Stock in its treasury.

(ii) 800,000 shares of Preferred Stock, all of which have been designated Series B Convertible Preferred Stock, all of which are issued and outstanding immediately prior to the Initial Closing. The rights, privileges and preferences of the Preferred Stock are as stated in the Restated Certificate and as provided by the Delaware General Corporation Law. No other preferred stock is authorized, and the Company holds no preferred stock in its treasury.

(b) The Company has amended and restated its Amended and Restated Vaxin Inc. 2001 Employee Stock Option Plan and the Amended and Restated Vaxin Inc. 2001 Non-Employee Stock Option Plan, through adoption by the board of directors of the Company (the "**Board**") and approval by the Company stockholders (collectively the "**Stock Plans**"), and has reserved 2,520,438 shares of Common Stock for issuance to officers, directors, employees and consultants of the Company. Of such reserved shares of Common Stock, (i) options to purchase 1,609,812 shares have been granted and are currently outstanding and (ii) 910,626 shares of Common Stock remain available for issuance to officers, directors, employees and consultants pursuant to the Stock Plans in accordance with the terms and conditions thereof. The Company has made available to the Purchasers complete and accurate copies of the Stock Plans and forms of agreements used thereunder.

(c) Section 2.2(c) of the Disclosure Schedule sets forth the capitalization of the Company as of the date hereof including the number of shares of the following: (i) issued and outstanding Common Stock; (ii) granted stock options, including vesting schedule and exercise price; (iii) shares of Common Stock reserved for future award grants under the Stock Plans (and all other incentive plans); (iv) each series of Preferred Stock; and (v) warrants or stock purchase rights, if any. Except for (x) the conversion privileges of the Notes to be issued under this Agreement, (y) the rights provided in the Investors' Rights Agreement, and (z) the securities and rights described in Section 2.2(a)(ii) of this Agreement and Section 2.2(c) of the Disclosure Schedule, there are no outstanding options, warrants, rights (including conversion or preemptive rights and rights of first refusal or similar rights) or agreements, orally or in writing, to purchase or acquire from the Company any shares of Common Stock or Preferred Stock, or any securities convertible into or exchangeable for shares of Common Stock or Preferred Stock.

(d) None of the Company's stock purchase agreements or stock option or incentive documents contains a provision for acceleration of vesting (or lapse of a repurchase right) or other changes in the vesting provisions or other terms of such agreement or understanding upon the occurrence of any event or combination of events, including without limitation in the case where the Company's Stock Plans are not assumed in an acquisition. Except as set forth in the Restated Certificate, the Company has no obligation (contingent or otherwise) to purchase or redeem any of its capital stock.

(e) The Company believes in good faith that any "nonqualified deferred compensation plan" (as such term is defined under Section 409A(d)(1) of the Code and the guidance thereunder) under which the Company makes, is obligated to make or promises to make, payments (each, a "**409A Plan**") complies in all material respects, in both form and operation, with the requirements of Section 409A of the Code and the guidance thereunder. To the knowledge of the Company, no payment to be made under any 409A Plan is, or will be, subject to the penalties of Section 409A(a)(1) of the Code.

(f) The Company has obtained valid waivers of any rights by other parties to purchase any of the Company Purchased Securities covered by this Agreement.

2.3 Subsidiaries. Other than its holding of 100% of the issued and outstanding shares of Altimmune U.K. Ltd, and Altimmune France S.A., the Company does not currently own or control, directly or indirectly, any interest in any other corporation, partnership, trust, joint venture, limited liability company, association, or other business entity. The Company is not a participant in any joint venture, partnership or similar arrangement.

2.4 Authorization. All corporate action required to be taken by the Board and stockholders in order to authorize the Company to enter into this Agreement, and to issue the Company Purchased Securities at the Closing, has been taken or will be taken prior to the Closing. All action on the part of the officers of the Company necessary for the execution and delivery of this Agreement, the performance of all obligations of the Company under the Transaction Agreements to be performed as of the Closing, and the issuance and delivery of the Company Purchased Securities has been taken or will be taken prior to the Closing. This Agreement, when executed and delivered by the Company, and the Investors' Rights Agreement shall constitute valid and legally binding obligations of the Company, enforceable against the Company in accordance with their respective terms except (a) as limited by applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, or other laws of general application relating to or affecting the enforcement of creditors' rights generally, (b) as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies, (c) to the extent the indemnification provisions contained in the Investors' Rights Agreement may be limited by applicable federal or state securities laws or (d) with respect to the Pubco Shares or any action to be undertaken by Pubco related to the issuance thereof.

2.5 Valid Issuance of Company Purchased Securities.

(a) The Company Purchased Securities, when issued, sold and delivered in accordance with the terms and for the consideration set forth in this Agreement, will be validly issued and free of restrictions on transfer other than restrictions on transfer under the Transaction Agreements, applicable state and federal securities laws and liens or encumbrances created by or imposed by a Purchaser. Assuming the accuracy of the representations of the Purchasers in Section_3 of this Agreement and subject to the filings described in Section 2.6(b)(ii) below, the Company Purchased Securities will be issued in compliance with all applicable federal and state securities laws.

(b) No "bad actor" disqualifying event described in Rule 506(d)(1)(i)-(viii) of the Securities Act (a "**Disqualification Event**") is applicable to the Company or, to the Company's knowledge, any Company Covered Person, except for a Disqualification Event as to which Rule 506(d)(2)(ii–iv) or (d)(3), is applicable.

2.6 Governmental Consents and Filings. Assuming the accuracy of the representations made by the Purchasers in Section 3 of this Agreement, no consent, approval, order or authorization of, or registration, qualification, designation, declaration or filing with, any federal, state or local governmental authority is required on the part of the Company in connection with the sale of the Company Purchased Securities as contemplated by this Agreement, except for (a) the filing of the Restated Certificate, which will have been filed as of the Initial Closing, and (b) filings pursuant to Regulation D of the Securities Act, and applicable state securities laws, which have been made or will be made in a timely manner.

2.7 Litigation. There is no claim, action, suit, proceeding, arbitration, complaint, charge or (to the Company's Knowledge) investigation pending, or to the Company's Knowledge, currently threatened in writing (a) against the Company or any officer, director or Key Employee of the Company arising out of their relationship with the Company; (b) that questions the validity of the Transaction Agreements or the right of the Company to enter into them, or to consummate the transactions contemplated by the Transaction Agreements; or (c) to the Company's Knowledge, that would reasonably be expected to have, either individually or in the aggregate, a Material Adverse Effect. Neither the Company nor, to the Company's Knowledge, any of its officers, directors or Key Employees is a party or is named as subject to the provisions of any order, writ, injunction, judgment or decree of any court or government agency or instrumentality (in the case of officers, directors or Key Employees, such as would affect the Company). There is no action, suit, proceeding or investigation by the Company pending or which the Company intends to initiate. The foregoing includes, without limitation, actions, suits, proceedings or investigations pending or threatened in writing (or any basis therefor known to the Company) involving the prior employment of any of the Company's employees, their services provided in connection with the Company's business, any information or techniques allegedly proprietary to any of their former employers or their obligations under any agreements with prior employers.

2.8 Intellectual Property. The Company owns or possesses or believes it can acquire on commercially reasonable terms sufficient legal rights to all Company Intellectual Property without any known conflict with, or infringement of, the rights of others. To the Company's knowledge, no product or service marketed or sold (or proposed to be marketed or sold) by the Company violates or will violate any license or infringes or will infringe any intellectual property rights of any other party. There are no outstanding options, licenses, agreements, claims, encumbrances or shared ownership interests of any kind relating to the Company Intellectual Property, nor is the Company bound by or a party to any options, licenses or agreements of any kind with respect to the patents, trademarks, service marks, trade names, copyrights, trade secrets, licenses, information, proprietary rights and processes of any other Person, other than, in each case, with respect to commercially available software products under standard end-user object code license agreements. The Company has not received any communications alleging that the Company has violated, or by conducting its business, would violate any of the patents, trademarks, service marks, tradenames, copyrights, trade secrets, mask works or other proprietary rights or processes of any other Person. The Company has obtained and possesses valid licenses to use all of the software programs present on the computers and other software-enabled electronic devices that it owns or leases or that it has otherwise provided to its employees for their use in connection with the Company's business. To the Company's Knowledge, it will not be necessary to use any inventions of any of its employees or consultants (or Persons it currently intends to hire) made prior to their employment by the Company. Each employee and consultant has assigned to the Company all intellectual property rights he or she owns that are related to the Company's business as now conducted and as presently proposed to be conducted. Section 2.8 of the Disclosure Schedule lists all Company Intellectual Property. For purposes of this provision, the Company shall be deemed to have knowledge of a patent right if the Company has actual knowledge of the patent right or would be found to be on notice of such patent right as determined by reference to United States patent laws.

2.9 Compliance with Other Instruments. The Company is not in violation or default (a) of any provisions of its Restated Certificate or Bylaws, (b) of any instrument, judgment, order, writ or decree known to it, (c) under any note, indenture or mortgage, (d) under any lease, agreement, contract or purchase order to which it is a party or by which it is bound that is required to be listed on the Disclosure Schedule, or (e) to its Knowledge, of any provision of federal or state statute, rule or regulation applicable to the Company, the violation of which would have a Material Adverse Effect. The execution, delivery and performance of the Transaction Agreements and the consummation of the transactions contemplated by the Transaction Agreements will not result in any such violation or be in conflict with or constitute, with or without the passage of time and giving of notice, either (x) a default under any such provision,

instrument, judgment, order, writ, decree, contract or agreement; or (y) an event which results in the creation of any lien, charge or encumbrance upon any assets of the Company or the suspension, revocation, forfeiture or nonrenewal of any material permit or license applicable to the Company.

2.10 Agreements; Actions.

(a) Except for the Transaction Agreements, there are no agreements, understandings, instruments, contracts or proposed transactions to which the Company is a party or by which it is bound that involve (i) obligations (contingent or otherwise) of, or payments to, the Company in excess of $50,000, (ii) the license of any patent, copyright, trademark, trade secret or other proprietary right to or from the Company, (iii) the grant of rights to manufacture, produce, assemble, license, market, or sell its products to any other Person that limit the Company's exclusive right to develop, manufacture, assemble, distribute, market or sell its products or (iv) indemnification by the Company with respect to infringements of proprietary rights.

(b) The Company has not (i) declared or paid any dividends, or authorized or made any distribution upon or with respect to any class or series of its capital stock, (ii) incurred any indebtedness for money borrowed or incurred any other liabilities individually in excess of $50,000 or in excess of $250,000 in the aggregate, (iii) made any loans or advances to any Person, other than ordinary advances for travel expenses, or (iv) sold, exchanged or otherwise disposed of any of its assets or rights, other than the sale of inventory in the ordinary course of business.

(c) The Company is not a guarantor or indemnitor of any indebtedness of any other Person.

(d) For the purposes of this Section 2.10, all indebtedness, liabilities, agreements, understandings, instruments, contracts and proposed transactions involving the same Person (including Persons the Company has reason to believe are affiliated with each other) shall be aggregated for the purpose of meeting the individual minimum dollar amounts of such Section.

2.11 Certain Transactions.

(a) Other than (i) standard employee benefits generally made available to all employees, (ii) standard director and officer indemnification agreements approved by the Board and (iii) the purchase of shares of the Company's capital stock and the issuance of options to purchase shares of the Company's Common Stock, in each instance, approved in the written minutes of the Board, there are no agreements, understandings or proposed transactions between the Company and any of its officers, directors, consultants or Key Employees, or any Affiliate thereof.

(b) The Company is not indebted, directly or indirectly, to any of its directors, officers or employees or to their respective spouses or children or to any Affiliate of any of the foregoing, other than in connection with expenses or advances of expenses incurred in the ordinary course of business or employee relocation expenses and for other customary employee benefits made generally available to all employees. None of the Company's officers or employees, or any members of their immediate families, or any Affiliate of the foregoing are, directly or indirectly, indebted to the Company or, to the Company's Knowledge, have any (i) material commercial, industrial, banking, consulting, legal, accounting, charitable or familial relationship with any of the Company's customers, suppliers, service providers, joint venture partners, licensees and competitors; (ii) direct or indirect ownership interest in any firm or corporation with which the Company is affiliated or with which the Company has a business relationship, or any firm or corporation which competes with the Company except that officers, employees or stockholders of the Company may own stock in (but not exceeding two percent of the outstanding capital stock of) publicly traded companies that may compete with the Company; or (iii) financial interest in any material contract with the Company.

2.12 Rights of Registration and Voting Rights. Except as provided in the Investors' Rights Agreement, the Company is not under any obligation to register under the Securities Act any of its currently outstanding securities or any securities issuable upon exercise or conversion of its currently outstanding securities, nor (to the Company's Knowledge) has any stockholder of the Company entered into any agreements with respect to the voting of capital shares of the Company.

2.13 Property. The property and assets that the Company owns are free and clear of all mortgages, deeds of trust, liens, loans and encumbrances, except for statutory liens for the payment of current taxes that are not yet delinquent and encumbrances and liens that arise in the ordinary course of business and do not materially impair the Company's ownership or use of such property or assets. With respect to the property and assets it leases, the Company is in compliance with such leases and, to its knowledge, holds a valid leasehold interest free of any liens, claims or encumbrances other than those of the lessors of such property or assets. The Company does not own any real property.

2.14 Financial Statements. The Company has made available to each Purchaser its unaudited financial statements (including balance sheet, income statement and statement of cash flows) as of September 30, 2016 (collectively, the "**Financial Statements**"). The Financial Statements for the Company have been prepared in accordance with United States generally accepted accounting principles ("**U.S. GAAP**") applied on a consistent basis throughout the periods indicated except that the Financial Statements may not contain all footnotes required by U.S. GAAP. The Financial Statements fairly present in all material respects the financial condition and operating results of the Company as of the dates, and for the periods, indicated therein, subject to normal year-end audit adjustments. Except as set forth in the Financial Statements, the Company has no material liabilities or obligations, contingent or otherwise, other than (i) liabilities incurred in the ordinary course of business subsequent to September 30, 2016; (ii) obligations under contracts and commitments incurred in the ordinary course of business; and (iii) liabilities and obligations of a type or nature not required under U.S. GAAP to be reflected in the Financial Statements, which in the aggregate would not have a Material Adverse Effect. The Company maintains and will continue to maintain a standard system of accounting established and administered in accordance with U.S. GAAP. To the Company's Knowledge, since the date of the most recent financial statements, no fact, event, circumstance or change has occurred which has had a Material Adverse Effect.

2.15 Employee Matters.

(a) As of the date hereof, the Company employs fourteen (14) full-time employees and one (1) part-time employee, and engages no consultants or independent contractors. The Company has made available a list, as of the Closing, of the names, titles and material compensation arrangements of each employee of the Company to each Purchaser who is purchasing Notes hereunder.

(b) To the Company's Knowledge, none of its employees is obligated under any contract (including licenses, covenants or commitments of any nature) or other agreement, or subject to any judgment, decree or order of any court or administrative agency, that would materially interfere with such employee's ability to promote the interest of the Company or that would conflict with the Company's business. Neither the execution or delivery of the Transaction Agreements, nor the carrying on of the Company's business by the employees of the Company, nor the conduct of the Company's business as now conducted and as presently proposed to be conducted, will, to the Company's knowledge, conflict with or result in a breach of the terms, conditions, or provisions of, or constitute a default under, any contract, covenant or instrument under which any such employee is now obligated.

(c) The Company is not delinquent in payments to any of its employees, consultants, or independent contractors for any wages, salaries, commissions, bonuses, or other direct compensation for any service performed for it to the date hereof or amounts required to be reimbursed to such employees, consultants or independent contractors. The Company has complied in all material respects with all applicable state and federal equal employment opportunity laws and with other laws related to employment, including those related to wages, hours, worker classification and collective bargaining. The Company has withheld and paid to the appropriate governmental entity or is holding for payment not yet due to such governmental entity all amounts required to be withheld from employees of the Company and is not liable for any arrears of wages, taxes, penalties or other sums for failure to comply with any of the foregoing.

(d) To the Company's Knowledge, no Key Employee intends to terminate employment with the Company or is otherwise likely to become unavailable to continue as a Key Employee, nor does the Company have a present intention to terminate the employment of any of the foregoing. The employment of each employee of the Company is terminable at the will of the Company. Except as set forth in the Disclosure Schedule or as required by law, upon termination of the employment of any such employees, no severance or other payments will become due. Except as set forth in the Disclosure Schedule, the Company has no policy, practice, plan or program of paying severance pay or any form of severance compensation in connection with the termination of employment services.

(e) The Company has not made any representations regarding equity incentives to any officer, employee, director or consultant that are inconsistent with the share amounts and terms set forth in the minutes of meetings of the Board.

(f) Each former Key Employee whose employment was terminated by the Company has entered into an agreement with the Company providing for the full release of any claims against the Company or any related party arising out of such employment.

(g) The Disclosure Schedule sets forth each employee benefit plan maintained, established or sponsored by the Company, or which the Company participates in or contributes to, which is subject to the U.S. Employee Retirement Income Security Act of 1974, as amended ("**ERISA**"). The Company has made all required contributions and has no liability to any such employee benefit plan, other than liability for health plan continuation coverage described in ERISA, and has complied in all material respects with all applicable laws for any such employee benefit plan.

(h) To the Company's knowledge, none of the Key Employees of the Company has been (i) subject to voluntary or involuntary petition under the federal bankruptcy laws or any state insolvency law or the appointment of a receiver, fiscal agent or similar officer by a court for his business or property; (ii) convicted in a criminal proceeding or named as a subject of a pending criminal proceeding (excluding traffic violations and other minor offenses); (iii) subject to any order, judgment or decree (not subsequently reversed, suspended, or vacated) of any court of competent jurisdiction permanently or temporarily enjoining him from engaging, or otherwise imposing limits or conditions on his engagement in any securities, investment advisory, banking, insurance, or other type of business or acting as an officer or director of a public company; or (iv) found by a court of competent jurisdiction in a civil action or by the U.S. Securities and Exchange Commission or the Commodity Futures Trading Commission to have violated any federal or state securities, commodities, or unfair trade practices law, which such judgment or finding has not been subsequently reversed, suspended or vacated.

2.16 Tax Returns and Payments. During the period between January 1, 2015 and the date of this Agreement, the Company has paid all U.S. federal, state, county, local or foreign taxes when due and payable, and there are no accrued and unpaid federal, state, country, local or foreign taxes of the

Company which are due, whether or not assessed or disputed. There have been no examinations or audits of any tax returns or reports by any applicable federal, state, local or foreign governmental agency. The Company has duly and timely filed all federal, state, county, local and foreign tax returns required to have been filed by it and there are in effect no waivers of applicable statutes of limitations with respect to taxes for any year. The Company is not now and has never been a "United States real property holding corporation" as defined in the Code.

2.17 Insurance. The Company has in full force and effect fire and casualty insurance policies with extended coverage, sufficient in amount (subject to reasonable deductions) to allow it to replace any of its properties or assets that might be damaged or destroyed.

2.18 Employee Agreements. Each current and former employee, consultant and officer of the Company has executed an agreement with the Company regarding confidentiality and proprietary information substantially in the form or forms delivered to the counsel for the Purchasers (the "**Confidential Information Agreements**"). No current or former Key Employee has excluded works or inventions from his or her assignment of inventions pursuant to such Key Employee's Confidential Information Agreement. Each current and former Key Employee has executed a non-competition and non-solicitation agreement substantially in the form or forms delivered to counsel for the Purchasers. The Company is not aware that any of its Key Employees is in violation, in any material respect, of any material agreement between such person and the Company.

2.19 Permits. To the Company's Knowledge, the Company has all franchises, permits, licenses and any similar authority necessary for the conduct of its business, the lack of which could reasonably be expected to have a Material Adverse Effect, and it is not in default in any material respect thereunder.

2.20 Corporate Documents. The Restated Certificate and Bylaws of the Company are in the form made available to the Purchasers. The Company has made available to the Purchasers minutes of all meetings of directors and stockholders and all actions by written consent without a meeting by the directors and stockholders since the date of incorporation and accurately reflects in all material respects all actions by the directors (and any committee of directors) and stockholders with respect to all transactions referred to in such minutes.

2.21 Environmental and Safety Laws. Except as would not reasonably be expected to have a Material Adverse Effect to its knowledge (a) the Company is and has been in compliance with all Environmental Laws; (b) there has been no release or, to the Company's Knowledge, threatened release of any pollutant, contaminant or toxic or hazardous material, substance or waste or petroleum or any fraction thereof (each a "**Hazardous Substance**"), on, upon, into or from any site currently or heretofore owned, leased or otherwise used by the Company; (c) there have been no Hazardous Substances generated by the Company that have been disposed of or come to rest at any site that has been included in any published U.S. federal, state or local "superfund" site list or any other similar list of hazardous or toxic waste sites published by any governmental authority in the United States; and (d) there are no underground storage tanks located on, no polychlorinated biphenyls ("**PCBs**") or PCB-containing equipment used or stored on, and no hazardous waste as defined by the Resource Conservation and Recovery Act, as amended, stored on, any site owned or operated by the Company, except for the storage of hazardous waste in compliance with Environmental Laws (meaning any law, regulation, or other applicable requirement relating to (i) releases or threatened release of Hazardous Substance; (ii) pollution or protection of employee health or safety, public health or the environment; or (iii) the manufacture, handling, transport, use, treatment, storage, or disposal of Hazardous Substances.

2.22 Foreign Corrupt Practices Act. Neither the Company nor any of the Company's directors, officers, employees or agents have, directly or indirectly, made, offered, promised or authorized any payment or gift of any money or anything of value to or for the benefit of any "foreign official" (as such term is defined in the U.S. Foreign Corrupt Practices Act of 1977, as amended (the "**FCPA**")), foreign political party or official thereof or candidate for foreign political office for the purpose of (a) influencing any official act or decision of such official, party or candidate, (b) inducing such official, party or candidate to use his, her or its influence to affect any act or decision of a foreign governmental authority or (c) securing any improper advantage, in the case of (a), (b) and (c) above in order to assist the Company or any of its affiliates in obtaining or retaining business for or with, or directing business to, any person. Neither the Company nor any of its directors, officers, employees or agents have made or authorized any bribe, rebate, payoff, influence payment, kickback or other unlawful payment of funds or received or retained any funds in violation of any law, rule or regulation. The Company further represents that it has maintained, and has caused each of its subsidiaries (during the period the Company has owned such subsidiary) to maintain, systems of internal controls (including, but not limited to, accounting systems, purchasing systems and billing systems) to ensure compliance with the FCPA or any other applicable anti-bribery or anti-corruption law. Neither the Company, or, to the Company's knowledge, any of its officers, directors or employees are the subject of any allegation, voluntary disclosure, investigation, prosecution or other enforcement action related to the FCPA or any other anti-corruption law.

2.23 Data Privacy. In connection with its collection, storage, transfer (including, without limitation, any transfer across national borders) and/or use of any personally identifiable information from any individuals, including, without limitation, any customers, prospective customers, employees and/or other third parties (collectively "**Personal Information**"), the Company is and has been, to its Knowledge, in compliance with all applicable laws in all relevant jurisdictions, the Company's privacy policies and the requirements of any contract or codes of conduct to which the Company is a party. The Company has commercially reasonable physical, technical, organizational and administrative security measures and policies in place to protect all Personal Information collected by it or on its behalf from and against unauthorized access, use and/or disclosure. The Company is and has been, to the Company's Knowledge, in compliance in all material respects with all laws relating to data loss, theft and breach of security notification obligations.

2.24 FDA and Regulatory Matters. The Company is in compliance, in all material respects, with all applicable laws administered or issued by the United States Food and Drug Administration (the "**FDA**") or the similar governmental entity in any applicable jurisdiction in which the Company conducts its business (each a "**Regulatory Authority**" and together with the FDA, the "**Regulating Authorities**"). The Company has obtained all necessary and applicable exemptions, approvals, clearances, authorizations, licenses and registrations required by Regulating Authorities to permit the conduct of its business as presently conducted and as presently proposed to be conducted, and the Company is in material compliance with all terms and conditions of its Regulatory Permits. The Company has not received notice from a Regulating Authority alleging any material violation of law by the Company.

3. **Representations and Warranties of the Purchasers**. Each Purchaser hereby represents and warrants to the Company, severally and not jointly, that:

3.1 Authorization. The Purchaser has full power and authority to enter into and deliver each of the Transaction Agreements, to purchase the Purchased Securities hereunder and to carry out and perform its obligations under the terms of the Transaction Agreements. All action on the part of the Purchaser necessary for the authorization, execution, delivery and performance of the Transaction Agreements, and the performance of all of the Purchaser's obligations under the Transaction Agreements,

has been taken. The Transaction Agreements to which the Purchaser is a party, when executed and delivered by the Purchaser, will constitute valid and legally binding obligations of the Purchaser, enforceable in accordance with their terms, except (a) as limited by applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance and any other laws of general application affecting enforcement of creditors' rights generally, and as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies or (b) to the extent the indemnification provisions contained in the Investors' Rights Agreement may be limited by applicable U.S. federal or state securities laws. No consent, approval, authorization, order, filing, registration or qualification of or with any court, governmental authority or third Person is required to be obtained by the Purchaser in connection with the execution and delivery of the Transaction Agreements by the Purchaser or the performance of the Purchaser's obligations hereunder or thereunder.

3.2 Purchase Entirely for Own Account. This Agreement is made with the Purchaser in reliance upon the Purchaser's representation to the Company, which by the Purchaser's execution of this Agreement, the Purchaser hereby confirms, that the Purchased Securities to be acquired by the Purchaser will be acquired for investment for the Purchaser's own account, not as a nominee or agent, and not with a view to the resale or distribution of any part thereof, and that the Purchaser has no present intention of selling, granting any participation in, or otherwise distributing the same. By executing this Agreement, the Purchaser further represents that the Purchaser does not presently have any contract, undertaking, agreement or arrangement with any Person to sell, transfer or grant participations to such Person or to any third Person, with respect to any of the Purchased Securities. The Purchaser has not been formed for the specific purpose of acquiring the Purchased Securities.

3.3 Disclosure of Information. The Purchaser has had an opportunity to discuss the Company's business, management, financial affairs and the terms and conditions of the offering of the Purchased Securities with the Company's management and has had an opportunity to review the Company's facilities. The foregoing, however, does not limit or modify the representations and warranties of the Company in Section 2 of this Agreement or the right of the Purchasers to rely thereon.

3.4 Restricted Securities. The Purchaser (a) understands that the Company Purchased Securities have not been, and will not be, registered under the Securities Act, by reason of a specific exemption from the registration provisions of the Securities Act which depends upon, among other things, the bona fide nature of the investment intent and the accuracy of the Purchaser's representations as expressed herein; (b) understands that the Company Purchased Securities are "restricted securities" under applicable U.S. federal and state securities laws and that, pursuant to these laws, the Purchaser must hold the Company Purchased Securities indefinitely unless they are registered with the Securities and Exchange Commission and qualified by state authorities, or an exemption from such registration and qualification requirements is available; (c) acknowledges that the Company has no obligation to register or qualify the Company Purchased Securities, or the Conversion Securities into which they may be converted, for resale except as set forth in the Investors' Rights Agreement; (d) acknowledges that if an exemption from registration or qualification is available, it may be conditioned on various requirements including, but not limited to, the time and manner of sale, the holding period for the Company Purchased Securities, and on requirements relating to the Company which are outside of the Purchaser's control, and which the Company is under no obligation and may not be able to satisfy; (e) understands that no public market now exists for the Company Purchased Securities, and that the Company has made no assurances that a public market will ever exist for the Company Purchased Securities; and (f) understands that the Company Purchased Securities and any securities issued in respect of or exchange for the Company Purchased Securities, may be notated with one or all of any legend set forth in, or required by, the other Transaction Agreements, as well as any legend required by the securities laws of any state or other jurisdiction to the extent such laws are applicable to the Company Purchased Securities represented by the certificate, instrument, or book entry so legended, and also the following legend:

"THE SHARES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH TRANSFER MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN A FORM SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE SECURITIES ACT OF 1933."

3.5 Accredited Investor. The Purchaser is an accredited investor as defined in Rule 501(a) of Regulation D promulgated under the Securities Act.

3.6 Foreign Investors. If the Purchaser is not a United States person (as defined by Section 7701(a)(30) of the Code), the Purchaser hereby represents that it has satisfied itself as to the full observance of the laws of its jurisdiction in connection with any invitation to subscribe for the Purchased Securities or any use of this Agreement, including (i) the legal requirements within its jurisdiction for the purchase of the Purchased Securities, (ii) any foreign exchange restrictions applicable to such purchase, (iii) any governmental or other consents that may need to be obtained and (iv) the income tax and other tax consequences, if any, that may be relevant to the purchase, holding, redemption, sale or transfer of the Purchased Securities. The Purchaser's subscription and payment for and continued beneficial ownership of the Purchased Securities will not violate any applicable securities or other laws of the Purchaser's jurisdiction.

3.7 No General Solicitation. Neither the Purchaser, nor any of its officers, directors, employees, agents, stockholders or partners has either directly or indirectly, including through a broker or finder, (a) engaged in any general solicitation or (b) published any advertisement in connection with the offer and sale of any Purchased Securities.

3.8 Residence. If the Purchaser is an individual, then the Purchaser resides in the state or province identified in the address of the Purchaser set forth on Exhibit A-2; if the Purchaser is a partnership, corporation, limited liability company or other entity, then the office or offices of the Purchaser in which its principal place of business is identified in the address or addresses of the Purchaser set forth on Exhibit A-2.

3.9 Access to Data. The Purchaser has had an opportunity to ask questions of, and receive answers from, the officers of the Company concerning the Transaction Agreements and the Merger Agreement, the exhibits and schedules attached hereto and thereto and the transactions contemplated by the Transaction Agreements and the Merger Agreement, as well as the Company's business, management and financial affairs, which questions were answered to its satisfaction. The Purchaser understands that such discussions, as well as any information issued by the Company, were intended to describe material aspects of the Company's business and prospects, but were not necessarily a thorough or exhaustive description. The Purchaser acknowledges that any business plans prepared by the Company have been, and continue to be, subject to change and that any projections included in such business plans or otherwise are necessarily speculative in nature, and it can be expected that some or all of the assumptions underlying the projections will not materialize or will vary significantly from actual results, provided that the Company confirms that such business plans were prepared in good faith and

using commercially reasonable efforts. The Purchaser also acknowledges that it is relying solely on its own counsel and not on any statements or representations of the Company or its agents for legal advice with respect to this investment or the transactions contemplated by the Transaction Agreements or the Merger Agreement.

3.10 Tax Advisors. The Purchaser has reviewed with its own tax advisors the U.S. federal, state, local and foreign tax consequences of this investment and the transactions contemplated by the Transaction Agreements. With respect to such matters, the Purchaser relies solely on such advisors and not on any statements or representations of the Company or any of its agents, written or oral. The Purchaser understands that it (and not the Company) shall be responsible for its own tax liability that may arise as a result of this investment or the transactions contemplated by the Transaction Agreements.

3.11 Exculpation Among Purchasers. The Purchaser acknowledges that it is not relying upon any Person, other than the Company and its officers and directors, in making its investment or decision to invest in the Company. The Purchaser agrees that neither any Purchaser nor the respective controlling Persons, officers, directors, partners, agents, or employees of any Purchaser shall be liable to any other Purchaser for any action heretofore taken or omitted to be taken by any of them in connection with the purchase of the Purchased Securities.

3.12 Consent to Promissory Note Conversion and Termination. Each Purchaser, to the extent that such Purchaser, as set forth on Exhibit A-1, is a holder of any indebtedness of the Company being converted and/or cancelled in consideration of the issuance hereunder of Purchased Securities to such Purchaser, hereby agrees that the entire amount owed to such Purchaser under such indebtedness is being tendered to the Company in exchange for the applicable Purchased Securities set forth on the Exhibit A-1, and effective upon the Company's and such Purchaser's execution and delivery of this Agreement, without any further action required by the Company or such Purchaser, such indebtedness and all obligations and liabilities set forth therein or otherwise arising in relation thereto shall be immediately deemed repaid in full and terminated in their entirety, including, but not limited to, any security interest effected therein.

4. **Conditions to the Purchasers' Obligations at the Initial Closing**. The obligations of each Purchaser to purchase the Purchased Securities at the Initial Closing are subject to the fulfillment, on or before the Initial Closing, of each of the following conditions, unless otherwise waived by Purchasers purchasing a majority of the Notes:

4.1 Representations and Warranties. The representations and warranties of the Company contained in Section 2 shall be true and correct in all material respects as of the date of the Initial Closing, after giving effect to any updated disclosure schedules delivered by the Company prior to the Initial Closing, except where the failure to be true and correct has not had, and would not reasonably be expected to have, a Material Adverse Effect.

4.2 Performance. The Company shall have performed and complied, in all material respects, with all covenants, agreements, obligations and conditions contained in this Agreement that are required to be performed or complied with by the Company on or before the Initial Closing.

4.3 Certificate. The Chief Executive Officer of the Company shall deliver to the Purchasers a certificate certifying (i) that the conditions specified in Sections 4.1 and 4.2 have been fulfilled and (ii) a true and correct copy of (A) the certified Restated Certificate, (B) the bylaws of the Company and (C) the board and stockholder resolutions approving this Agreement and the consummation of the transactions contemplated hereby.

4.4 Qualifications. All authorizations, approvals or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required in connection with the lawful issuance and sale of the Purchased Securities pursuant to this Agreement shall be obtained and effective as of the Initial Closing.

4.5 Restated Certificate. The Company shall have filed the Restated Certificate with the Secretary of State of Delaware, and it shall continue to be in full force and effect as of the Initial Closing.

4.6 Proceedings and Documents. All corporate and other proceedings in connection with the transactions contemplated at the Initial Closing and all documents incident thereto shall be reasonably satisfactory in form and substance to Purchasers representing a majority of the Notes at the Initial Closing and each Purchaser (or its representatives) shall have received all such certified or other copies of such documents as reasonably requested. Such documents may include good standing certificates.

4.7 Preemptive Rights/Rights of Refusal. The Company shall have fully satisfied (including with respect to rights of timely notification) or obtained enforceable waivers in respect of any preemptive or similar rights directly or indirectly affecting the Notes being issued hereunder.

5. **No Conditions to the Purchasers' Obligations at the Second Closing**. The obligations of each Purchaser to purchase the Purchased Securities at the Second Closing are not subject to any conditions.

6. **Conditions of the Company's Obligations at Each Closing.** The obligations of the Company to sell the Company Purchased Securities to the Purchasers at each Closing are subject to the fulfillment, on or before such Closing, of each of the following conditions, unless otherwise waived:

6.1 Representations and Warranties. The representations and warranties of each Purchaser contained in Section 3 shall be true and correct in all respects as of such Closing.

6.2 Performance. Each Purchaser shall have performed and complied, in all material respects, with all covenants, agreements, obligations and conditions contained in this Agreement that are required to be performed or complied with by it on or before such Closing.

6.3 Qualifications. All authorizations, approvals or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required in connection with the lawful issuance and sale of the Company Purchased Securities pursuant to this Agreement shall be obtained and effective as of such Closing.

6.4 Investors' Rights Agreement. Each Purchaser, if not already a party thereto, shall have executed and delivered the Investors' Rights Agreement.

7. **Miscellaneous**.

7.1 Survival of Warranties. Unless otherwise set forth in this Agreement, the representations and warranties of the Company and the Purchasers contained in or made pursuant to this Agreement shall survive the execution and delivery of this Agreement and each Closing, shall expire on the first anniversary of Second Closing, and shall in no way be affected by any investigation or knowledge of the subject matter thereof made by or on behalf of the Purchasers or the Company.

7.2 Successors and Assigns. The terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the Parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the Parties hereto or their respective successors and assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. The Company may assign any of its rights, interests, or obligations hereunder to any parent company of either the Company or any successor to the Company (including, without limitation, pursuant to the Mergers). Pubco shall be an intended third- party beneficiary of this Agreement; provided, that upon termination of the Merger Agreement, Pubco shall have no rights hereunder.

7.3 Governing Law. This Agreement shall be governed by the internal law of the State of Delaware, without reference to applicable principles of laws that would require the application of the law of any other jurisdiction.

7.4 Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

7.5 Notices. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given upon the earlier of (a) actual receipt, (b) personal delivery to the party to be notified, (c) when sent if sent by electronic mail or facsimile during normal business hours of the recipient, and if not sent during normal business hours, then on the recipient's next business day or (d) three business days after deposit with an internationally recognized overnight courier, freight prepaid, specifying next business day delivery, with written verification of receipt. All communications shall be sent to the respective parties at their address as set forth on Exhibit A-2 or to such e-mail address, facsimile number or address as subsequently modified by written notice given in accordance with this Section 7.5.

7.6 No Finder's Fees. Each party represents that it neither is nor will be obligated for any finder's fee or commission in connection with this transaction. Each Purchaser agrees to indemnify and to hold harmless the Company from any liability for any commission or compensation in the nature of a finder's or broker's fee arising out of this transaction (and the costs and expenses of defending against such liability or asserted liability) for which each Purchaser or any of its officers, employees or representatives is responsible. The Company agrees to indemnify and hold harmless each Purchaser from any liability for any commission or compensation in the nature of a finder's or broker's fee arising out of this transaction (and the costs and expenses of defending against such liability or asserted liability) for which the Company or any of its officers, employees or representatives is responsible.

7.7 Fees and Expenses. Each party shall be responsible for and promptly pay all fees and expenses incurred by such party in connection with the negotiation, execution and delivery of the Transaction Agreements and the consummation of the transactions contemplated thereby.

7.8 Amendments and Waivers. Except as set forth to the contrary elsewhere in this Agreement, any term of this Agreement may be amended, terminated or waived only with the written consent of the Company and Purchasers representing a majority in interest of the Notes to be purchased at the Initial Closing. In addition, (i) prior to the closing of the Mergers, any amendment, termination or waiver of any term of this Agreement shall require the written consent of Pubco, and (ii) upon the closing of the Mergers, any amendment, termination or waiver of any term of this Agreement shall require the written consent of at least one of the Section 5.13 Directors (as such term is defined in the Merger

Agreement). Any amendment or waiver effected in accordance with this Section shall be binding upon the Purchasers and each transferee of the Purchased Securities (or the Conversion Securities issuable upon exercise or conversion thereof), each future holder of all such securities, and the Company.

7.9 Interpretation. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provision. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement. No delay or omission to exercise any right, power or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power or remedy of such non-breaching or non-defaulting party nor shall it be construed to be a waiver of any such breach or default, or an acquiescence therein, or of or in any similar breach or default thereafter occurring; nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. Any waiver, permit, consent or approval of any kind or character on the part of any party of any breach or default under this Agreement, or any waiver on the part of any party of any provisions or conditions of this Agreement, must be in writing and shall be effective only to the extent specifically set forth in such writing. All remedies, either under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative. This Agreement (including the Exhibits hereto), the Restated Certificate and the other Transaction Agreements constitute the full and entire understanding and agreement between the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties are expressly canceled.

7.10 Specific Performance; Arbitration; Waiver of Jury Trial.

(a) Each of the Parties acknowledges and agrees that the other Parties would be damaged irreparably in the event any of the provisions of this Agreement are not performed in accordance with their specific terms or otherwise are breached or violated. Accordingly, each of the Parties agrees that, without posting a bond or other undertaking, to the extent such remedy is not available through arbitration, the other Parties will be entitled to an injunction or injunctions to prevent breaches or violations of the provisions of this Agreement and to enforce specifically this Agreement and the terms and provisions hereof in any Action instituted in federal court in Delaware in addition to any other remedy to which it may be entitled, at law or in equity. Each Party further agrees that, in the event of any action for specific performance in respect to such breach or violation, it (i) will not assert the defense that a remedy at law would be adequate, (ii) irrevocably submits to the jurisdiction of any federal district court located in the State of Delaware for himself or itself and in respect of his or its property with respect to such action, and (iii) irrevocably agrees that venue would be proper in such court and waives any objection that such court is an improper or inconvenient forum for the resolution of such action.

(b) Except for the Parties' respective rights to seek injunctive or equitable relief expressly available to them under this Agreement, the Parties agree that any dispute, controversy or claim arising out of or relating to this Agreement or the breach thereof, including, but not limited to, its negotiation and execution, or concerning the provisions of this Agreement or their application to any state of facts, or the rights or equities of any of the Parties hereto, shall be resolved by final and binding confidential arbitration conducted in English before a panel of three arbitrators (with each of a majority of the Purchasers and the Company selecting a single arbitrator, and such two arbitrators selecting the third arbitrator) in Wilmington, Delaware, USA, in accordance with the then-current Commercial Arbitration Rules of the American Arbitration Association, as amended from time to time, or any successor thereto (the "**AAA Rules**") as modified by this Section 7.10 and the other provisions of this Agreement. Each of the arbitrators shall be reasonably familiar with the business of venture capital financing in biotechnology companies. The parties shall bear the costs of the arbitration equally. The panel of arbitrators shall, promptly after holding a hearing, render a written decision based on applicable law, together with a

written opinion setting forth in reasonable detail the grounds for such decision. Judgment may be entered in any court of competent jurisdiction to enforce the award entered by the panel of arbitrators. This Section 7.10 shall be construed to the maximum extent possible to comply with the laws of the State of Delaware, including, to the extent applicable, the Uniform Arbitration Act (10 Del. C. § 5701 et seq.) (the "**Delaware Arbitration Act**"*)*. If, nevertheless, it shall be determined by a court of competent jurisdiction that any provision or wording of this Section 7.10, including any AAA Rules, shall be invalid or unenforceable under the Delaware Arbitration Act, to the extent applicable, or other applicable Law, such invalidity shall not invalidate all of this Section 7.10. In such event, this Section 7.10 shall be construed so as to limit any term or provision so as to make it valid and enforceable within the requirements of the Delaware Arbitration Act and other applicable Law, and, in the event such term or provision cannot be so limited, this Section 7.10 shall be construed to omit such invalid or unenforceable provision.

(C) TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW THAT CANNOT BE WAIVED, EACH PARTY HEREBY WAIVES AND COVENANTS THAT IT WILL NOT ASSERT (WHETHER AS PLAINTIFF, DEFENDANT OR OTHERWISE) ANY RIGHT TO TRIAL BY JURY IN ANY FORUM IN RESPECT OF ANY ACTION ARISING OUT OF OR BASED UPON ANY TRANSACTION AGREEMENT OR THE SUBJECT MATTER THEREOF OR IN ANY WAY CONNECTED WITH OR RELATED OR INCIDENTAL TO THE TRANSACTIONS CONTEMPLATED HEREBY, IN EACH CASE WHETHER NOW EXISTING OR HEREAFTER ARISING. ANY PARTY MAY FILE AN ORIGINAL COUNTERPART OR A COPY OF THIS SECTION 7.10(C) WITH ANY COURT AS WRITTEN EVIDENCE OF THE CONSENT OF EACH SUCH PARTY TO THE WAIVER OF ITS RIGHT TO TRIAL BY JURY.

7.11 No Commitment for Additional Financing. The Company acknowledges and agrees that no Purchaser has made any representation, undertaking, commitment or agreement to provide or assist the Company in obtaining any financing, investment or other assistance, other than the purchase of the Notes as set forth herein and subject to the conditions set forth herein. In addition, the Company acknowledges and agrees that (a) no statements, whether written or oral, made by any Purchaser or its representatives on or after the date of this Agreement shall create an obligation, commitment or agreement to provide or assist the Company in obtaining any financing or investment, (b) the Company shall not rely on any such statement by any Purchaser or its representatives, and (c) an obligation, commitment or agreement to provide or assist the Company in obtaining any financing or investment may only be created by a written agreement, signed by such Purchaser and the Company, setting forth the terms and conditions of such financing or investment and stating that the parties intend for such writing to be a binding obligation or agreement. Each Purchaser shall have the right, in its sole and absolute discretion, to refuse or decline to participate in any other financing of or investment in the Company, and shall have no obligation to assist or cooperate with the Company in obtaining any financing, investment or other assistance.

7.12 Waiver of Conflicts. Each of the Purchasers and the Company acknowledges that Proskauer Rose LLP ("**Proskauer**") has represented and may currently represent certain of the Purchasers or their respective Affiliates. In the course of such representation, Proskauer may have come into possession of confidential information relating to such Purchasers. Each of the Purchasers and the Company acknowledges that Proskauer is representing only the Company in the transactions contemplated by this Agreement. By executing this Agreement, each of the Purchasers and the Company hereby waives any actual or potential conflict of interest which may arise as a result of Proskauer's representation of such persons and entities and Proskauer's possession of such confidential information. Each of the Purchasers and the Company represents that it has had the opportunity to consult with independent counsel concerning the giving of this waiver. Proskauer is an intended third party beneficiary of this Section 7.12.

[REMAINDER OF THIS PAGE IS BLANK. SIGNATURE PAGES FOLLOW.]

IN WITNESS WHEREOF, the parties have executed this Convertible Promissory Note Purchase Agreement as of the date first written above.

COMPANY:

ALTIMMUNE, INC.

By: /s/ William Enright
Name: William Enright
Title: Chief Executive Officer

Exhibit 31.1

Certification of Principal Executive Officer
Pursuant to SEC Rule 13a-14(a)/15d-14(a)

I, William Enright, certify that:

1. I have reviewed this Form 10-Q of Altimmune, Inc. for the period ended June 30, 2017;

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

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

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

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

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

5. The registrant's other certifying officer(s) 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.

Dated: August 11, 2017

/s/ William Enright
Name: William Enright
Title: President and Chief Executive Officer (principal executive officer)

Exhibit 31.2

Certification of Principal Financial Officer
Pursuant to SEC Rule 13a-14(a)/15d-14(a)

I, Elizabeth A Czerepak, certify that:

1. I have reviewed this Form 10-Q of Altimmune, Inc. for the period ended June 30, 2017;

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

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

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

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

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

5. The registrant's other certifying officer(s) 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.

Dated: August 11, 2017

/s/ Elizabeth A. Czerepak

Name: Elizabeth A Czerepak
Title: Chief Financial Officer and Executive Vice President of Corporate Development (principal financial and accounting officer)

Exhibit 32.1

Certification Pursuant to Section 1350 of Chapter 63
of Title 18 of the United States Code

In connection with the Quarterly Report on Form 10-Q of Altimmune, Inc. (the "Company") for the period ended June 30, 2017, as filed with the Securities and Exchange Commission (the "Report"), I, William Enright, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934.

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

/s/ William Enright
William Enright
President and Chief Executive Officer
August 11, 2017

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

This certification is being furnished pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section. This certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.

Exhibit 32.2

Certification Pursuant to Section 1350 of Chapter 63
of Title 18 of the United States Code

In connection with the Quarterly Report on Form 10-Q of Altimmune, Inc. (the "Company") for the period ended June 30, 2017, as filed with the Securities and Exchange Commission (the "Report"), I, Elizabeth A. Czerepak, Chief Financial Officer and Executive Vice President of Corporate Development of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934.

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

/s/ Elizabeth A. Czerepak
Elizabeth A. Czerepak
Chief Financial Officer and Executive Vice President of
Corporate Development
August 11, 2017

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

This certification is being furnished pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section. This certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.