UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON D.C. 20549

FORM 10-Q

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

FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 30, 2018

OR

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

FOR THE TRANSITION PERIOD FROM ____ TO ____.

COMMISSION FILE NUMBER: 001-37861

MABVAX THERAPEUTICS HOLDINGS, INC.

(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

DELAWARE	**93-0987903**
(STATE OR OTHER JURISDICTION OF INCORPORATION OR ORGANIZATION)	**(I.R.S. EMPLOYER IDENTIFICATION NO.)**

11535 Sorrento Valley Road, Suite 400, San Diego, CA 92121
(ADDRESS OF PRINCIPAL EXECUTIVE OFFICES INCLUDING ZIP CODE)

(858) 259-9405
(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 every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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	☐	Smaller reporting company	☒
Emerging growth company	☐		

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

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

The number of shares of registrant's common stock outstanding as of November 13, 2018 was 9,254,582.

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NOTE ABOUT FORWARD-LOOKING STATEMENTS

This quarterly report on Form 10-Q ("Quarterly Report") contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, contained in this Quarterly Report are, or may be deemed to be, forward-looking statements. Words such as, but not limited to, "anticipate," "intend," "plan," "continue," "seek," "believe," "project," "estimate," "expect," "potential," "future," "likely," "may," "should," "could," "would," "will," and similar expressions or phrases, or the negative of those expressions or phrases, are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Although we believe we have a reasonable basis for each forward-looking statement contained in this Quarterly Report, we caution you that these statements are based on our projections of the future that are subject to known and unknown risks and uncertainties and other factors that may cause our actual results, level of activity, performance or achievements expressed or implied by these forward-looking statements, to differ. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including, among other things:

- Our ability to raise additional funds to finance our operations and remain a going concern;
- Whether the Securities and Exchange Commission ("SEC") Action (as defined in Item 1 of Part II of this Quarterly Report) could be concluded in a manner adverse to the Company and members of its leadership team;
- Our past inability to have certain of our previously filed registration statements declared effective and whether any future registration statements we may in the future file will be reviewed or declared effective, generally or during the pendency of the SEC Action;
- Our limited number of employees to manage and operate our business and the necessity for these employees to devote substantial time to matters relating to the SEC Action, which could materially harm our business;
- Our ability to calculate beneficial ownership of our common stock held by our investors;
- Our ability to conduct clinical trials or to meet any regulatory conditions placed on our clinical trials;
- Our ability to obtain desirable results from clinical trials of our product candidates; and
- Our ability to obtain regulatory approval for the commercialization of any of our product candidates.

This list is not an exhaustive list of the factors that may affect any of our forward-looking statements. These and other factors should be considered carefully, and readers should not place undue reliance on our forward-looking statements.

You should also carefully read the risk factors described under Item 1A of Part II of this Quarterly Report and under Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2017 as originally filed with the SEC on April 2, 2018 and amended on Form 10-K/A as filed with the SEC on October 15, 2018. You are advised to consult any further disclosures we make on related subjects in our subsequent Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, press releases and our website. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. The forward-looking statements contained in this Quarterly Report are made as of the date of this Quarterly Report, and we do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

Our current product candidates are undergoing clinical development and have not been approved by the United States Food and Drug Administration ("FDA") or any comparable foreign regulatory authority. These product candidates have not been, nor may they ever be, approved by any regulatory agency nor marketed anywhere in the world.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements.

MABVAX THERAPEUTICS HOLDINGS, INC.
Condensed Consolidated Balance Sheets

	September 30, 2018 (Unaudited)	December 31, 2017 Note 1
Assets		
Current assets:		
Cash and cash equivalents	$ 951,751	$ 885,710
Prepaid expenses	341,511	150,462
Other current assets	141,872	171,346
Total current assets	1,435,134	1,207,518
Property and equipment, net	457,526	578,206
Goodwill	6,826,003	6,826,003
Other assets	178,597	178,597
Total assets	$ 8,897,260	$ 8,790,324
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 2,447,175	$ 1,090,904
Accrued compensation	311,162	311,675
Accrued clinical operations and site costs	2,106,295	1,669,201
Accrued lease termination fee	590,504	590,504
Other accrued expenses	442,210	404,923
Interest payable	31,027	39,373
Current portion of notes payable	1,822,062	1,681,876
Current portion of capital lease payable	18,943	17,810
Total current liabilities	7,769,378	5,806,266
Non-current liabilities:		
Non-current portion of notes payable, net	813,039	1,621,483
Non-current portion of capital lease payable	31,504	45,857
Other non-current liabilities	240,781	186,278
Total non-current liabilities	1,085,324	1,853,618
Total liabilities	8,854,702	7,659,884
Commitments and contingencies (Note 11)		
Stockholders' equity:		
Series D convertible preferred stock, $0.01 par value, 1,000,000 shares authorized, 44,104 shares issued and outstanding as of September 30, 2018 and December 31, 2017, with a liquidation preference of $441	441	441
Series E convertible preferred stock, $0.01 par value, 100,000 shares authorized, 33,333 shares issued and outstanding as of September 30, 2018 and December 31, 2017, with a liquidation preference of $333	333	333
Series I convertible preferred stock, $0.01 par value, 1,968,664 shares authorized, 645,640 and 798,460 shares issued and outstanding as of September 30, 2018 and December 31, 2017, respectively, with a liquidation preference of $6,456 and $7,984 as of September 30, 2018 and December 31, 2017, respectively	6,456	7,984
Series J convertible preferred stock, $0.01 par value, 3,400 shares authorized, 772.73 shares issued and outstanding as of September 30, 2018 and December 31, 2017, with a liquidation preference of $531,252	8	8
Series K convertible preferred stock, $0.01 par value, 65,000 shares authorized, 63,150 shares issued and outstanding as of September 30, 2018 and December 31, 2017, with a liquidation preference of $632	632	632
Series L convertible preferred stock, $0.01 par value, 58,000 shares authorized, 45,500 and 58,000 shares issued and outstanding as of September 30, 2018, and December 31, 2017, respectively, with a liquidation preference of $4,550,000 and $5,800,000 as of September 30, 2018 and December 31, 2017, respectively	455	580
Series M convertible preferred stock, $0.01 par value, 10,000 shares authorized, 5,000 and no shares issued and outstanding as of September 30, 2018 and December 31, 2017, respectively, with a liquidation preference of $1,500,000 and $0 as of September 30, 2018 and December 31, 2017, respectively	50	0
Series N convertible preferred stock, $0.01 par value, 20,000 shares authorized, 5,363.64 and no shares issued and outstanding as of September 30, 2018 and December 31, 2017, respectively, with a liquidation preference of $53.64 and $0 as of September 30, 2018 and December 31, 2017, respectively	54	0
Series O convertible preferred stock, $0.01 par value, 20,000 shares authorized, 10,605.56 and no shares issued and outstanding as of September 30, 2018 and December 31, 2017, respectively, with		

a liquidation preference of $106.06 and $0 as of September 30, 2018 and December 31, 2017, respectively	106	0
Common stock, $0.01 par value, 150,000,000 shares authorized, 9,254,582 and 6,862,928 shares issued and outstanding as of September 30, 2018 and December 31, 2017, respectively	92,546	68,629
Additional paid-in capital	118,291,361	112,105,470
Accumulated deficit	(118,349,884)	(111,053,637)
Total stockholders' equity	42,558	1,130,440
Total liabilities and stockholders' equity	$ 8,897,260	$ 8,790,324

See Accompanying Notes to Unaudited Condensed Consolidated Financial Statements

MABVAX THERAPEUTICS HOLDINGS, INC.
Condensed Consolidated Statements of Operations
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	**2017**	**2018**	**2017**
Revenues:				
License agreements	$ 4,000,000	$ —	$ 4,700,000	$ —
Total revenues	4,000,000	—	4,700,000	—
Cost of revenues	785,000	—	785,000	—
Gross Profit	3,215,000	—	3,915,000	—
Operating costs and expenses:				
Research and development	199,367	1,017,061	2,915,709	6,168,125
General and administrative	2,520,950	1,831,629	6,409,491	7,513,621
Total operating costs and expenses	2,720,317	2,848,690	9,325,200	13,581,746
Income/(loss) from operations	494,683	(2,848,690)	(5,410,200)	(13,681,746)
Interest and other expense	(154,002)	(231,471)	(497,868)	(743,137)
Net income (loss)	340,681	(3,080,161)	(5,908,068)	(14,424,883)
Deemed dividend on inducement shares	—	—	(1,388,179)	(5,220,000)
Deemed dividend on incentive shares	—	(3,120,000)	—	(3,120,000)
Deemed dividend on warrant reprice	—	—	—	(19,413)
Net income (loss) allocable to common stockholders	$ 340,681	$ (6,200,161)	$ (7,296,247)	$(22,784,296)
Basic net income (loss) per share	$ 0.04	$ (1.62)	$ (0.81)	$ (8.04)
Diluted net income (loss) per share	$ 0.02	$ (1.62)	$ (0.81)	$ (8.04)
Shares used in calculation of net income (loss) per share				
Basic	9,253,880	3,830,280	8,983,980	2,834,692
Diluted	17,123,742	3,830,280	8,983,980	2,834,692

See Accompanying Notes to Condensed Consolidated Financial Statements

MABVAX THERAPEUTICS HOLDINGS, INC.
Condensed Consolidated Statement of Stockholders' Equity
For the Nine Months Ended September 30, 2018
(Unaudited)

	Series D through O Convertible Preferred Stock		Common Stock		Additional Paid-in	Accumulated	Total Stockholders'
	Shares	Amount	Shares	Amount	Capital	Deficit	Equity
Balance at December 31, 2017	997,820	$ 9,978	6,862,928	$ 68,629	$112,105,470	$(111,053,637)	$1,130,440
Issuance of common stock, Series M Convertible Preferred Stock and warrants in connection with February 2018 financing	5,000	50	555,557	5,556	2,694,394	—	2,700,000
Issuance of common stock, Series N Convertible Preferred Stock in connection with May 2018 financing	5,364	54	218,182	2,182	827,764	—	830,000
Issuance of inducement shares of Series O Convertible Preferred Stock in connection with May 2018 financing	10,606	106	—	—	(106)	—	—
Deemed dividends on inducement shares, May 2018	—	—	—	—	1,388,179	(1,388,179)	—
Conversion of Series I Preferred Stock to common stock	(152,820)	(1,528)	50,940	509	1,019	—	—
Conversion of Series L Preferred Stock to common stock	(12,500)	(125)	694,445	6,944	(6,819)	—	—
Issuance of whole in lieu of fractional shares resulting from reverse split in February 2018	—	—	50,991	510	(510)		—
Common stock issued upon vesting of restricted stock units in January 2018, net of payroll taxes	—	—	797,977	7,980	(7,980)	—	—
Common stock issued upon vesting of restricted stock units in April 2018, net of shares withheld for payroll taxes	—	—	22,061	221	(17,197)	—	(16,976)
Common stock issued upon vesting of restricted stock units in August 2018	—	—	1,501	15	(15)	—	—
Stock-based compensation	—	—	—	—	1,307,162	—	1,307,162
Net loss	—	—		—	—	(5,908,068)	(5,908,068)
Balance at September 30, 2018	853,470	$ 8,535	9,254,582	$ 92,546	$118,291,361	$(118,349,884)	$ 42,558

See Accompanying Notes to Unaudited Condensed Consolidated Financial Statements

MABVAX THERAPEUTICS HOLDINGS, INC.
Condensed Consolidated Statements of Cash Flows
(Unaudited)

	Nine Months Ended September 30,	
	2018	**2017**
Operating activities		
Net loss	$ (5,908,068)	$(14,424,883)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	120,680	122,315
Stock-based compensation	1,307,162	4,516,372
Issuance of restricted stock for services	—	236,666
Amortization and accretion related to notes payable	190,729	309,213
Increase (decrease) in cash from changes in operating assets and liabilities:		
Other receivables	29,474	(7,061)
Prepaid expenses and other	(189,916)	(62,672)
Accounts payable	1,356,273	403,210
Accrued clinical operations and site costs	437,094	283,864
Accrued compensation	(513)	(28,307)
Other accrued expenses	36,648	(51,649)
Net cash used in operating activities	(2,620,437)	(8,702,932)
Investing activities		
Purchases of property and equipment	—	(21,072)
Net cash used in investing activities	—	(21,072)
Financing activities		
February 2018 private placement, net of issuance costs	2,700,000	—
May 2018 and 2017 private placements, net of issuance costs	830,000	820,571
Proceeds from issuance of common stock and Series G Preferred Stock, Net of costs, May 2017	—	3,647,391
Proceeds from issuance of common stock, net of costs, August 2017	—	125,000
Proceeds from issuance of Series J Preferred Stock, net of costs, August 2017	—	1,189,417
Proceeds from issuance of common stock, net of costs, September 2017	—	1,852,361
Proceeds from issuance of common stock, net of costs, September 2017	—	1,215,000
Principal payments on notes payable to Oxford Finance	(833,333)	(972,223)
Principal payments on financed insurance policies	21,140	(69,240)
Principal payments on capital lease	(14,353)	(10,785)
Purchase of vested employee stock in connection with tax withholding obligation	(16,976)	—
Net cash provided by financing activities	2,686,478	7,797,492
Net change in cash and cash equivalents	(66,041)	(926,512)
Cash and cash equivalents at beginning of period	885,710	3,979,290
Cash and cash equivalents at end of period	$ 951,751	$ 3,052,778
Supplemental disclosures:		
Cash paid during the period for income taxes	$ 1,900	$ 1,600
Cash paid during the period for interest on notes payable and the capital lease	$ 317,391	$ 302,256
Supplemental disclosures of non-cash investing and financing information:		
Deemed dividend on issuance of inducement shares	$ 1,388,179	$ 5,220,000
Deemed dividend on issuance of incentive shares	$ —	$ 3,120,000
Conversion of preferred stock to common stock – Series D	$ —	$ 3,981
Conversion of preferred stock to common stock – Series I	$ 509	$ 3,067
Conversion of preferred stock to common stock – Series J	$ —	$ 5,227
Conversion of preferred stock to common stock – Series L	$ 6,944	$ —
Fair value of repricing warrants issued in previous financing	$ —	$ 19,413
Common stock issued upon vesting of RSUs	$ 8,201	$ —

See Accompanying Notes to Unaudited Condensed Consolidated Financial Statements

1. Nature of Business and Basis of Presentation.

We are a Delaware corporation, originally incorporated in 1988 under the name "Terrapin Diagnostics, Inc." in the State of Delaware. In 1998, we changed our corporate name to "Telik, Inc." and changed our name again to "MabVax Therapeutics Holdings, Inc." in 2014. Unless the context requires otherwise, references to "we," "our," "us," "MabVax" or the "Company" in this Quarterly Report on Form 10-Q for the quarter ended September 30, 2018 (this "Quarterly Report") mean MabVax Therapeutics Holdings, Inc. on a condensed consolidated financial statement basis with our wholly-owned subsidiary, MabVax Therapeutics, Inc.

Nature of Business – About Us

MabVax Therapeutics Holdings, Inc. is a clinical-stage biotechnology company with a fully human antibody discovery platform focused on the rapid translation into clinical development of products to address unmet medical needs in the treatment of cancer and pancreatitis. We discovered a pipeline of human monoclonal antibody product candidates based on the protective immune responses generated by patients who have been vaccinated against targeted cancers. Our therapeutic vaccine product candidates under development were discovered at Memorial Sloan Kettering Cancer Center ("MSK") and are exclusively licensed to us as well as exclusive rights to blood samples from patients who were vaccinated with the same licensed vaccines. We operate in only one business segment.

Our lead development product, MVT-5873, is a fully human IgG1 monoclonal antibody (mAb) that targets sialyl Lewis A (sLea), an epitope on CA19-9. MVT-5873 is currently in Phase 1 clinical trials as a therapeutic agent for patients with pancreatic cancer and other CA19-9 positive tumors. CA19-9 is expressed in over 90% of pancreatic cancers and in other diseases including pancreatitis. CA19-9 plays an important role in tumor adhesion and metastasis and is a marker of an aggressive cancer phenotype. CA19-9 also has an important role in the biological pathways that can result in pancreatitis. CA19-9 serum levels are considered a valuable adjunct in the diagnosis, prognosis and treatment monitoring of pancreatic cancer and now pancreatitis. With our collaborators including MSK, Sarah Cannon Research Institute, Honor Health and Imaging Endpoints, we have treated more than 56 patients with either our therapeutic antibody designated as MVT-5873 or our PET imaging diagnostic product designated as MVT-2163 in Phase 1 clinical studies, and demonstrated early safety, specificity for the target and a potential efficacy signal. The Company also has a radioimmunotherapy product, designated as MVT-1075, that is also in Phase 1 clinical development. For additional information, please visit the Company's website, www.mabvax.com. Information on the Company's website is not incorporated herein.

Studies conducted by Cold Spring Harbor Laboratories have demonstrated that antibodies capable of binding to CA19-9 and blocking the downstream biological pathways of pancreatitis have a positive effect on ameliorating the disease. Combining the preclinical science supporting the use of the CA19-9 blocking antibodies in the treatment of pancreatitis with the clinically validated data and supplies of MVT-5873 already available gives MabVax the opportunity, assuming adequate funding, to move quickly into the clinic in a mid-stage proof of concept clinical trial in the near-term.

The Company completed a preclinical asset sale and license agreement with Boehringer Ingelheim International GmbH ("Boehringer Ingelheim") in July 2018, and a license agreement for a cancer vaccine to Y-mAbs Therapeutics, Inc. in June 2018. The Company received nearly $5 million in upfront payments from these two transactions to begin the third quarter, with an additional $7.6 million in downstream milestones the Company may receive based either on reaching an anniversary date of entering the agreement, provided the agreement is not canceled before a milestone has been earned or due, or upon reaching a milestone.

We have incurred net losses since inception and expect to incur substantial losses for the foreseeable future as we continue our research, development and clinical activities. To date, we have funded operations primarily through revenues earned from asset sale and license agreements, proceeds from the sale of common and preferred stock, government grants, the issuance of debt, the issuance of common stock in lieu of cash for services, payments from collaborators, and interest income. The process of developing products will require significant additional research and development, preclinical testing and clinical trials, as well as regulatory approvals. We expect these activities, together with general and administrative expenses, to result in substantial operating losses for the foreseeable future. We will not receive substantial revenue unless we or our collaborative partners complete clinical trials, obtain regulatory approvals and successfully commercialize one or more product candidates; or we license our technology after achieving one or more milestones of interest to a potential partner.

Reverse Stock Splits

On August 16, 2016, we filed a certificate of amendment to our Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware to effectuate a reverse stock split of our issued and outstanding common stock on a 1-for-7.4 basis, effective on August 16, 2016 (the "2016 Reverse Stock Split"). On February 14, 2018, we filed a certificate of amendment to our Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware to effectuate another reverse stock split of our issued and outstanding common stock on a 1-for-3 basis, effective on February 16, 2018 (the "2018 Reverse Stock Split"; collectively with the 2016 Reverse Stock Split, the "Reverse Stock Splits"). All share and per share amounts, and number of shares of common stock into which each share of preferred stock will convert, in the financial statements and notes thereto have been retroactively adjusted for all periods presented to give effect to the Reverse Stock Splits, including rounding for fractional shares and reclassifying any amount equal to the reduction in par value of common stock to additional paid-in capital.

Delaware Order Granting Petition for Relief

On September 20, 2018, the Court of Chancery of the State of Delaware (the "Court") entered an order validating (i) issuances of common stock upon conversions of the Company's preferred stock occurring between June 30, 2014 and February 12, 2018, and (ii) stockholder approval of corporate actions presented to the Company's stockholders from June 30, 2014 to February 12, 2018. In so doing, the Court granted the Company's Verified Petition for Relief Under *8 Del. C. § 205* (the "Delaware Petition") captioned *In re: MabVax Therapeutics Holdings, Inc.*, filed on July 27, 2018, in order to rectify the uncertainty regarding whether shares of our common stock were validly issued upon conversion of our preferred stock from June 30, 2014 to February 12, 2018. The Delaware Petition and the Court's order granting the Delaware Petition are discussed further in the Section below titled, "Court Validation of Previously Issued Shares of Common Stock upon Conversion of Preferred Stock."

Basis of Presentation

The balance sheet data at December 31, 2017, was derived from audited financial statements at that date. It does not include, however, all the information and notes required by accounting principles generally accepted in the United States of America ("GAAP") for complete financial statements.

The accompanying unaudited condensed consolidated financial statements were prepared using GAAP for interim financial information and the instructions to Regulation S-X. While these statements reflect all normal recurring adjustments, which are, in the opinion of management, necessary for a fair presentation of the results of the interim period, they do not include all information or notes required by GAAP for annual financial statements and should be read in conjunction with the audited financial statements of MabVax Therapeutics Holdings, Inc. for the year ended December 31, 2017, included in our Annual Report on Form 10-K filed with the SEC on April 2, 2018 and amended on Form 10-K/A as filed with the SEC on October 15, 2018. These quarterly results are not necessarily indicative of future results.

Use of Estimates

The preparation of condensed consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements and the reported amounts of expenses during the reporting period. Management believes that these estimates are reasonable; however, actual results may differ from these estimates.

Fair Value Measurements

The Company had no assets or liabilities that were measured using quoted prices for similar assets and liabilities or significant unobservable inputs (Level 2 and Level 3 assets and liabilities, respectively) as of September 30, 2018 and December 31, 2017. The carrying value of cash held in money market funds of $864,110 and $1,196 as of September 30, 2018 and December 31, 2017, respectively, is included in cash and cash equivalents and approximates market values based on quoted market prices (Level 1 inputs).

Concentration of Credit Risk

Credit risk represents the risk that the Company would incur a loss if counterparties failed to perform pursuant to the terms of their agreements. Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash and cash equivalents. Cash and cash equivalents consist of money market funds with major financial institutions in the United States. These funds may be redeemed upon demand and, therefore, bear minimal risk. The Company does not anticipate any losses on such balances.

Consideration of Impairment of Goodwill

The Company maintains a goodwill balance of $6,826,003 on its balance sheet as of September 30, 3018 and December 31, 2017, and tests for impairment at least annually and whenever there has been a material change in the Company by applying GAAP principles related to ASC 350 *Intangibles – Goodwill and Other* (ASC 350). Based on a qualitative analysis of the Company's products in the pipeline as of September 30, 2018, the $4.0 million in revenue earned during the quarter, and a potential new indication for the Company's lead antibody program, MVT-5873, for the treatment of pancreatitis, the Company concluded there was no goodwill impairment as of September 30, 2018. The goodwill was established in connection with the merger of MabVax Therapeutics, Inc. a Delaware corporation, with a subsidiary of the Company on July 8, 2014, pursuant to an Agreement and Plan of Merger, dated May 12, 2014, by and among the Company, a subsidiary of the Company and MabVax Therapeutics, Inc. as amended June 30, 2014 and July 7, 2014 (the "Merger"), whereby MabVax Therapeutics, Inc. is the surviving company in the Merger, as a wholly-owned subsidiary of the Company.

Revenue Recognition

Effective January 1, 2018, the Company adopted Accounting Standards Codification, or ASC, Topic 606, *Revenue from Contracts with Customers* (Topic 606), using the full retrospective transition method. Under this method, the Company would have been required to revise its financial statements, if applicable, for the years ended December 31, 2016 and 2017, and applicable interim periods within those years, as if Topic 606 had been effective for those periods. However, Topic 606 did not have any impact on the Company's revenue recognition upon adoption. This standard applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, collaboration arrangements and financial instruments. Under Topic 606, an entity recognizes revenue when its customer obtains control of promised goods or services in an amount that reflects the consideration which the entity expects to receive in exchange for those goods and services. To determine revenue recognition for arrangements that an entity determines are within the scope of Topic 606, the entity performs the following five steps: (i) identify the contract(s) with the customer(s); (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that the entity will collect the consideration it is entitled to in exchange for the goods and services it transfers to the customer. At contract inception, the Company assesses the goods or services promised within each contract that falls under the scope of Topic 606, determines those that are performance obligations and assesses whether each promised good or service is distinct. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

License and Other Revenues

The Company enters into licensing agreements which are within the scope of Topic 606, under which it licenses certain of its product candidates' rights to third parties. The terms of these arrangements typically include payment of one or more of the following: non-refundable, up-front license fees; development, regulatory and commercial milestone payments; and royalties on Gross Profit of the licensed product, which will be classified as royalty revenues, if and when earned.

In determining the appropriate amount of revenue to be recognized as it fulfills its obligation under each of its agreements, the Company performs the five steps described above. As part of the accounting for these arrangements, the Company must develop assumptions that require judgment to determine the stand-alone selling price, which may include forecasted revenues, development timelines, reimbursement of personnel costs, discount rates and probabilities of technical and regulatory success.

Licensing of Intellectual Property – If the license to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenue from non-refundable, up-front fees allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are bundled with other performance obligations, the Company utilizes judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from non-refundable, up-front fees. The Company evaluates the measure of progress each reporting period, and, if necessary, adjusts the measure of performance and related revenue recognition.

Milestone Payments – At the inception of each arrangement that includes development milestone payments, the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal will not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the control of the Company or the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis, for which the Company recognizes revenue as or when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, the Company re-evaluates the probability of achievement of such development milestones and any related constraint and, if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect license, collaboration and other revenues and earnings in their period of adjustment. To date, the Company has not recognized any milestone payments, because the milestones are not within the control of the Company and the technology is at an early stage of development, or the licensee has the ability to terminate the agreement before the milestone payment is due.

Royalties – For arrangements that include sales-based royalties, including milestone payments based on the level of sales, and for which the license is deemed to be the predominant item to which royalties relate, the Company recognizes revenue at the later of (i) when the related sales occur or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue from its license agreements.

Accrued Liabilities

The Company is required to estimate accrued liabilities as part of the process of preparing its financial statements. The estimation of accrued liabilities involves identifying services that have been performed on the Company's behalf, and then estimating the level of service performed and the associated cost incurred for such services as of each balance sheet date. Accrued liabilities include professional service fees, such as for lawyers and accountants, contract service fees, such as those under contracts with clinical monitors, data management organizations and investigators in conjunction with clinical trials, and fees to contract manufacturers in conjunction with the production of clinical materials. Pursuant to the Company's assessment of the services that have been performed, the Company recognizes these expenses as the services are provided. Such assessments include: (i) an evaluation by the project manager of the work that has been completed during the period; (ii) measurement of progress prepared internally and/or provided by the third-party service provider; (iii) analyses of data that justify the progress; and (iv) the Company's judgment.

Research and Development Costs

Except for payments made in advance of services, research and development costs are expensed as incurred. For payments made in advance, the Company recognizes research and development expense as the services are rendered. Research and development costs primarily consist of salaries and related expenses for personnel, laboratory supplies and raw materials, and sponsored research, Other research and development expenses include fees paid to consultants and outside service providers including clinical research organizations and clinical manufacturing organizations.

Recently Issued Accounting Standards

Adopted Accounting Standards

In May 2014, the FASB issued Topic 606 which amends the guidance for accounting for revenue from contracts with customers. This ASU supersedes the revenue recognition requirements in ASC Topic 605, *Revenue Recognition,* and creates a new Topic 606, *Revenue from Contracts with Customers*. The Company did not have any revenue generating contracts in 2017, therefore, the adoption of this standard had no effect on the financial statement line items that could have been affected by the transition. For further discussion on the adoption of this standard, see "Revenue Recognition" above and Note 10, "Contracts and Agreements."

In January 2017, the FASB issued ASU No. 2017-01, *Business Combinations (Topic 805), Clarifying the Definition of a Business*. The guidance changes the definition of a business to assist entities with evaluating when a set of transferred assets and activities is a business. The new guidance requires an entity to evaluate if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets; if so, the set of transferred assets and activities is not a business. The Company adopted this ASU as of January 1, 2018. The adoption of this ASU had no impact on the Company's financial statements for the three and nine months ended September 30, 2018.

In May 2017, the FASB issued ASU No. 2017-09, *Compensation – Stock Compensation (Topic 718), Scope of Modification Accounting*, which clarifies when a change to the terms or conditions of a share-based payment award must be accounted for as a modification. The new guidance requires modification accounting if the fair value, vesting conditions or classification of the award is not the same immediately before and after a change to the terms and conditions of the award. The Company adopted this ASU on a prospective basis as of January 1, 2018. The adoption of this ASU had no impact on the Company's financial statements for the three and nine months ended September 30, 2018.

In August 2016, the FASB issued ASU No. 2016-15 ("ASU 2016-15"), " *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments*." The standard provides guidance on eight (8) cash flow issues: (1) debt prepayment or debt extinguishment costs; (2) settlement of zero-coupon bonds; (3) contingent consideration payments after a business combination; (4) proceeds from the settlement of insurance claims; (5) proceeds from the settlement of corporate-owned life insurance policies; (6) distributions received from equity method investees; (7) beneficial interests in securitization transactions; and (8) separately identifiable cash flows and application of the predominance principle. ASU 2016-15 addresses how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The Company adopted this ASU effective January 1, 2018. The adoption of this new standard did not have a material impact on our condensed consolidated financial statements.

Accounting Standards Not Yet Adopted

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*, which supersedes existing guidance on accounting for leases in *Leases (Topic 840)* and generally requires all leases, including operating leases, to be recognized in the statement of financial position as right-of-use assets and lease liabilities by lessees. The provisions of ASU 2016-02 are to be applied using a modified retrospective approach and are effective for reporting periods beginning after December 15, 2018; early adoption is permitted. The Company plans to elect the transition option provided under ASU 2018-11, which will not require adjustments to comparative periods nor require modified disclosures in those comparative periods. Upon adoption, the Company expects to elect the transition package of practical expedients permitted within the new standard, which among other things, allows the carryforward of the historical lease classification. Based on its anticipated election of practical expedients, the Company anticipates the recognition of right of use assets and related lease liabilities on its balance sheets related to its leases. The Company intends on engaging a professional services firm to assist in the implementation of ASC 842, and to analyze the impact of adopting ASC 842 on the Company's statements of income and balance sheets.

In June 2018, the FASB issued ASU No. 2018-07, *Compensation – Stock Compensation (Topic 718): Improvements to Nonemployee Share-based Payment Accounting*, to simplify the accounting for share-based payments to nonemployees by aligning it with the accounting for share-based payments to employees, with certain exceptions. The provisions of ASU 2018-07 are effective for reporting periods beginning after December 15, 2018, including interim periods within that fiscal year; early adoption is permitted, but no earlier than a company's adoption date of Topic 606. Upon transition, the Company will be required to measure these nonemployee awards at fair value as of the adoption date. The Company had not early adopted this ASU as of September 30, 2018, but plans on adopting this ASU for its reporting period beginning January 1, 2019. The Company is currently evaluating the effect that this ASU will have on its financial statements.

In June 2016, the FASB issued ASU No. 2016-13, "*Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*." This ASU requires instruments measured at amortized cost to be presented at the net amount expected to be collected. Entities are also required to record allowances for available-for-sale debt securities rather than reduce the carrying amount. This ASU is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. We expect the adoption of this new standard will not have a material impact on our condensed consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04, "*Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*." This ASU eliminates Step 2 from the goodwill impairment test. Instead, an entity should recognize an impairment charge for the amount by which the carrying value exceeds the reporting unit's fair value, not to exceed the total amount of goodwill allocated to that reporting unit. This ASU is effective for annual or any interim goodwill impairment tests in fiscal years beginning after December 15, 2019. We expect the adoption of this new standard will not have a material impact on our condensed consolidated financial statements.

With the exception of the new standards discussed above, there have been no new accounting pronouncements that have significance, or potential significance, to the Company's financial statements.

2. Liquidity and Going Concern.

The accompanying condensed consolidated financial statements have been prepared on the going concern basis, which assumes that the Company will continue to operate as a going concern and which contemplates the realization of assets and the satisfaction of liabilities and commitments in the normal course of business. As reflected in the accompanying condensed consolidated financial statements, the Company had a net loss of $5,908,068, net cash used in operating activities of $2,620,437, net cash used in investing activities of $0, and net cash provided by financing activities of $2,686,478 for the nine months ended September 30, 2018. As of September 30, 2018, the Company had $951,751 in cash and cash equivalents, a working capital deficit of $6,334,244, an accumulated deficit of $118,349,884, and stockholders' equity of $42,558. The Company also has significant debt payments due within the next twelve months.

Overview of 2018 Private Placements

Between February 2 and February 10, 2018, the Company entered into separate purchase agreements with investors pursuant to which the Company sold (i) shares of its common stock, (ii) shares of its convertible preferred stock, and (iii) warrants to purchase shares of common (the "February 2018 Private Placements"). From April 30 to May 2, 2018, the Company entered into separate purchase agreements with investors pursuant to which we agreed to sell shares of its common stock and convertible preferred stock (the "May 2018 Private Placements"). No financial advisor was used in connection with the February 2018 Private Placements nor the May 2018 Private Placements.

The securities issued in connection with the February 2018 Private Placements and the May 2018 Private Placements were offered and sold solely to accredited investors in reliance on the exemption from registration afforded by Rule 506 of Regulation D and Section 4(a)(2) of the Securities Act. The Company entered into separate registration rights agreements with each of the investors in the February 2018 Private Placements and the May 2018 Private Placements, pursuant to which the Company agreed to undertake to file a registration statement to register the resale of the shares of common stock and the shares of common stock underlying the warrants and preferred stock. The Company also agreed to use reasonable best efforts to cause such registration statement to be declared effective and to maintain the effectiveness of the registration statement until all of such shares of common stock have been sold or are otherwise able to be sold pursuant to Rule 144 under the Securities Act, without any restrictions.

February 2018 Private Placements

In connection with the February 2018 Private Placements, the Company sold (i) an aggregate of 555,557 shares of its common stock for an aggregate purchase price of $1,250,000, or $2.25 per share, (ii) 5,000 shares of our newly designated 0% Series M Convertible Preferred Stock (the "Series M Preferred Stock") for an aggregate purchase price of $1,500,000, or $300.00 per share, and (iii) warrants to purchase up to an aggregate of 855,561 shares of common stock each with an exercise price of $2.70 per share. The net proceeds of the February 2018 Private Placements were $2,700,000 after transaction costs of $50,000.

May 2018 Private Placements

In connection with the May 2018 Private Placements, the Company agreed to sell (i) 218,182 shares of common stock at an aggregate purchase price of $240,000, or $1.10 per share, and (ii) 5,363.64 shares of newly designated 0% Series N Convertible Preferred Stock (the "Series N Preferred Stock") at an aggregate purchase price of $590,000, or $110.00 per share. The following investors in the May 2018 Private Placements also invested in the February 2018 Private Placements (the "Prior Investors"): GRQ Consultants Inc., Roth 401K FBO Renee Honig; GRQ Consultants Inc., Roth 401K FBO Barry Honig; Melechdavid, Inc.; Grander Holdings Inc. 401K; Robert S. Colman Trust UDT 3/13/85; Ben Brauser; Joshua A. Brauser; Daniel A. Brauser; Gregory Aaron Brauser; Erick E. Richardson; and Ronald B. Low.

Under the terms of the May 2018 Private Placements, we were required to offer an aggregate of 12,777.77 shares (the "May 2018 Inducement Shares") of newly designated 0% Series O Preferred Stock (the "Series O Preferred Stock") to investors who previously purchased securities in the February 2018 Private Placements and who also purchased securities in the May 2018 Private Placements with an aggregate purchase price of at least 40% of their investment amounts in the February 2018 Private Placements. Based on the closing of the offering, and participation of the Prior Investors who invested an aggregate of $830,000 (the "May 2018 Inducement Investors"), the Company issued an aggregate of 10,605.56 May 2018 Inducement Shares in the form of Series O Preferred Stock convertible into an aggregate of 1,060,556 shares of common stock. The May 2018 Private Placements closed on May 15, 2018, with the Company receiving gross proceeds totaling $830,000.

Plans for Continuing to Fund the Company's Losses from Operations

We plan to continue to fund the Company's losses from operations and capital funding needs through equity financings in the form of common stock and preferred stock, licensing agreements, asset sales, strategic collaborations, government grants, issuance of common stock in lieu of cash for services, debt financings or other arrangements. Further, to extend availability of existing cash available for our programs for achieving milestones or a strategic transaction, in mid-2017 we began reducing personnel from twenty-five (25) full time employees to six (6) as of November 13, 2018, and reduced other operating expenses following the completion of two (2) Phase 1a clinical trials of our lead antibody product candidate, HuMab 5B1, which has enabled us to reduce our expenditures on clinical trials. We plan to continue funding Phase 1 clinical trials of our product candidate MVT-5873 in cancer patients, MVT-2163 as a diagnostic agent in pancreatic cancer patients, and MVT-1075 as a radioimmunotherapy agent for the treatment of various cancers, preclinical testing of follow-on antibody candidates, investor and public relations, SEC compliance efforts, and the general and administrative expenses associated with each of these activities, and prepare for a mid-stage proof-of-concept clinical trial of MVT-5873 as a treatment for pancreatitis. We will also support research efforts and continued Phase 1 clinical development by MSK of our Positron-emission tomography ("PET") imaging agent MVT-2163 under an R01 Research Grant provided by the National Institutes of Health ("NIH") to MSK in April 2018, with the bulk of the costs of the research and clinical development being borne by the NIH. Although we achieved two strategic transactions in late June 2018 and early July 2018, there can be no assurance that we will be able to achieve additional license and or sales agreements and earn revenues large enough to offset our operating expenses in the future, as discussed further in Management's Discussion and Analysis of Financial Condition and Results of Operations of our Quarterly Report. We cannot be sure that asset sales or licensing agreements can be signed in a timely manner, if any, or that capital funding will be available on reasonable terms, or at all. If we are unable to secure significant asset sales or licensing agreements and adequate additional funding, we may be forced to make additional reductions in spending, incur further cutbacks in personnel, extend payment terms with suppliers, liquidate assets where possible, suspend or curtail planned programs and/or cease our operations entirely. In addition, if the Company does not meet its payment obligations to third parties as they come due, it may be subject to litigation claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

We anticipate the Company will continue to incur net losses into the foreseeable future as we: (i) continue our clinical trial of MVT-5873 in cancer patients, (ii) continue our clinical trial for the development of MVT-1075 as a radioimmunotherapy, (iii) prepare for a mid-stage proof-of-concept clinical trial of MVT-5873 as a treatment for pancreatitis, to be initiated in early 2019, and (iv) continue operations as a public company. Based on receipt of $2.7 million net of transaction costs in February 2018, an additional $830,000 from a financing in May 2018, and receipt of $700,000 from an upfront payment under a sublicense agreement with Y-mAbs Therapeutics, Inc. ("Y-mAbs") during the first nine months of 2018; and receipt of $4.0 million in gross proceeds from an asset purchase and license agreement with Boehringer Ingelheim International GmbH ("Boehringer Ingelheim") in July 2018, and without any other additional funding or receipt of payments from potential asset sales or licensing agreements, we expect we will have sufficient funds to meet our obligations until December 2018. These conditions give rise to substantial doubt as to the Company's ability to continue as a going concern. Any of these actions could materially harm the Company's business, results of operations, and prospects. The accompanying consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

If the Company raises additional funds by issuing equity securities, substantial dilution to existing stockholders could result. If the Company raises additional funds by incurring debt financing, the terms of the debt may involve significant cash payment obligations as well as covenants and specific financial ratios that may restrict the Company's ability to operate its business.

3. Cash and Cash Equivalents.

We consider all highly liquid investments purchased with original maturities of three months or less to be cash equivalents. The Company limits its exposure to credit loss by holding cash in U.S. dollars or, from time to time, placing cash and investments in U.S. government, agency and government-sponsored enterprise obligations.

4. Fair Value of Financial Instruments.

Our financial instruments consist of cash and cash equivalents and accounts payable, all of which are generally considered to be representative of their respective fair values because of the short-term nature of those instruments.

5. Convertible Preferred Stock, Common Stock and Warrants.

Dividends on Preferred Stock

We immediately recognize the changes in the redemption value on preferred stock as they occur and the carrying value of the security is adjusted to equal what the redemption amount would be as if redemption were to occur at the end of the reporting date based on the conditions that exist as of that date.

No dividends have ever been declared by the Board of Directors of the Company (the "Board of Directors") since our inception on any series of convertible preferred stock.

Overview of Preferred Stock & Beneficial Ownership Blockers

All issued and outstanding shares of the Company's preferred stock have a par value of $0.01 per share and rank prior to any class or series of the Company's common stock as to the distribution of assets upon liquidation, dissolution or winding up of the Company or as to the payment of dividends. The Company must obtain the consent of a majority of the holders of each series of preferred stock before taking any action that materially and adversely affects the rights, preferences, or privileges of the applicable series of preferred stock. Also, the holders of each series of preferred stock are entitled to vote on any matter on which the holders of common stock are entitled to vote. Additionally, the Company must obtain the consent of the holders of the Series E Preferred Stock, Series J Preferred Stock, Series L Preferred Stock, and Series N Preferred Stock (as each of those terms are defined below) prior to increasing or decreasing (other than by conversion) the authorized number of the applicable series of preferred stock or issuing any additional shares of the applicable series of preferred stock.

Generally, the same investors participated in each of the Company's preferred stock offerings such that the same investors own most of the shares of each series of the Company's issued and outstanding preferred stock. Pursuant to terms negotiated in connection with the Company's sales of preferred stock, the certificates of designation for the Company's preferred stock each include a 4.99% and/or 9.99% beneficial ownership conversion blocker. These conversion blockers may be decreased or increased, at the option of each holder, to a percentage not to exceed 9.99% upon written notice to the Company, as further specified in the applicable certificate of designation. The certificate of designation for our Series N Preferred Stock includes a 19.99% blocker provision applicable until stockholders approve issuances of common stock in excess of such amount. The stated values, as applicable, and conversion prices of our preferred stock are subject to adjustment in the event of stock splits, stock dividends, combination of shares and similar recapitalization transactions. The Company's ability to administer the blockers according to their terms depends on group determinations and accurate reporting by outside investors with respect to their own beneficial ownership.

Series D Preferred Stock

As of September 30, 2018 and December 31, 2017, there were 44,104 shares of Series D Convertible Preferred Stock ("Series D Preferred Stock") issued and outstanding, and convertible into an aggregate of 198,667 shares of common stock. As of September 30, 2018, each one share of Series D Preferred Stock is convertible into 4.5045 shares of Common Stock.

Series E Preferred Stock

As of September 30, 2018 and December 31, 2017, there were 33,333 shares of Series E Convertible Preferred Stock ("Series E Preferred Stock") issued and outstanding, and convertible into 173,249 shares of common stock.

The shares of Series E Preferred Stock are convertible into shares of common stock based on a conversion calculation equal to the stated value of such preferred share ($75 per share), plus all accrued and unpaid dividends, if any, on such share of Series E Preferred Stock, as of such date of determination, divided by the conversion price $14.43 per share.

Series I Preferred Stock

As of September 30, 2018 and December 31, 2017, there were 645,640 and 798,460 shares of our Series I Preferred Stock issued and outstanding, and convertible into 215,214 and 266,154 shares of our common stock, respectively. During the nine months ended September 30, 2018, 152,820 shares of Series I Preferred Stock were converted by Grander Holdings, Inc. 401K into 50,940 shares of common stock.

The Series I Preferred Stock has a stated value of $0.01 per share. Each one share of Series I Preferred Stock is convertible into one-third share of common stock.

Series J Preferred Stock

As of September 30, 2018 and December 31, 2017, there were 772.73 shares of our Series J Convertible Preferred Stock ("Series J Preferred Stock") issued and outstanding and convertible into 386,365 shares of our common stock.

The shares of Series J Preferred Stock are convertible into shares of common stock based on a conversion calculation equal to the stated value of the Series J Preferred Stock ($550), plus all accrued and unpaid dividends, if any, on such Series J Preferred Stock, as of such date of determination, divided by the conversion price ($1.10). If we issue or sell common stock, or common equivalent shares, for consideration per share that is less than the conversion price in effect immediately prior to the issuance, then the conversion price in effect immediately prior to such issuance will be adjusted to the lower issuance price, but not be less than $0.10.

Series K Preferred Stock

As of September 30, 2018 and December 31, 2017, there were 63,150 shares of our Series K convertible preferred stock ("Series K Preferred Stock") issued and outstanding, and convertible into 2,105,000 of our common stock.

The shares of Series K Preferred Stock are convertible into shares of common stock based on a conversion calculation equal to the stated value of the Series K Preferred Stock ($0.01) divided by the conversion price ($0.0003).

Series L Preferred Stock

As of September 30, 2018, and December 31, 2017, there were 45,500 and 58,000 shares of our Series L Preferred Stock issued and outstanding, and convertible into 2,527,778 and 3,222,223 shares of our common stock, respectively. During the nine months ended September 30, 2018, 12,500 shares of Series L Preferred Stock were converted into 694,445 shares of common stock by GRQ Consultants, Inc. Roth 401K FBO Renee Honig Trustee, and HS Contrarian Investments, LLC.

The shares of Series L Preferred Stock are convertible into shares of common stock based on a conversion calculation equal to the stated value of the Series L Preferred Stock ($100), plus all accrued and unpaid dividends, if any, on such Series L Preferred Stock, as of such date of determination, divided by the conversion price ($1.80).

Series M Preferred Stock

As of September 30, 2018 and December 31, 2017, there were 5,000 and no shares of our Series M Preferred Stock issued and outstanding, and convertible into 666,667 and no shares of our common stock, respectively.

The shares of Series M Preferred Stock are convertible into shares of common stock based on a conversion calculation equal to the stated value of the Series M Preferred Stock ($300), plus all accrued and unpaid dividends, if any, on such Series M Preferred Stock, as of such date of determination, divided by the conversion price ($2.25).

Series N Preferred Stock

As of September 30, 2018, and December 31, 2017, there were 5,363.64 and no shares of our Series N Preferred Stock issued and outstanding, and convertible into 536,364 and no shares of our common stock, respectively.

The shares of Series N Preferred Stock are convertible into shares of common stock based on a conversion calculation equal to the stated value of the Series N Preferred Stock ($110), plus all accrued and unpaid dividends, if any, on such Series N Preferred Stock, as of such date of determination, divided by the conversion price ($1.10). If we issue or sell common stock, or common equivalent shares, for consideration per share that is less than the conversion price in effect immediately prior to the issuance, then the conversion price in effect immediately prior to such issuance will be adjusted to the lower issuance price, but not be less than $0.10.

Series O Preferred Stock

As of September 30, 2018, and December 31, 2017, there were 10,605.56 and no shares of our Series O Preferred Stock issued and outstanding, and convertible into 1,060,556 and no shares of our common stock, respectively.

The shares of Series O Preferred Stock are convertible into shares of common stock based on a conversion calculation equal to the stated value of the Series O Preferred Stock ($0.01), plus all accrued and unpaid dividends, if any, on such Series O Preferred Stock, as of such date of determination, divided by the conversion price ($0.0001). We are not permitted to issue any shares of common stock upon conversion of the Series O Preferred Stock until our stockholders approve, in accordance with the rules of the Nasdaq Stock Market LLC, the conversion of Series N Preferred Stock authorized on April 26, 2018, or the conversion of Series O Preferred Stock.

Warrants Issued in Connection with February 2018 Private Placements

The warrants issued in the February 2018 Private Placements (the "February 2018 Warrants") are exercisable, at any time on or after the sixth month anniversary of the closing date, at a price of $2.70 per share, subject to adjustment, and expire three years from the initial exercise date. The holders of the February 2018 Warrants may, subject to certain limitations, exercise the February 2018 Warrants on a cashless basis if the shares of common stock issuable upon exercise of the February 2018 Warrants are not registered for resale under the Securities Act within four (4) months of issuance, or between June 2 and June 10, 2018. The Company is prohibited from effecting an exercise of any February 2018 Warrants to the extent that, as a result of any such exercise, the holder would beneficially own more than 9.99% of the number of shares of common stock outstanding immediately after giving effect to the issuance of shares of common stock upon exercise of such February 2018 Warrants. The February 2018 Warrants are not listed or quoted on any securities exchange or other trading market.

Warrants Issued in Connection with October 2015 Public Offering

As of September 30, 2018, and December 31, 2017, warrants to purchase 56,306 shares of common stock previously issued in connection with our public offering closing on October 5, 2015 (the "October 2015 Warrants") were outstanding. The October 2015 Warrants, which had an exercise price of $29.31 per share, expired on September 30, 2018**.**

Consultant Grants

On February 10, 2017, the Company entered into a consulting agreement with MDM Worldwide, pursuant to which MDM Worldwide agreed to provide investor relations services to the Company in consideration for an immediate grant of 6,667 shares of the Company's common stock and a monthly cash retainer of $10,000 a month for ongoing services for a period of one year. The shares granted were fully vested upon grant and the Company recognized the grant date fair value of the shares of $56,600 as investor relations expense upon grant during the first quarter of 2017. The services with MDM Worldwide, which the Company was required to purchase by some investors in connection with prior financings of the Company, were terminated effective June 1, 2018.

On March 7, 2017, the Company entered into a consulting agreement with Jenene Thomas Communications, pursuant to which Jenene Thomas Communications agreed to provide investor relations services to the Company. In consideration for these services, which began on April 1, 2017, we paid a monthly cash retainer of $12,500. Additionally, we issued 6,667 restricted shares of common stock on April 1, 2017, to be vested at 1,667 per quarter over the four quarters of services under the agreement beginning April 1, 2017. The shares granted were vested over a one-year period over which the services were performed and, as such, were amortized over the same period beginning in April 1, 2017. The services with Jenene Thomas Communications terminated effective June 1, 2018.

6. Notes Payable.

Loan and Security Agreement with Oxford Finance, LLC

On January 15, 2016, we entered into a loan and security agreement with Oxford Finance, LLC ("Oxford Finance") pursuant to which we had the option to borrow $10,000,000 in two equal tranches of $5,000,000 each (the "Loan Agreement"). The first tranche of $5,000,000 was funded at close on January 15, 2016 (the "Term A Loans"). The option to fund the second tranche of $5,000,000 (the "Term B Loans") was exercisable upon the Company achieving positive interim data on the Phase 1 HuMab-5B1 antibody trial in pancreatic cancer and successfully uplisting to either the Nasdaq Stock Market or NYSE MKT on or before September 30, 2016. The option for the Term B Loans expired unexercised on September 30, 2016. The interest rate for the Term A Loans is set on a monthly basis at the index rate plus 11.29%, where the index rate is the greater of the 30-day LIBOR rate or 0.21%. Interest is due on the first day of each month, in arrears, calculated based on a 360-day year. The Term A Loans were interest only for the first year after funding, and the principal amount of the loan is amortized in equal principal payments, plus period interest, over the next 36 months. A facility fee of 1.0% or $100,000 was due at closing of the transaction and was earned and paid by the Company on January 15, 2016. The Company is obligated to pay a $150,000 final payment upon completion of the term of the Term A Loans, and this amount is being accreted using the effective interest rate method over the term of the loans. The Term A Loans can be prepaid subject to a graduated prepayment fee, depending on the timing of the prepayment.

Concurrent with the execution of the Loan Agreement, the Company issued warrants to purchase up to 75,075 shares of common stock to Oxford Finance with an exercise price of $16.65 per share. The warrants were immediately exercisable, may be exercised on a cashless basis and expire on January 15, 2021. The Company recorded $607,338 for the fair value of the warrants as a debt discount within notes payable and an increase to additional paid-in capital on the Company's balance sheet. We used the Black-Scholes-Merton valuation method to calculate the value of the warrants. The debt discount is being amortized as interest expense over the term of the loan using the effective interest method.

We granted Oxford Finance a perfected first priority lien on all of the Company's assets with a negative pledge on IP. The Company paid Oxford Finance a good faith deposit of $50,000, which was applied towards the facility fee at closing. The Company agreed to pay all costs, fees and expenses incurred by Oxford Finance in the initiation and administration of the facilities including the cost of loan documentation.

At the initial funding on January 15, 2016, the Company received net proceeds from the Term A Loans of approximately $4,610,000 after fees and expenses. These fees and expenses are being accounted for as a debt discount and classified within notes payable on the Company's condensed consolidated balance sheet. The Company's transaction costs of approximately $390,000 are presented in the condensed consolidated balance sheet as a direct deduction from the carrying amount of the notes payable, consistent with debt discounts. Debt discounts, issuance costs and the final payment are being amortized or accreted as interest expense over the term of the loan using the effective interest method.

The Loan Agreement also contains customary indemnification obligations and customary events of default, including, among other things, our failure to fulfill certain of the Company's obligations under the Loan Agreement, the occurrence of a material adverse change, which is defined as a material adverse change in the Company's business, operations, or condition (financial or otherwise), a material impairment of the prospect of repayment of any portion of the loan, or a material impairment in the perfection or priority of Oxford Finance's lien in the collateral or in the value of such collateral. In the event of default by the Company under the Loan Agreement, Oxford Finance would be entitled to exercise their remedies thereunder, including the right to accelerate payment of the debt, upon which we may be required to repay all amounts then outstanding under the Loan Agreement, which could harm the Company's financial condition.

First Amendment to Loan and Security Agreement

On March 31, 2017, we and Oxford Finance signed the First Amendment to Loan and Security Agreement providing that the payment of principal on the Term A Loans that otherwise would have been due on the March 1, 2017 will be due and payable on May 1, 2017 along with any other payment of principal due on May 1, 2017. We were obligated to pay a fully earned and non-refundable amendment fee of $15,000 to the Collateral Agent (as defined in the Loan Agreement). On May 1, 2017, we paid the principal due on May 1, 2017, along with the $15,000 amendment fee.

Second Amendment to Loan and Security Agreement

On July 3, 2018, we and Oxford Finance signed the Second Amendment to Loan and Security Agreement whereby Oxford Finance has (i) consented to the Company's license and sale to Boehringer Ingelheim of certain preclinical assets (the "Acquired Assets") and release of any encumbrances under the Loan Agreement that relate to the Acquired Assets, (ii) payments of advisory fees to Greenhill & Company of $385,000 over the course of six months in equal monthly payments, and (iii) deferred principal payments under the Loan Agreement for six months starting with the July 2018 payment, in exchange for the Company granting such additional collateral that was not pledged previously or in which security interest was not granted prior to the Second Amendment. We are obligated to pay a fully earned and non-refundable amendment fee of $5,000 to Oxford Finance, which shall become due and payable upon the earlier of: (i) the maturity date of the term loans, (ii) the acceleration of any term loan, or (iii) the prepayment of the term loans pursuant to the Loan Agreement.

For the three and nine months ended September 30, 2018, the Company recorded interest expense related to the Loan Agreement of $94,755 and $308,271, respectively. For the three and nine months ended September 30, 2017, the Company recorded $138,642 and $445,934 in interest expense related to the term loan, respectively. The annual effective interest rate on the note payable, including the amortization of the debt discounts and accretion of the final payment, but excluding the warrant amortization, was approximately 11.82% and 12.30% as of September 30, 2018 and 2017, respectively.

The future principal payments under notes payable for the Loan Agreement and financed insurance as of September 30, 2018 are as follows:

Years ending December 31:	
2018 (remaining)	$ 36,348
2019	2,380,952
2020	396,826
Notes payable, balance as of September 30, 2018	2,814,126
Unamortized discount on notes payable	(179,025)
Notes payable, net, balance as of September 30, 2018	2,635,101
Current portion of notes payable, net	(1,822,062)
Non-current portion of notes payable, net	$ 813,039

Notice of Events of Default under Loan and Security Agreement

The Company believes it was in compliance with all applicable covenants set forth in the Loan Agreement as of September 30, 2018. However, on August 14, 2018, the Company received a letter from Oxford Finance (the "Notice") asserting certain events of default under the Loan Agreement had occurred as a result of certain events the Company reported as having occurred, including, without limitation, (i) the resignation of the Company's external auditor, CohnReznick LLP ("CohnReznick"), effective August 3, 2018, and its withdrawal of its audit reports for the years 2014 through 2017, (ii) the resignation of four (4) members of the Board of Directors, effective as of July 31, 2018, and (iii) the delisting of the Company's common stock from The Nasdaq Stock Market LLC on July 11, 2018 (collectively, the "Alleged Default Events"). The Company informed Oxford Finance that it disputes the Alleged Default Events, individually or collectively, constitute a "Material Adverse Change" or other event of default under the Loan Agreement. In addition, the Company already engaged a new auditor, Haskell & White LLP, effective August 22, 2018, and on September 20, 2018, the Court ratified the Delaware Petition. Also, on October 16, 2018, the Company applied for listing on the OTCQB Venture Marketplace (the "OTCQB Marketplace") and believes it now meets the requisite eligibility requirements; however, there can be no assurance of being listed while the SEC Action is underway. As of November 13, 2018, Company management has been meeting at least weekly since September 30, 2018, to keep Oxford Finance informed on potential fund-raising activities.

7. Related Party Transactions

On April 1, 2016, the Company entered into a two-year consulting agreement with Jeffrey Ravetch, M.D., Ph.D., a member of the Board of Directors at that time, for work beginning January 1, 2016 through December 31, 2017, at a rate of $100,000 a year, in support of scientific and technical advice on the discovery and development of technology and products for the Company primarily related to monoclonal antibodies, corporate development, and corporate partnering efforts. In April 2016, the Company paid Dr. Ravetch $100,000 for services to be performed in 2016, and made quarterly payments thereafter beginning January 1, 2017. On February 16, 2018, the Company extended Dr. Ravetch's consulting agreement until February 16, 2019, with services to be provided, as may be needed by the Company. During the three and nine months ended September 30, 2018, Dr. Ravetch provided no consulting services related to this agreement and no payments were made. During the three and nine months ended September 30, 2017, the Company recorded $25,000 and $50,000, respectively, in consulting expenses as part of general and administration expenses related to this agreement.

On November 3, 2016, the Company granted 5,833 stock options to Jeffrey Ravetch, M.D., Ph.D., for his ongoing consulting services to the Company. The option award vests over a three-year period. During the three and nine months ended September 30, 2018, the Company recognized $0 and $6,584, respectively, of stock-based compensation expense, as part of general and administration expenses, related to this option grant. During the three and nine months ended September 30, 2017, the Company recognized $3,826 and $7,652, respectively, of stock-based compensation expense, as part of general and administration expenses, related to this option grant.

On May 19, 2017, the Company granted each director, other than J. David Hansen, Jeffrey Ravetch (a member of the Board of Directors at the time) and Philip Livingston, 16,667 options at a market price of $5.40, with immediate vesting for their continuing service to the Company, in exchange for giving up their director fees for the remainder of the year. J. David Hansen and Jeffrey Ravetch were each granted 166,667 options and Philip Livingston was granted 16,667 options each at an exercise price of $6.00 per share with immediate vesting and no performance obligations. Options granted to J. David Hansen and Philip Livingston were granted as a condition of the May 2017 financing transaction. The 166,667 options granted to Dr. Ravetch in addition to the 16,667 options granted to other non-employee members of the Company's Board of Directors were in recognition of the additional value provided by Dr. Ravetch as a scientific expert. Because of the immediate vesting and all of the expenses recorded in 2017, no expenses are being recorded for these grants in 2018. During the three and nine months ended September 30, 2017, the Company recorded $0 and $1,480,089, respectively, in stock-based compensation expenses in general and administration expenses, related to these grants.

8. Stock-based Activity

Stock-based Compensation

We measure stock-based compensation expense for equity-classified awards, principally related to stock options and restricted stock units ("RSUs"), based on the estimated fair value of the award on the date of grant. We recognize the value of the portion of the award that we ultimately expect to vest as stock-based compensation expense over the requisite service period in our condensed consolidated statements of operations.

We use the Black-Scholes model to estimate the fair value of stock options granted. The expected term of stock options granted represents the period of time that we expect them to be outstanding. For the three and nine months ended September 30, 2018 and 2017, the following valuation assumptions were used:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Risk-free interest rate	-	-	2.4%	1.5 to 2.0%
Dividend yield	-	-	0%	0%
Expected volatility	-	-	87%	73 to 85%
Expected life of options, in years	-	-	5.5 yrs.	1.4 to 6.0 yrs.
Weighted-average grant date fair value	-	-	$ 1.42	$ 1.53

Total estimated stock-based compensation expense, related to all the Company's stock-based payment awards recognized under ASC 718, *"Compensation—Stock Compensation"* was comprised of the following:

	Three Months Ended September 30, 2018	Three Months Ended September 30, 2017	Nine Months Ended September 30, 2018	Nine Months Ended September 30, 2017
Research and development	$ 96,157	$ 292,523	$ 340,979	$ 989,884
General and administrative	172,458	721,213	966,183	3,526,488
Total stock-based compensation expense	$ 268,615	$ 1,013,736	$ 1,307,162	$ 4,516,372

Stock-based Award Activity

The following table summarizes the Company's stock option activity during the nine months ended September 30, 2018:

	Options Outstanding	Weighted-Average Exercise Price
Outstanding at December 31, 2017	953,937	$ 13.97
Granted	1,186,000	1.99
Exercised	—	—
Forfeited/cancelled/expired	(319,348)	6.71
Outstanding and expected to vest at September 30, 2018	1,820,589	$ 7.44
Vested and exercisable at September 30, 2018	1,060,093	$ 10.24

The total unrecognized compensation cost related to unvested stock option grants as of September 30, 2018, was $1,549,114 and the weighted average period over which these grants are expected to vest is 1.3 years. The weighted average remaining contractual life of stock options outstanding at September 30, 2018 and 2017 is 9.2 and 9.1 years, respectively.

During the first nine months of 2018, the Company granted 1,186,000 options to officers and employees with a weighted average exercise price of $1.99 and vesting over a three-year period with a vesting starting at the one-year anniversary date of the grant date. During the first nine months of 2017, the Company granted 682,230 options to officers and employees with a weighted average exercise price of $7.11 and vesting over a three-year period with vesting starting at the one-year anniversary of the grant date.

Stock options granted to employees generally vest over a three-year period with one third of the grants vesting at each one-year anniversary of the grant date.

Because the Company had a net operating loss carryforward as of September 30, 2018, no tax benefits for the tax deductions related to stock-based compensation expense were recognized in the Company's condensed consolidated statements of operations. Additionally, no stock options were exercised in the three and nine months ended September 30, 2018 and 2017.

A summary of activity related to restricted stock grants under the Fifth Amended and Restated MabVax Therapeutics Holdings, Inc. 2014 Employee, Director and Consultant Equity Incentive Plan for the nine months ended September 30, 2018 is presented below:

	Shares	Weighted Average Grant-Date Fair Value
Non-vested at December 31, 2017	832,226	$ 3.88
Granted	—	—
Vested	(832,226)	50.26
Forfeited	—	—
Non-vested at September 30, 2018	—	$ —

As of September 30, 2018, there were no non-vested RSUs remaining outstanding.

Management Bonus Plan

On February 21, 2018, the compensation committee of the Board of Directors reviewed 2017 results and concluded that the year's performance, relative to the objectives set at the beginning of the year, did not merit any bonus payment. The compensation committee also determined that management base salaries would currently remain unchanged from 2017 levels.

Common stock reserved for future issuance

Common stock reserved for future issuance consists of the following at September 30, 2018:

Common stock reserved for conversion of preferred stock	7,869,862
Warrants to purchase common stock	1,221,935
Common stock options outstanding	1,820,589
Authorized for future grant or issuance under the Stock Plan	646,059
Total	11,558,445

9. Net Income (Loss) per Share

The Company calculates basic and diluted net income (loss) per share using the weighted-average number of shares of common stock outstanding during the period.

When the Company is in a net loss position, it excludes from the calculation of diluted net loss per share all potentially dilutive stock options, preferred stock and warrants, and the diluted net loss per share is the same as the basic net loss per share for such periods. If the Company was to be in a net income position, the weighted average number of shares used to calculate the diluted net income per share would include the potential dilutive effect of in-the-money securities, as determined using the treasury stock method.

Basic and diluted net loss per share is computed as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net income (loss) allocable to common stockholders	$ 340,681	$ (6,200,161)	$ (7,296,247)	$(22,784,296)
Basic net income (loss) per common share	$ 0.04	$ (1.62)	$ (0.81)	$ (8.04)
Diluted net income (loss) per share	$ 0.02	$ (1.62)	$ (0.81)	$ (8.04)
Weighted average common shares outstanding	9,253,880	3,830,280	8,983,980	2,834,692
Diluted weighted average shares outstanding	17,123,742	3,830,280	8,983,980	2,834,692

Diluted weighted average shares outstanding for the three months ended September 30, 2018, includes only the common stock reserved for conversion of preferred stock, as the exercise price for the warrants to purchase common stock and the exercise price for common stock options outstanding are substantially above the weighted average price per share during the period. The table below presents the potentially dilutive securities that would have been included in the calculation of diluted net loss per share for the three months ended September 30, 2017, and for the Nine Months ended September 30, 2018 and 2017, respectively, if they were not antidilutive for those periods presented.

	Nine Months Ended September 30,	
	2018	2017
Common stock reserved for conversion of preferred stock	7,869,862	3,877,796
Warrants to purchase common stock	1,221,935	691,139
Common stock options outstanding	1,820,589	938,413
Unvested restricted stock	—	317,902
Total	10,912,386	5,825,250

10. Contracts and Agreements

Asset Purchase and License Agreement with Boehringer Ingelheim

On July 4, 2018, the Company entered into an Asset Purchase Agreement and License Agreement with Boehringer Ingelheim International GmbH (hereafter, "BII" and the "Asset Purchase Agreement") centered on MabVax's program targeting a glycan commonly overexpressed on multiple solid tumor cancers. BII has acquired all rights in and to the program. MabVax received a non-refundable $4 million payment upon signing the agreement and expects to receive an additional $7 million in connection with BII reaching certain near-term milestones and downstream regulatory milestones plus further earn-out payments.

The Company recognized the initial $4 million non-refundable upfront payment as revenue, as BII obtained the exclusive rights to use the intellectual property and there were no continuing obligations other than to deliver materials and documents of an administrative nature that were completed within 15 days of entering into the agreement. As of September 30, 2018, the Company had not recognized as revenue any of the future milestones given the high risk and uncertainty of continuing development by BII given such risks.

In connection with the Asset Purchase Agreement, the Company incurred cost of sales totaling $785,000, including 10% of the $4 million payment or $400,000 to MSK to obtain MSK's consent to enter into the Asset Purchase Agreement, and $385,000 in a fixed fee to investment banker Greenhill & Co. MabVax agreed to share with MSK 20% or $1.4 million of the $7.0 million in near-term milestones if achieved by BII.

The asset acquisition is separate and distinct from other programs under development at MabVax, enabling MabVax to retain all rights to its lead HuMab-5B1 antibody program which is in Phase 1 clinical trials as a therapeutic product candidate and as a diagnostic product candidate, as well as other antibody discovery programs from the Company's antibody discovery portfolio targeting other cancer antigens.

Cold Spring Harbor Laboratory License Agreement

On September 8, 2018, the Company entered into an agreement with Cold Spring Harbor Laboratory ("CSHL"), a nonprofit New York State education corporation, whereby the Company licensed the exclusive worldwide rights to certain discoveries and technology including exclusive interest in certain patent applications filed by the Company on behalf of CSHL for use of MVT-5873 as a treatment for pancreatitis. The Company paid $20,000 as an upfront license fee and will pay to CSHL a nonrefundable annual license maintenance fee of the same amount beginning on January 1, 2020 and continuing each year thereafter during the term of the agreement and will increase to $50,000 a year upon issuance of the first patent in connection with the technology. The annual license fee will be reduced for any patent prosecution and maintenance costs and will be fully creditable against any royalties or milestone payments earned during the year. Future milestone payments are in the aggregate less than $2.5 million, with royalties that range from 0.25% if no valid claim to patents, to 2.5% if there is a valid claim of the patent in the territory of sales.

Sublicense Grant to Y-mAbs Therapeutics, Inc.

On June 27, 2018, we granted an exclusive sublicense to Y-mAbs, a privately held clinical stage biopharmaceutical company, for a bi-valent ganglioside-based vaccine intended to treat neuroblastoma, a rare pediatric cancer (the "Y-mAbs Sublicense"). Total value of the transaction to MabVax is $1.3 million plus a share of a Priority Review Voucher (as defined in the sublicense agreement) if granted by the FDA to Y-mAbs on approval of the vaccine and the Priority Review Voucher is subsequently sold. Additionally, Y-mAbs will be responsible for all further development of the product as well as any downstream payment obligations related to this specific vaccine to MSK that were specified in the original MabVax-MSK license agreement dated April 30, 2008. If Y-mAbs successfully develops and receives FDA approval for the neuroblastoma vaccine, it is obligated to file with the FDA for a Priority Review Voucher. If the voucher is granted to Y-mAbs and subsequently sold, then MabVax will receive a percentage of the proceeds from the sale of the voucher by Y-mAbs. Upon entering the Y-mAbs Sublicense, the Company received a non-refundable upfront payment of $700,000 and will receive an additional $600,000 upon the one-year anniversary of entering into the agreement, provided Y-mAbs has not terminated the agreement prior to the one-year anniversary. The Sublicense Agreement contains termination provisions allowing for the termination of the agreement (i) upon material breach if the breaching party fails to cure the breach within 60 days of notice by the non-breaching party, (ii) by Y-mAbs at any time upon 90 days' advance notice to MabVax, or (iii) the expiration or termination of the underlying license from MSK to MabVax, provided that MSK will assume the agreement if Y-mAbs is in material compliance with the agreement upon the termination of the MSK-MabVax license. There were no continuing obligations on the part of the Company in connection with the agreement other than one-time administrative matters that were completed within thirty (30) days of signing the agreement. Therefore, the Company recognized $700,000 as revenue upon signing the agreement and receiving the funds. Because Y-mAbs has the right to terminate the Y-mAbs Sublicense before the one-year anniversary and the uncertainty of continuing clinical development by Y-mAbs, the Company will not recognize additional revenue until it is likely the termination provisions are no longer applicable.

Letter Agreement with MSK

On June 27, 2018, we entered into a letter agreement with MSK (the "MSK Letter") in connection with obtaining the consent from MSK for the Company to enter into the Y-mAbs Sublicense and allow Y-mAbs to "step into the shoes" of the obligations that the Company would have had to pay MSK if the Company had continued development of the neuroblastoma vaccine, including future payment obligations of the Company regarding future milestones. As part of the agreement, the Company and MSK agreed that MabVax would receive 100% of both the $700,000 upfront payment and $600,000 upon the one-year anniversary of the Y-mAbs Sublicense. All of the obligations to MSK in the MSK Letter were fully expensed as of June 30, 2018.

May 2017 Letter Agreement

On May 15, 2017, as a condition to the participation of HS Contrarian Investments, LLC ("HS Contrarian") in the public offering of the Company's common stock and Series G Preferred Stock in May 2017 (the "May 2017 Public Offering"), the Company entered into a Letter Agreement with HS Contrarian (the "May 2017 Letter Agreement") where the Company agreed to offer incentive shares (the "May 2017 Inducement Shares") to investors who (i) participated in both the Company's August 2016 public offering and the Company's April 2015 private offering, (ii) purchased securities in the May 2017 Public Offering equal to at least 50% of their original investment in the August 2016 public offering or 25% of their original investment in the April 2015 private offering, and (iii) still hold 100% of their common stock or preferred stock purchased in those investments.

Further, the Company agreed to the following in the May 2017 Letter Agreement:

Board Nomination:	To nominate one (1) candidate to the Board of Directors acceptable to the holder of a majority of the Series G Preferred Stock by December 31, 2017, and that (2) two current Board members would resign.
Executive Hire:	To hire a new C-level executive in a leadership role by July 15, 2017.
Board Compensation:	To issue an aggregate of 350,000 options to certain employees and members of the Board of Directors, at a price not less than $6.00 per share, and 16,667 options to each other member of the Board of Directors at the current market price in connection with this offering. The options were issued pursuant to the Company's option plan, subject to the requisite approvals and availability under the plan. The company was responsible for obtaining the approval of the Board of Directors and stockholders of the Company to the extent the company needed their approval to increase the number of shares available under the plan. All Board of Director fees were waived for 2017.
Funds Held in Escrow:	$500,000 of the funds from the May 2017 Public Offering were to be held in escrow and released to one or more investor relations services acceptable to the Company following the closing of this offering.

Additionally, we granted HS Contrarian consent rights: the right to approve future (i) issuances of our securities, (ii) equity or debt financings and (iii) sales of any development product assets currently held by us, subject to certain exceptions, if such securities are sold at a price below $7.50 per share and for as long as HS Contrarian in the offering holds 50% or more of the shares of Series G Preferred Stock purchased by HS Contrarian in the May 2017 Public Offering (the "Consent Rights"). All other prior consent rights of HS Contrarian were superseded by these consent rights. As of September 30, 2018, none of the shares of Series G Preferred Stock is outstanding. Thus, HS Contrarian no longer holds the Consent Rights.

For the period from the May 2017 Public Offering to December 31, 2017, the Company exceeded the minimum $500,000 in expenses related to outside investor relations services fulfilling the Company's obligation for spending on investor relations. HS Contrarian elected not to hold the funds in escrow. Further, the Company issued the May 2017 Inducement Shares and adjusted the Board of Directors compensation per the May 2017 Letter Agreement. Also, two members of the Board of Directors resigned during 2017, achieving one of the conditions of HS Contrarian. The Company did not nominate a new member to the Board of Directors, nor did it hire a new C-level executive in light of limited amount of cash available to the Company.

Letter Agreement Regarding Future Financing Transactions

On August 9, 2017, in connection with an offering in the aggregate amount of $1,312,500 in which the Company sold shares of its Series J Preferred Stock (the "August 2017 Offering"), we entered into a Letter Agreement with HS Contrarian (the "August 2017 Letter Agreement"), whereby HS Contrarian consented to and agreed that, the Company may sell securities to the investors set forth below, of an aggregate amount of up to $2,350,000, and the Company would issue incentive shares in the form of newly designated shares of Series K Preferred Stock convertible into an aggregate of 2,166,667 shares of common stock to be distributed to the following individuals or entities, as directed by HS Contrarian, as an incentive (the "Inducement Shares") for HS Contrarian and these entities and individuals to invest in the August 2017 Offering.

HS Contrarian Investments, LLC
GRQ Consultants, Inc. Roth 401K FBO Barry Honig Trustee
GRQ Consultants, Inc. Roth 401K FBO Renee Honig Trustee
Grander Holdings, Inc. 401K
Robert B. Prag
David Moss
Paradox Capital Partners, LLC

Melechdavid, Inc.
Melechdavid, Inc. Retirement Plan
Robert S. Colman Trust UDT 3/13/85
Sargeant Capital Ventures, LLC
Edward W. Easton TTEE The Easton Group ORP PSP U/A DTD 02/09/2000
Donald E. Garlikov
Airy Properties
Ryan O'Rourke
Corey Patrick O'Rourke

In addition, the Company agreed to the following in the August 2017 Letter Agreement:

- To file a proxy statement for a special meeting of stockholders within 10 days of closing the August 2017 Offering. Proposals were to include (i) an amendment to the Company's Certificate of Incorporation to effect a reverse stock split of its issued and outstanding common stock by a ratio of not less than one-for-two and not more than one-for-twenty at any time prior to one year from the date of the special meeting, with the exact ratio to be set at a whole number within this range as determined by the Board of Directors, (ii) the issuance of securities in one or more non-public offerings where the maximum discount at which securities will be offered will be equivalent to a discount of 30% below the market price of the common stock, as required by and in accordance with Nasdaq Marketplace Rule 5635(d), (iii) the issuance of securities in one or more non-public offerings where the maximum discount at which securities will be offered will be equivalent to a discount of 20% below the market price of the Common Stock, as required by and in accordance with Nasdaq Marketplace Rule 5635(d), (iv) the issuance of common stock upon the conversion of Series J Preferred Stock and (v) the issuance of incentive shares in the form of shares of Series K Preferred Stock convertible into an aggregate of 2,166,667 shares of common stock.

- Subject to agreement on terms and conditions of the investment, HS Contrarian committed to a $1,000,000 lead order in an offering amount of $8,000,000 (the "$8,000,000 Financing"). The $8,000,000 Financing was subject to the Company obtaining approval of a reverse stock split, issuance of the Series J Preferred Stock, and filing a proxy statement for stockholder approval of the Inducement Shares as identified in the August 2017 Letter Agreement.

- That the employment terms of all management be reduced to two years from three years and that management defer portions of their salary for the remainder of the year, which would be paid upon the earlier of completion of the $8,000,000 Financing or a business transaction that represents, or transactions in the aggregate that represent, in excess of $10,000,000.

In connection with HS Contrarian's and the Company's obligations under the August 2017 Letter Agreement, neither the $8,000,000 Financing nor the change in employment terms from three years to two years were completed as of November 13, 2018.

Memorial Sloan Kettering Cancer Center

Since 2008, the Company has engaged in various research agreements and collaborations with MSK including licensed rights to cancer vaccines and the blood samples from patients who have been vaccinated with MSK's cancer vaccines. Total sponsored research contracts outstanding in 2016 amounting to approximately $800,000 in 2016 were 100% complete as of the year ended December 31, 2016. Such sponsored research agreements provide support for preclinical work on the Company's product development programs. The work includes preparing radioimmunoconjugates of the Company's antibodies and performing *in vitro* and *in vivo* pharmacology studies for our therapeutic antibody product candidate, imaging agent product candidate, and radioimmunotherapy product candidate programs. For the three months ended September 30, 2018, there were no expenses incurred related to these contracts.

Patheon Biologics LLC Agreement

On April 14, 2014, the Company entered into a development and manufacturing services agreement with Patheon Biologics LLC (f.k.a. Gallus Biopharmaceuticals) to provide a full range of manufacturing and bioprocessing services, including cell line development, process development, protein production, cell culture, protein purification, bio-analytical chemistry and QC testing. Total amount of the contract is estimated at approximately $3.0 million. For the three months ended September 30, 2018 and 2017, the Company recorded no expenses associated with the agreement, as no manufacturing was completed during either period.

11. Commitments and Contingencies

Capital Leases

On March 21, 2016, the Company entered into a lease agreement with ThermoFisher Scientific ("Lessor"). Under the terms of the agreement, the Company agreed to lease two pieces of equipment from the Lessor, a liquid chromatography system and an incubator, totaling in cost of $95,656. The term of the lease is five years (60 months), and the monthly lease payment is $1,942. In addition, there is a $1.00 buyout option at the end of the lease term.

Minimum future annual capital lease obligations are as follows as of September 30, 2018:

2018 (remaining)	$ 5,601
2019	22,402
2020	22,402
2021	7,468
Less interest	(7,426)
Principal	50,447
Less current portion	(18,943)
Noncurrent portion	$ 31,504

Operating Leases

In 2015, the Company recorded a $590,504 contingent lease termination fee of the master lease and sublease of 3165 Porter Drive in Palo Alto, California, which was payable to ARE-San Francisco No. 24 ("ARE"), if the Company received $15 million or more in additional financing in the aggregate. The additional financing was achieved in 2015 and the termination fee is reflected on the condensed consolidated balance sheet as an accrued lease contingency fee.

On September 2, 2015, the Company entered a lease (the "Lease") with AGP Sorrento Business Complex, L.P., for certain premises of office and laboratory space in buildings located at 11535 Sorrento Valley Rd., San Diego, California, to serve as the Company's corporate offices and laboratories (the "New Premises"). Because certain tenant improvements needed to be made to the New Premises before the Company could take occupancy, the term of the Lease did not commence until the New Premises were ready for occupancy, which was on February 4, 2016. The Lease terminates on February 28, 2022, unless earlier terminated in accordance with the Lease. Pursuant to the terms of the Lease, the monthly base rent is $35,631, subject to annual increases as set forth in the Lease.

The Company has an option to extend the Lease term for a single, five-year period. If the Lease term is extended for the optional five-year period, the monthly base rent will be adjusted based on fair market rental value. In addition to rent, the Company agreed to pay a portion of the taxes and utility, maintenance and other operating costs paid or accrued in connection with the ownership and operation of the property.

The Company recognized rent expense on a straight-line basis over the term of the lease.

During the three and nine months ended September 30, 2018, the Company recorded rent expense of $115,238 and $345,714, respectively.

Minimum future annual operating lease obligations are as follows as of September 30, 2018:

2018 (remaining)	$ 151,204
2019	466,085
2020	480,068
2021	494,470
2022	41,306
Total	$ 1,633,133

Legal Proceedings

See Item 1 of Part II "Other Information" and Note 12 "Subsequent Events" for a discussion of legal proceedings.

12. Subsequent Events

Legal Proceedings

***Jackson v. Hansen et al.*, Case No. 18-cv-2302-BEN-BGS.** On October 4, 2018, a shareholder derivative complaint was filed in the United States District Court for the Southern District of California. The complaint arises from similar allegations as *In re MabVax Therapeutics Securities Litigation* and *Liesman v. Hansen et al.,* filed on September 26, 2018 (See Part II. Item 1. "Legal Proceedings") but, in addition to a breach of fiduciary duty claim, also includes causes of action for unjust enrichment, abuse of control, gross mismanagement and waste of corporate assets. Plaintiff seeks, on behalf of the Company, damages, fees, costs, and equitable relief.

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

About Us

MabVax Therapeutics Holdings, Inc. is a clinical-stage biotechnology company with a fully human antibody discovery platform focused on the rapid translation into clinical development of products to address unmet medical needs in the treatment of cancer and pancreatitis. We discovered a pipeline of human monoclonal antibody product candidates based on the protective immune responses generated by patients who have been vaccinated against targeted cancers. Our therapeutic vaccine product candidates under development were discovered at Memorial Sloan Kettering Cancer Center ("MSK") and are exclusively licensed to us as well as exclusive rights to blood samples from patients who were vaccinated with the same licensed vaccines. We operate in only one business segment.

Our lead development product, MVT-5873, is a fully human IgG1 monoclonal antibody (mAb) that targets sialyl Lewis A (sLea), an epitope on CA19-9. MVT-5873 is currently in Phase 1 clinical trials as a therapeutic agent for patients with pancreatic cancer and other CA19-9 positive tumors. CA19-9 is expressed in over 90% of pancreatic cancers and in other diseases including pancreatitis. CA19-9 plays an important role in tumor adhesion and metastasis and is a marker of an aggressive cancer phenotype. CA19-9 also has an important role in the biological pathways that can result in pancreatitis. CA19-9 serum levels are considered a valuable adjunct in the diagnosis, prognosis and treatment monitoring of pancreatic cancer and now pancreatitis. With our collaborators including MSK, Sarah Cannon Research Institute, Honor Health and Imaging Endpoints, we have treated more than 56 patients with either our therapeutic antibody designated as MVT-5873 or our PET imaging diagnostic product designated as MVT-2163 in Phase 1 clinical studies, and demonstrated early safety, specificity for the target and a potential efficacy signal. The Company also has a radioimmunotherapy product, designated as MVT-1075, that is also in Phase 1 clinical development. For additional information, please visit the Company's website, www.mabvax.com. Information on the Company's website is not incorporated into this Quarterly Report.

Studies conducted by Cold Spring Harbor Laboratories have demonstrated that antibodies capable of binding to CA19-9 and blocking the downstream biological pathways of pancreatitis have a positive effect on ameliorating the disease. Combining the preclinical science supporting the use of the CA19-9 blocking antibodies in the treatment of pancreatitis with the clinically validated data and supplies of MVT-5873 already available gives MabVax the opportunity, assuming adequate funding, to move quickly into the clinic in a mid-stage proof of concept clinical trial in the near-term.

The Company completed a preclinical asset sale and license agreement with Boehringer Ingelheim in July 2018, and a license agreement for a cancer vaccine to Y-mAbs Therapeutics, Inc. in June 2018. The Company received nearly $5 million in upfront payments from these two transactions to begin the third quarter, with an additional $7.6 million in downstream milestones the Company may receive based either on reaching an anniversary date of entering the agreement, provided the agreement is not canceled prior to reaching the milestone or due date, or upon reaching a milestone.

We have incurred substantial losses since inception, and we expect to incur additional substantial losses for the foreseeable future as we continue our research and development activities. To date, we have funded our operations primarily through equity financings in the form of common stock and preferred stock, licensing agreements, asset sales, strategic collaborations, issuance of common stock in lieu of cash for services, government grants, debt financings or other arrangements. The process of developing our product candidates will require significant additional research and development, preclinical testing and clinical trials, as well as regulatory approval. We expect these activities, together with general and administrative expenses, to result in substantial operating losses for the foreseeable future. We will not receive product revenue unless we, or our collaborative partners, complete clinical trials, obtain regulatory approval and successfully commercialize one or more of our product candidates. We cannot provide assurance that we will ever generate revenues or achieve and sustain profitability in the future or obtain the necessary working capital for our operations.

During the nine months ended September 30, 2018, we recognized revenue of $700,000 from a license agreement with Y-mAbs and $4,000,000 from an asset sale to Boehringer Ingelheim, resulting in gross profit of $3,915,000. Our loss from operations during this nine-month period was $5,410,200 and our net loss was $5,908,068. Net cash used in operating activities for the nine months ended September 30, 2018 was $2,620,437, cash and cash equivalents and working capital deficit of as of September 30, 2018 were $951,751 and $6,334,244 respectively. As of September 30, 2018, we had an accumulated deficit of $118,349,884 and a stockholders' equity of $42,558.

We are subject to risks common to biopharmaceutical companies, including the need for capital, risks inherent in our research, development and commercialization efforts, preclinical testing, clinical trials, uncertainty of regulatory and marketing approvals, enforcement of patent and proprietary rights, potential competition and retention of key employees. For a product candidate to be commercialized, it is necessary for us to conduct preclinical tests and clinical trials, demonstrate efficacy and safety of our product candidates to the satisfaction of regulatory authorities, obtain marketing approval, enter into manufacturing, distribution and marketing arrangements, obtain market acceptance and, in many cases, obtain adequate reimbursement from government and private insurers. We cannot provide assurance that we will ever generate revenues or achieve and sustain profitability in the future or obtain the necessary working capital for our operations.

Reverse Stock Splits

On August 16, 2016, we filed a certificate of amendment to our Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware to effectuate a reverse stock split of our issued and outstanding common stock on a 1-for-7.4 basis, effective on August 16, 2016 (the "2016 Reverse Stock Split"). On February 14, 2018, we filed a certificate of amendment to our Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware to effectuate another reverse stock split of our issued and outstanding common stock on a 1-for-3 basis, effective on February 16, 2018 (the "2018 Reverse Stock Split"; collectively with the 2016 Reverse Stock Split, the "Reverse Stock Splits"). All share and per share amounts, and number of shares of common stock into which each share of preferred stock will convert, in the financial statements and notes thereto included in Item 1 of Part I of this Quarterly Report and elsewhere in this Quarterly Report have been retroactively adjusted for all periods presented to give effect to the Reverse Stock Splits, including reclassifying an amount equal to the reduction in par value of common stock to additional paid-in capital.

Court Validation of Previously Issued Shares of Common Stock upon Conversion of Preferred Stock

On September 20, 2018, the Court of Chancery of the State of Delaware (the "Court") entered an order validating (i) issuances of common stock upon conversions of the Company's preferred stock occurring between June 30, 2014 and February 12, 2018, and (ii) stockholder approval of corporate actions presented to the Company's stockholders from June 30, 2014 to February 12, 2018. In so doing, the Court granted the Company's Verified Petition for Relief Under *8 Del. C. § 205* (the "Delaware Petition") captioned *In re: MabVax Therapeutics Holdings, Inc.*, filed on July 27, 2018, in order to rectify the uncertainty regarding whether shares of our common stock were validly issued upon conversion of our preferred stock from June 30, 2014 to February 12, 2018.

As disclosed in our Current Report on Form 8-K filed with the SEC on May 21, 2018 (the "May Form 8-K"), facts previously came to our attention indicating that certain shares of our common stock issued upon conversion of shares of our preferred stock may not have been validly issued in compliance with the 4.99% blocker provisions set forth in the applicable certificates of designation for conversions occurring between June 30, 2014 and February 12, 2018.

Withdrawal and Reinstatement of Auditor Reports; Auditor Resignation and Appointment of New Auditor

As disclosed in the May Form 8-K and in part due to the uncertainty regarding the valid issuance of certain shares of our common stock addressed in the Delaware Petition, on May 20, 2018, our Board of Directors, upon the recommendation of management, concluded our prior annual and interim period financial statements for the years 2014, 2015, 2016 and 2017 included in our Reports on Form 10-K and Form 10-Q for such years, and our registration statements filed during the years 2014, 2015, 2016, 2017 and to date for 2018 with respect to the number of shares of common stock outstanding, and the weighted average number of shares used in calculating earnings per share and related per share figures should not be relied upon. Accordingly, on May 20, 2018, our then-engaged independent accounting firm, CohnReznick, withdrew their audit reports included in our Annual Reports on Form 10-K for the years 2014, 2015, 2016 and 2017. Our Board of Directors further determined the Company could not file its Quarterly Report on Form 10-Q for the quarter ended March 31, 2018 in compliance with applicable laws and regulations.

As disclosed on August 8, 2018, effective August 3, 2018, CohnReznick resigned as the Company's independent auditor. During the Company's two most recent fiscal years ended December 31, 2017 and December 31, 2016, and during the subsequent interim reporting periods through March 31, 2018, and the interim period through August 3, 2018, there were no disagreements with CohnReznick on any matter of GAAP or practices, financial statement disclosures, or auditing scope or procedures, which disagreements, if not resolved to the satisfaction of CohnReznick would have caused CohnReznick to make reference to the subject matter of the disagreements in connection with its reports. Additionally, there were no events of the type listed in paragraphs (A) through (D) of Item 304(a)(1)(v) of Regulation S-K.

Subsequent to the ratification of the shares by the Court on September 20, 2018, on October 12, 2018 CohnReznick issued their audit report for the consolidated financial statements for the years 2016 and 2017, included in our Form 10-K/A filed with the SEC on October 15, 2018, and the auditors' consent to including their reports in our registration statements filed during the years 2016 and 2017.

On August 22, 2018, we entered into an engagement agreement pursuant to which we appointed our new independent accounting firm, Haskell & White LLP.

Nasdaq De-listing and Application for Listing on the OTCQB Marketplace

On October 16, 2018, the Company applied for listing on the OTCQB Marketplace since the Company believes it now meets the requisite eligibility requirements; however, there can be no assurance of being listed while the SEC Action is underway.

On July 2, 2018, the Listing Qualifications Department of the Nasdaq Stock Market (the "Staff") notified the Company of its determination to delist our securities. In this notice, the Staff indicated their determination was based upon the Company's non-compliance with the Rule as well as the Company's non-compliance with the $2.5 million stockholders' equity requirement for continued listing on The Nasdaq Capital Market per Nasdaq listing rule 5550(b)(1). The Company elected not to appeal the Staff's decision and, as a result, on July 2, 2018, we received a letter from the Staff indicating trading of the Company's common stock would be suspended on Nasdaq Capital Market at the open of business on Wednesday, July 11, 2018. On July 11, 2018, our common stock began trading on the OTC Pink, continuing under the symbol MBVX. On May 21, 2018, we notified the Staff that we would not be filing our Quarterly Report on Form 10-Q for the quarter ended March 31, 2018, by the required deadline as required for continued listing on the Nasdaq Capital Market per Nasdaq listing rule 5250(c)(1) (the "Rule"). Further, on June 29, 2018, the Company's Board of Directors determined not to submit a plan to the Staff to regain compliance with the Rule, and we announced this decision in a press release on July 2, 2018. On September 26, 2018, the Nasdaq Stock Market announced that it will delist the common stock of MabVax by filing a Form 25 with the SEC to complete the delisting process. The delisting became effective ten days after the Form 25 was filed.

Resignation and Appointment of Members of the Board of Directors

Effective July 31, 2018, Paul Maier, Jeffrey E. Eisenberg, Thomas C. Varvaro and Kenneth Cohen, resigned as members of the Company's Board of Directors. There were no disagreements between the resigning Board members and management.

Following the resignations, in a separate action, the Board of Directors appointed our Chief Financial Officer, Gregory Hanson, as a member of the Board. Mr. Hanson has served as our Chief Financial Officer since July 2014, and of its subsidiary, MabVax Therapeutics, Inc. since February 2014. Mr. Hanson has over 30 years' experience serving as the CFO, financial executive and director of public and private life sciences and hi-tech companies. Since October 2016, he has served as a member of the board of directors of a private pharmaceutical contract research organization.

Our Clinical Development Programs

MVT-5873 – for the Treatment of Pancreatic Cancer

MVT-5873 as a Monotherapy in Late Stage Cancer Patients – We reported results from our Phase 1a clinical trial of 32 patients treated with our therapeutic antibody product candidate, MVT-5873, as a monotherapy in a poster presentation at the American Society of Clinical Oncology ("ASCO") Annual Meeting on June 3, 2017. MVT-5873 has been evaluated for safety and tolerability in patients with advanced pancreatic cancer and other CA19-9 positive cancers. In this poster presentation, the Company highlighted that the single agent MVT-5837 appeared safe and well tolerated in patients at biologically active doses based on the results of the Phase 1a trial. Furthermore, all patients in the Phase 1a trial were evaluated by RECIST 1.1 for tumor response, and the Company reported 11 patients achieved stable disease in this dose escalation safety trial of 32 patients.

The results of the Phase 1a trial with MVT-5873 support that this fully-human antibody targeting CA19-9 cancers can be administered at doses with acceptable safety and have a potentially positive impact on disease. The cancer antigen CA19-9 is broadly expressed in various cancers including pancreatic, colon, and small cell lung cancer making this antibody potentially useful for a larger patient population. Clinical signals from an identifiable subset of subjects enabled us to understand those patients most likely to respond to a MVT-5873 based therapy. We plan to continue to evaluate MVT-5873 at higher doses.

MVT-5873 in Combination with a Standard of Care Chemotherapy – Based upon observations from the first two cohorts of patients treated, we are evaluating further clinical development of MVT-5873 in combination with gemcitabine and nab-paclitaxel as a first line therapy for the treatment of patients newly diagnosed with pancreatic cancer. MabVax has treated seventeen patients as of August 24, 2018, with the objective of obtaining additional safety and tumor response (RECIST 1.1) data for this treatment regimen. Dr. Eileen O'Reilly, Associate Director of the David M. Rubenstein Center for Pancreatic Cancer Research, attending physician, member at MSK and Professor of Medicine at Weill Cornell Medical College, is the lead investigator in the MVT-5873 Phase 1 clinical trial.

On February 12, 2018, we reported on interim results of the current cohort of the Phase 1 study, in which MVT-5873 was given in combination with nab-paclitaxel and gemcitabine to patients newly diagnosed with CA19-9 positive pancreatic cancer. MVT-5873 at a dose of 0.125 mg/kg when added to first-line chemotherapy was generally well tolerated by all subjects. At that time, all six patients in the current cohort demonstrated measurable tumor reductions, with four patients meeting the criteria for partial response (PR) and two patients meeting the criteria for stable disease (SD). We believe these results further confirm results reported on a portion of the cohort in late 2017. Patient CA19-9 levels, which are a prognostic indicator of the disease state, were markedly reduced in all subjects with this combination therapy. Due to adverse events potentially related to the combination of nab-paclitaxel, gemcitabine and MVT-5873, not seen in the monotherapy clinical study, the Company has suspended patient enrollment at the current dose. We are evaluating plans to enroll additional patients at a lower dose to further explore safety and response in a larger population.

MVT-5873 – for the Treatment of Pancreatitis

Pancreatitis is a severe and common medical condition that can lead to death or a chronic condition with significant morbidity, systemic inflammatory response and multiple organ dysfunction syndromes. Pancreatitis is also associated with a 16.5-fold elevated risk for developing pancreatic cancer. Best available treatment for pancreatitis is primarily supportive care consisting of rehydration, pain relief, nutritional support followed by antibiotic therapy, and surgery for biliary pancreatitis and other more severe cases. Acute and chronic pancreatitis in the United States accounts for 361,000 hospital admissions each year and for direct health care costs of $3.1 billion annually (Forsmark et al, *NEJM* 375;20 and Yadav et al, *Pancreapedia*, July 28, 2016).

Investigators at CSHL have made significant new discoveries elucidating the biological pathways that cause both acute and chronic pancreatitis. Investigators found that expression of CA19-9 in the pancreas is sufficient to induce pancreatitis. Specifically, CA19-9 elevation resulted in rapid elevation of pancreatic enzymes in the blood, pancreatic infiltration of immune cells, acinar-to-ductal metaplasia and atrophy, as well as increased proliferation. Investigators then explored the utility of CA19-9 as a therapeutic target for both acute and chronic pancreatitis. This avenue of treatment strategy exhibits potential given that turning off or blocking CA19-9 expression results in the normalization of pancreatic enzyme levels within four days following an acute episode of pancreatitis.

MVT-5873 specifically targets CA19-9, and subsequent studies have demonstrated that antibodies capable of binding to CA19-9 and blocking the downstream biological pathways of pancreatitis have a positive effect on ameliorating the disease. Combining the preclinical science supporting the use of the CA19-9 blocking antibodies in the treatment of pancreatitis with the clinically validated data and supplies of MVT-5873 already available gives MabVax the opportunity, assuming adequate funding, to move quickly into the clinic in a mid-stage proof of concept clinical trial in the near-term.

MVT-2163 – as an Imaging Agent for Pancreatic Cancer

We reported results from our Phase 1a clinical trial of ImmunoPET imaging agent product candidate, MVT-2163, in 12 patients with locally advanced or metastatic adenocarcinoma of the pancreas ("PDAC") or other CA19-9 positive malignancies in a poster presentation and podium talk at the Society of Nuclear Medicine and Molecular Imaging ("SNMMI") Annual Meeting held in Denver, Colorado on June 10-14, 2017.

The Phase 1a clinical trial of MVT-2163 Phase I trial was intended to evaluate our next generation diagnostic PET imaging agent in patients with PDAC or other CA19-9 positive malignancies. MVT-2163 (89Zr-HuMab-5B1) combines the well-established PET imaging radiolabel Zirconium-89, a positron emitting isotope typically labeled as 89Zr, with the targeting specificity of MVT-5873. We designed the trial to establish safety, pharmacokinetics, biodistribution, optimal time to obtain the PET image, and the amount of MVT-5873 to be administered as a blocking dose prior to administration of MVT-2163 to obtain optimized PET scan images.

As of July 2017, twelve (12) patients were treated in this first-in-human trial evaluating the safety and feasibility of MVT-2163 to image pancreatic tumors and other CA19-9 positive malignancies. MVT-2163 was administered alone and in combination with MVT-5873 and was well tolerated in all cohorts. The only toxicities were infusion reactions that resolved on the day of the injection, with some patients requiring standard supportive medication. We reported that administering MVT-5873 prior to dosing MVT-2163 reduces liver uptake facilitating detection of liver metastases. In addition, we determined that the MVT-5873 cold antibody pre-dose did not interfere with the uptake of MVT-2163 on cancer lesions.

Uptake of MVT-2163 was observed in primary tumors and metastases as early as day two and continuously through day seven. Standard Uptake Values ("SUVs"), a measurement of activity in PET imaging, reached as high as 101 in the study. The investigators reported that the SUVs are amongst the highest lesion uptake values they have ever seen for a radiolabeled antibody. Bone and soft tissue disease were readily visualized, and lesion uptake of the radiotracer was higher than typically seen with PET imaging agents. The correlation with Computerized Tomography ("CT") scans was high.

In summary, the MVT-2163 product candidate demonstrated acceptable safety tolerability, pharmacokinetics and biodistribution in this trial. MVT-2163 also produced high quality PET images identifying both primary tumor and metastatic sites. We believe there was a promising correlation with diagnostic CT that warrants further studies correlating these findings with histopathology to assess the accuracy of MVT-2163 in identifying smaller metastatic nodes below the detection level of standard CT scans. We believe the continual increase in high SUVs on cancer lesions in this study supports the use of the Company's MVT-1075 radioimmunotherapy product candidate, which utilizes the same antibody to deliver a radiation dose for the treatment of patients with pancreatic, lung and colon cancers.

In April 2018, the NIH awarded an R01 Research Grant to MSK for continued Phase 1b development of MVT-2163 as a PET diagnostic imaging agent. The R01 grant extends the Phase 1 work already completed by MabVax by evaluating MVT-2163 visual images and biopsies of targeted tissues illuminated with the PET agent. This information will then be used to determine if the new PET imaging agent can improve pre-surgical staging of patients with pancreatic ductal adenocarcinoma. Since surgery is currently the only cure for pancreatic cancer and the success rate of surgical intervention is low, having a new diagnostic tool to more accurately assess the location and extent of the dissemination of the cancer has the potential to improve surgical outcomes. Additionally, these data can be used to support the dose and dose distribution determinations for the Company's HuMab-5B1 antibody based radioimmunotherapy agent, MVT-1075, currently being evaluated in a Phase 1 trial. MabVax will support MSK in its research efforts and allow the clinical study to be conducted under a MabVax IND; however, the bulk of the costs will be borne by the NIH.

MVT-1075 – as a Radioimmunotherapy for Pancreatic Cancer

On February 28, 2018, we announced positive interim results from the initial three-patient cohort of the Phase 1 clinical trial for MVT-1075, which combines the demonstrated targeting specificity of the MVT-5873 antibody with the proven clinical success of a low-energy radiation emitter, 177Lutetium, often referred to as 177Lu. Results from the first three patients dosed in the initial cohort of this dose escalation Phase 1 safety trial demonstrated that MVT-1075 was reasonably well tolerated and accumulated on tumor as evidenced by dosimetry measurements performed after the first dose. At this initial dose, two subjects met the criteria for stable disease (SD) and one met the criteria of progressive disease (PD) as measured using RECIST 1.1 criteria. Hematologic toxicities were manageable, and the Company is enrolling the first patient in the second cohort.

This Phase 1 first-in human dose escalation clinical trial, which began in June 2017, is an open-label, multi-center study evaluating the safety and efficacy of MVT-1075 in up to 22 patients for patients with PDAC or other CA19-9 positive malignancies including colon and lung cancers. The primary endpoint of this trial is to determine the maximum tolerated dose and safety profile in late stage patients with recurring disease who have failed prior therapies. Secondary endpoints include evaluating tumor response rate and duration of response by RECIST 1.1 and determining dosimetry and pharmacokinetics. This dose-escalation study utilizes a traditional 3+3 design and is based on experience we gained through prior clinical studies that treated 50 patients with either MVT-5873, or our imaging agent MVT-2163. The investigative sites are Honor Health in Scottsdale, Arizona, and MSK in New York City.

In April 2017, we reported preclinical results for MVT-1075 at the American Association of Clinical Research (AACR) Annual Meeting, demonstrating suppression, and in some instances, regression, of tumor growth in xenograft animal models of pancreatic cancer, potentially making this product candidate an important new therapeutic agent in the treatment of pancreatic, colon and lung cancers. Supporting the MVT-1075 RIT clinical investigation are the Company's successful MVT-5873 and MVT-2163 Phase 1a safety and target specificity data which were reported earlier this year at the annual meetings of the ASCO and the SSNMMI, respectively. The combined results from 50 patients in the Phase 1 MVT-5873 and MVT-2163 studies established safety and provided significant insight into drug biodistribution and an optimal dosing strategy, which the Company has incorporated into the MVT-1075 program.

Asset Sales and License Agreements

License Grant to Y-mAbs Therapeutics, Inc.

On June 27, 2018, we entered into a Sublicense Agreement with Y-mAbs, pursuant to which we granted Y-mAbs an exclusive sublicense to a bi-valent ganglioside-based vaccine product candidate intended to treat neuroblastoma, a rare pediatric cancer.

Neuroblastoma is a rare solid tumor in childhood with only about 650 cases diagnosed each year in North America. The incidence is about 10.54 cases per 1 million per year in children younger than 15 years. About 37% are diagnosed as infants, and 90% are younger than 5 years at diagnosis, with a median age at diagnosis of 19 months. Neuroblastoma is responsible for 12% of all cancer deaths in children less than 15 years of age.

Total value of the transaction to MabVax is $1.3 million , $700,000 of which was paid upon execution of the agreement and $600,000 of which is to be paid within five (5) days of the first anniversary of the execution date, provided the agreement as not been terminated prior to the anniversary, plus a share of a Priority Review Voucher if granted by the FDA to Y-mAbs on approval of the vaccine and the Priority Review Voucher is subsequently sold. Additionally, Y-mAbs will be responsible for all further development of the product candidate as well as any downstream payment obligations related to this specific vaccine to MSK that were specified in the original MabVax-MSK license agreement. If Y-mAbs successfully develops and receives FDA approval for the Neuroblastoma vaccine product candidate, it is obligated to file with the FDA for a Priority Review Voucher. If this voucher is granted to Y-mAbs and subsequently sold, then MabVax will receive a percentage of the proceeds from the sale of the voucher by Y-mAbs.

The neuroblastoma vaccine product candidate was originally developed by Dr. Philip Livingston and colleagues at MSK and licensed as part of a broader portfolio of anti-cancer vaccines licensed to MabVax. MabVax filed for and was granted an Orphan Drug Designation for the neuroblastoma vaccine and has manufactured Phase II clinical supplies for a planned but not initiated clinical trial to be conducted with the consortium New Advances in Neuroblastoma Therapy (“NANT”). NANT is the only consortium of academic medical centers in the world solely dedicated to developing novel treatments and biomarkers for children with Neuroblastoma. Over the last several years, MabVax has shifted its focus and resources to the Company’s human antibody discovery and development programs that are currently in early stage clinical trials and have attracted partner interest.

Sale of Asset to Boehringer Ingelheim and Related Agreements

On July 6, 2018, we entered into the Asset Purchase Agreement with Boehringer Ingelheim, pursuant to which Boehringer Ingelheim purchased all of our rights to assets owned or controlled by us that related to a specific human antibody research and development program to identify and characterize antibodies that bind to an undisclosed glycan antigen. The transaction closed on July 6, 2018.

Pursuant to the Asset Purchase Agreement, MabVax may receive a total of $11 million, $4 million of which was paid upfront and the remainder upon the achievement by Boehringer Ingelheim of various specified milestone events, plus further earn-out payments through the later of the expiration of the last to expire valid claim of the licensed program patent covering a Boehringer Ingelheim product, or ten (10) years from the date of first commercial sale of such Boehringer Ingelheim product on a country-by-country and product-by-product basis.

MabVax discovered the antibody series at the center of this transaction from biological samples, originally from patients who were vaccinated against their solid tumors with a glycan antigen-containing vaccine. We believe our methods of discovery of fully human antibodies directly from vaccinated cancer patients has potential advantages, which include greater specificity and reduced toxicities.

Plan for Remainder of 2018

Based on the experience with recent asset sales and license agreements, and continuing inquiries from third parties regarding their interest in other MabVax assets and clinical progress to date related to MVT-5873, MVT-1075, and MVT-2163, we intend on continuing to explore additional licensing and/or collaboration opportunities for certain fields of use of our technology. However, there can be no assurance that any such transaction will occur.

If we are able to secure additional funds, we intend to, among other things:

- continue enrollment in our clinical study of MVT-5873 in combination with gemcitabine and nab-paclitaxel in first line therapy for the treatment of patients newly diagnosed with pancreatic cancer with the objective of confirming early observations seen to date, to enable discussions with potential strategic partners and investors.

- enroll additional patients into the MVT-5873 monotherapy trial with the aim of establishing a higher maximum tolerated dose. We have submitted our Investigational New Drug Application (“IND”), to the FDA, for a revised protocol to enable continuation of the trial at higher doses.

- support the continued development of the MVT-2163 imaging agent under the R01 grant made to MSK for the Phase 1b portion of this clinical program.

- continue clinical development of MVT-1075 for the treatment of locally advanced or metastatic pancreatic cancer patients, by completing additional cohorts of patients in a dose escalation safety trial to continue to assess the safety and potential efficacy of this treatment; also, to enable discussions with potential strategic partners and investors.

- Use a portion of existing supplies of MVT-5873 to pursue a proof of concept clinical trial of MVT-5873 in the treatment of pancreatitis.

RESULTS OF OPERATIONS

We are providing the following information about our revenues, expenses, and cash and liquidity.

Comparison of the Three and Nine Months Ended September 30, 2018 and 2017

Revenues, Cost of Revenues and Net Sales:

	Three Months Ended September 30,		% Increase/	Nine Months Ended September 30,		% Increase/
	2018	2017	(Decrease)	2018	2017	(Decrease)
Revenues	$4,000,000	$ -	100%	$4,700,000	$ -	100%
Cost of revenues	785,000	-	100%	785,000	-	100%
Gross profit	$3,215,000	-	100%	$3,915,000	-	100%

For the three months ended September 30, 2018, we recognized $4,000,000 in revenues, as compared to no revenues for the same period in the prior year. The revenues in 2018 were due to the revenues recognized from the sale to Boehringer Ingelheim of all of our rights to certain assets owned or controlled by us that related to a specific human antibody research and development program to identify and characterize antibodies that bind to an undisclosed glycan antigen. The cost of revenues was $785,000 resulting in a gross profit of $3,215,000. The Company had no continuing obligations to provide any services under the contract, enabling the revenues to be recognized. Given the uncertainty of Boehringer Ingelheim achieving any of the future milestones, the Company did not recognize as revenue any of the future potential milestones as of September 30, 2018.

For the nine months ended September 30, 2018, we recognized $4,700,000 in revenues, as compared to no revenues for the same period in the prior year. The cost of revenues was $785,000 resulting in a gross profit of $3,915,000. The revenues in 2018 were due to the revenues recognized from the upfront payment by Y-mAbs for rights to develop the neuroblastoma vaccine and the sale to Boehringer Ingelheim of our rights to certain assets owned or controlled by us related to a specific human antibody research and development program to identify and characterize antibodies that bind to an undisclosed glycan antigen.

Research and development expenses:

	Three Months Ended September 30,		% Increase/	Nine Months Ended September 30,		% Increase/
	2018	2017	(Decrease)	2018	2017	(Decrease)
Research and development	$ 199,367	$1,017,061	(80.4)%	$2,915,709	$6,168,125	(52.7)%

For the three months ended September 30, 2018, we incurred research and development expenses of $199,367, as compared to $1,017,061 for the same period a year ago. Stock-based compensation expense included in research and development expenses for the three months ended September 30, 2018 and 2017 was $96,157 and $292,523, respectively. Decreased expenses in the three months ended September 30, 2018, compared to the same period in the prior year are primarily due to reduced spending on our Phase I clinical trials of MVT-5873 as a therapeutic and MVT-2163 as a diagnostic for pancreatic cancer and other CA 19.9 malignancies, and a reduction in staff that supported preclinical and clinical development efforts.

For the nine months ended September 30, 2018, we incurred research and development expenses of $2,915,709 as compared to $6,168,125 for the same period a year ago. Stock-based compensation expense included in research and development expenses for the nine months ended September 30, 2018 and 2017 was $340,979 and $989,884, respectively. Decreased expenses in the nine months ended September 30, 2018, compared to the same period in the prior year are primarily due to decreased spending on our Phase I clinical trials of MVT-5873 as a therapeutic and MVT-2163 as a diagnostic for pancreatic cancer and other CA 19.9 malignancies, and a reduction in staff that supported preclinical and clinical development efforts.

General and administrative expenses:

	Three Months Ended September 30,		% Increase/	Nine Months Ended September 30,		% Increase/
	2018	2017	(Decrease)	2018	2017	(Decrease)
General and administrative	$ 2,520,950	$1,831,629	37.6%	$6,409,491	$7,513,621	(14.7)%

For the three months ended September 30, 2018, we incurred general and administrative expenses of $2,520,950 as compared to $1,831,629 for the same period a year ago. Stock-based compensation expense included in general and administrative expenses for the three months ended September 30, 2018 and 2017 was $172,458 and $721,213, respectively. Stock-based compensation expense for the three months ended September 30, 2018 and 2017 included $0 and $ 68,250 in restricted stock for services, respectively. The increase in general and administrative expenses was primarily due to higher legal costs of $1,553,041 and outside professional services of $208,098, partially offset by lower staff costs, as compared to the same period last year.

For the nine months ended September 30, 2018, we incurred general and administrative expenses of $6,409,491, as compared to $7,513,621 for the same period a year ago. Stock-based compensation expense included in general and administrative expenses for the nine months ended September 30, 2018 and 2017 was $966,183 and $3,526,488, respectively. Stock-based compensation expense for the nine months ended September 30, 2018 and 2017 included $0 and $ 131,800 in restricted stock for services, respectively. The decrease in general and administrative expenses was primarily due to lower compensation costs of $2,966,631 including a decrease of stock-based compensation expenses of $2,560,305, and lower consulting service costs of $48,420 offset by higher legal costs of $2,569,994 compared to the same period last year.

Interest income and other income (expense):

	Three Months Ended September 30,		% Increase/	Nine Months Ended September 30,		% Increase/
	2018	2017	(Decrease)	2018	2017	(Decrease)
Interest and other expense	$ (154,002)	$ (231,471)	(32.3)%	$ (497,689)	$ (743,137)	(33.0)%

Interest and other expense was $154,002 and $231,471 for the three months ended September 30, 2018 and 2017, respectively. The amount for the three months ended September 30, 2018, consisted primarily of $96,755 of interest expense related to interest on the Company's term loan from Oxford Finance, LLC ("Oxford Finance"), $23,612 of financing cost amortization, and $31,468 of warrant amortization. The amount for the three months ended September 30, 2017, consisted primarily of $142,007 related to Oxford Finance, First Insurance financing, and the Company's capital lease, $39,654 of financing cost amortization, and $49,782 of warrant amortization.

The amount of interest for the nine months ended September 30, 2018, consisted primarily of $308,271 interest expense related to interest on the Company's term loan from Oxford Finance, $82,636 of financing cost amortization, and $105,568 of warrant amortization. The amount of interest and other expense for the nine months ended September 30, 2017, consisted primarily of $449,300 interest expense related to the Company's term loan from Oxford Finance, $130,416 of financing cost amortization, $163,727 of warrant amortization and other items of $306.

The fair value of the warrants issued to Oxford Finance related to the term loan was recorded as a discount to the value of the note payable and is being amortized over the term of the loan. Financing costs incurred related to the term loan are also amortized over the term of the loan.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations are based on our consolidated financial statements, which have been prepared in accordance with GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements as well as the reported revenues and expenses during the reporting periods. On an on-going basis, we evaluate our estimates and judgments related to our operating costs. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ significantly from these estimates under different assumptions or conditions.

Our critical accounting policies include:

Revenue recognition

Effective January 1, 2018, the Company adopted Accounting Standards Codification, or ASC, Topic 606, *Revenue from Contracts with Customers* (Topic 606), using the full retrospective transition method. Under this method, the Company would have been required to revise its financial statements, if applicable, for the years ended December 31, 2016 and 2017, and applicable interim periods within those years, as if Topic 606 had been effective for those periods. However, Topic 606 did not have any impact on the Company's revenue recognition upon adoption. This standard applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, collaboration arrangements and financial instruments. Under Topic 606, an entity recognizes revenue when its customer obtains control of promised goods or services in an amount that reflects the consideration which the entity expects to receive in exchange for those goods and services. To determine revenue recognition for arrangements that an entity determines are within the scope of Topic 606, the entity performs the following five steps: (i) identify the contract(s) with the customer(s); (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that the entity will collect the consideration it is entitled to in exchange for the goods and services it transfers to the customer. At contract inception, the Company assesses the goods or services promised within each contract that falls under the scope of Topic 606, determines those that are performance obligations and assesses whether each promised good or service is distinct. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

License and Other Revenues

The Company enters into licensing agreements which are within the scope of Topic 606, under which it licenses certain of its product candidates' rights to third parties. The terms of these arrangements typically include payment of one or more of the following: non-refundable, up-front license fees; development, regulatory and commercial milestone payments; and royalties on Gross Profit of the licensed product, which will be classified as royalty revenues, if and when earned.

In determining the appropriate amount of revenue to be recognized as it fulfills its obligation under each of its agreements, the Company performs the five steps described above. As part of the accounting for these arrangements, the Company must develop assumptions that require judgment to determine the stand-alone selling price, which may include forecasted revenues, development timelines, reimbursement of personnel costs, discount rates and probabilities of technical and regulatory success.

Licensing of Intellectual Property – If the license to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenue from non-refundable, up-front fees allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are bundled with other performance obligations, the Company utilizes judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from non-refundable, up-front fees. The Company evaluates the measure of progress each reporting period, and, if necessary, adjusts the measure of performance and related revenue recognition.

Milestone Payments – At the inception of each arrangement that includes development milestone payments, the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal will not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the control of the Company or the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis, for which the Company recognizes revenue as or when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, the Company re-evaluates the probability of achievement of such development milestones and any related constraint and, if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect license, collaboration and other revenues and earnings in their period of adjustment. To date, the Company has not recognized any milestone payments, because the milestones are not within the control of the Company and the technology is at an early stage of development, or the licensee has the ability to terminate the agreement before the milestone payment is due.

Royalties – For arrangements that include sales-based royalties, including milestone payments based on the level of sales, and for which the license is deemed to be the predominant item to which royalties relate, the Company recognizes revenue at the later of (i) when the related sales occur or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue from its license agreements.

Clinical trial expenses

We accrue clinical trial expenses based on work performed. In determining the amount to accrue, we rely on estimates of total costs incurred based on the enrollment of subjects, the completion of trials and other events defined in contracts. We follow this method because we believe reasonably dependable estimates of the costs applicable to various stages of a clinical trial can be made. However, the actual costs and timing of clinical trials are highly uncertain, subject to risks, and may change depending on several factors. Differences between the actual clinical trial costs and the estimated clinical trial costs that we have accrued in any prior period are recognized in the subsequent period in which the actual costs become known. Historically, these differences have not been material; however, material differences could occur in the future.

Consideration of Impairment of Goodwill

The Company maintains a goodwill balance of $6,826,003 on its balance sheet as of September 30, 3018 and December 31, 2017, and tests for impairment at least annually and whenever there has been a material change in the Company by applying GAAP principles related to ASC 350 *Intangibles – Goodwill and Other* (ASC 350). Based on a qualitative analysis of the Company's products in the pipeline as of September 30, 2018, the $4.0 million in revenue earned during the quarter, and a potential new indication for the Company's lead antibody program, MVT-5873, for the treatment of pancreatitis, the Company concluded there was no goodwill impairment as of September 30, 2018. The goodwill was established in connection with the merger of MabVax Therapeutics, Inc. a Delaware corporation, with a subsidiary of the Company on July 8, 2014, pursuant to an Agreement and Plan of Merger, dated May 12, 2014, by and among the Company, a subsidiary of the Company and MabVax Therapeutics, Inc. as amended June 30, 2014 and July 7, 2014 (the "Merger"), whereby MabVax Therapeutics, Inc. is the surviving company in the Merger, as a wholly-owned subsidiary of the Company.

Stock-based compensation

Our stock-based compensation programs include grants of stock options and restricted stock to employees, non-employee directors and non-employee consultants. Stock-based compensation cost is measured at the grant date, based on the calculated fair value of the award, and is recognized as an expense, under the straight-line method, over the employee, non-employee director or non-employee consultant's requisite service period (generally the vesting period of the equity grant).

We account for equity instruments, including stock options and restricted stock, issued to employees and non-employees in accordance with authoritative guidance for equity-based payments. Stock options issued are accounted for at their estimated fair value determined using the Black-Scholes-Merton option-pricing model, and restricted stock is accounted for using the grant date fair value of our common stock granted. The fair value of options and restricted stock granted to non-employees is re-measured as they vest, and the

resulting increase in value, if any, is recognized as expense during the period the related services are rendered.

Income taxes

Significant judgment is required by management to determine our provision for income taxes, our deferred tax assets and liabilities, and the valuation allowance to record against our net deferred tax assets, which are based on complex and evolving tax regulations. Our tax calculation is impacted by tax rates in the jurisdictions in which we are subject to tax and the relative amount of income earned in each jurisdiction. Our deferred tax assets and liabilities are determined using the enacted tax rates expected to be in effect for the years in which those tax assets are expected to be realized.

The effect of an uncertain income tax position is recognized as the largest amount that is "more-likely-than-not" to be sustained under audit by the taxing authority. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained.

The realization of our deferred tax assets is dependent upon our ability to generate sufficient future taxable income. We establish a valuation allowance when it is more-likely-than-not that the future realization of all or some of the deferred tax assets will not be achieved. The evaluation of the need for a valuation allowance is performed on a jurisdiction-by-jurisdiction basis, and includes a review of all available evidence, both positive and negative. As of September 30, 2018, the Company concluded that it was more-likely-than-not that its deferred tax assets would not be realized, and a full valuation allowance has been recorded.

The above listing is not intended to be a comprehensive list of all our accounting policies. In many cases, the accounting treatment of a transaction is specifically dictated by GAAP. See our audited consolidated financial statements and notes thereto included in our 2017 Annual Report on Form 10-K, which contain additional accounting policies and other disclosures required by GAAP.

LIQUIDITY AND CAPITAL RESOURCES

To date, we have funded our operations primarily through upfront payments from asset sales and license agreements, government grants, proceeds from the sale of common and preferred stock, the issuance of debt, the issuance of common stock in lieu of cash for services, payments from collaborators and interest income. We have experienced negative cash flow from operations each year since our inception. As of September 30, 2018, we had an accumulated deficit of $118,349,884. We expect to continue to incur increased expenses, resulting in losses, over the next several years due to, among other factors, our continuing and planned clinical trials and anticipated research and development activities, unless we can achieve additional licenses or asset sales of our product candidates that are under development, or revenues from research collaborations or services. There can be no assurance that we will be able to achieve additional license and sales revenue, or that such revenues would be large enough to offset our operating expenses. We had cash of $951,751 and a working capital deficit of $6,334,244 as of September 30, 2018. We also have approximately $2.4 million in debt maturing in 2019.

	Nine Months Ended September 30,	
	2018	**2017**
Cash provided by (used in):		
Operating activities	$ (2,620,437)	$ (8,702,932)
Investing activities	$ —	$ (21,072)
Financing activities	$ 2,686,478	$ 3,897,063

Net cash used in operating activities was $2,620,437 for the nine months ended September 30, 2018, compared to $8,702,932 for the same period a year ago. The net cash used in both periods was primarily attributable to the net losses, adjusted to exclude certain non-cash items, primarily stock-based compensation and amortization of finance costs related to the term loan. Net cash used in operating activities for the nine months ended September 30, 2018 was also impacted by a decrease of $437,094 in accrued clinical operations and site costs and an increase of $1,356,273 in accounts payable related primarily to unpaid professional fees.

The net cash used in investing activities for the nine months ended September 30, 2018 and 2017, amounted to $0 and $21,072, respectively.

Net cash provided by financing activities for the nine months ended September 30, 2018 was $2,686,478. Net cash provided by financing activities was $3,897,063 for the nine months ended September 30, 2017. Net cash provided by financing activities for the nine months ended September 30, 2018 was attributable to the fundraising from the February 2018 Private Placements and May 2018 Private Placements. Net cash provided by financing activities for the nine months ended September 30, 2017 was attributable to the net proceeds from the May 2017 Public Offering, a private offering that closed on May 3, 2017, in which the Company sold 850 shares of Series H Preferred Stock for an aggregate purchase price of $850,000 before offering costs of $29,429, and a private placement and underwritten offering in August 2017 and two registered direct offerings in September 2017.

Overview of 2018 Private Placements

Between February 2 and February 10, 2018, the Company entered into separate purchase agreements with investors pursuant to which the Company sold (i) shares of its common stock, (ii) shares of its convertible preferred stock, and (iii) warrants to purchase shares of common (the "February 2018 Private Placements"). From April 30 to May 2, 2018, the Company entered into separate purchase agreements with investors pursuant to which we agreed to sell shares of its common stock and convertible preferred stock (the "May 2018 Private Placements"). No financial advisor was used in connection with the February 2018 Private Placements nor the May 2018 Private Placements.

The securities issued in connection with the February 2018 Private Placements and the May 2018 Private Placements were offered and sold solely to accredited investors in reliance on the exemption from registration afforded by Rule 506 of Regulation D and Section 4(a)(2) of the Securities Act. The Company entered into separate registration rights agreements with each of the investors in the February 2018 Private Placements and the May 2018 Private Placements, pursuant to which the Company agreed to undertake to file a registration statement to register the resale of the shares of common stock and the shares of common stock underlying the warrants and preferred stock. The Company also agreed to use reasonable best efforts to cause such registration statement to be declared effective and to maintain the effectiveness of the registration statement until all of such shares of common stock have been sold or are otherwise able to be sold pursuant to Rule 144 under the Securities Act, without any restrictions.

February 2018 Private Placements

In connection with the February 2018 Private Placements, the Company sold (i) an aggregate of 555,562 shares of its common stock for an aggregate purchase price of $1,250,000, or $2.25 per share, (ii) 5,000 shares of our newly designated 0% Series M Convertible Preferred Stock (the "Series M Preferred Stock") for an aggregate purchase price of $1,500,000, or $300.00 per share, and (iii) warrants to purchase up to an aggregate of 855,561 shares of common stock each with an exercise price of $2.70 per share. The net proceeds of the February 2018 Private Placements were $2,700,000 after transaction costs of $50,000.

May 2018 Private Placements

In connection with the May 2018 Private Placements, the Company agreed to sell (i) 218,182 shares of common stock at an aggregate purchase price of $240,000, or $1.10 per share, and (ii) 5,363.64 shares of newly designated 0% Series N Convertible Preferred Stock (the "Series N Preferred Stock") at an aggregate purchase price of $590,000, or $110.00 per share. The following investors in the May 2018 Private Placements also invested in the February 2018 Private Placements (the "Prior Investors"): GRQ Consultants Inc., Roth 401K FBO Renee Honig; GRQ Consultants Inc., Roth 401K FBO Barry Honig; Melechdavid, Inc.; Grander Holdings Inc. 401K; Robert S. Colman Trust UDT 3/13/85; Ben Brauser; Joshua A. Brauser; Daniel A. Brauser; Gregory Aaron Brauser; Erick E. Richardson; and Ronald B. Low.

Under the terms of the May 2018 Private Placements, we were required to offer an aggregate of 12,777.77 shares (the "May 2018 Inducement Shares") of newly designated 0% Series O Preferred Stock (the "Series O Preferred Stock") to investors who previously purchased securities in the February 2018 Private Placements and who also purchased securities in the May 2018 Private Placements with an aggregate purchase price of at least 40% of their investment amounts in the February 2018 Private Placements. Based on the closing of the offering, and participation of the Prior Investors who invested an aggregate of $830,000 (the "May 2018 Inducement Investors"), the Company issued an aggregate of 10,605.56 May 2018 Inducement Shares in the form of Series O Preferred Stock convertible into an aggregate of 1,060,556 shares of common stock. The May 2018 Private Placements closed on May 15, 2018, with the Company receiving gross proceeds totaling $830,000.

Working Capital

Our working capital deficit was $6,334,244 at September 30, 2018, as compared to a working capital deficit of $4,598,748 at December 31, 2017. The decrease in working capital was primarily due to increased capital usage during the first nine months of 2018 primarily related to the Company's clinical development programs and professional services.

Going Concern

We believe our cash and cash equivalents as of September 30, 2018, will be sufficient to fund our projected operating requirements into December 2018. In order to continue our current and future operations and continue our clinical product development programs beyond December 2018, we will depend substantially on our ability to obtain upfront and milestone payments from potential additional license and/or partnering agreements for use of our technologies in certain fields of use and on raising capital through other financing transactions in a timely manner, of which we can make no assurances that any such transaction will occur. As discussed in Item 1 of Part II of this Quarterly Report, we cannot conclude that any future registration statements that we may file with the SEC will be declared effective during the pendency of the SEC Action (as defined in Item 1 of Part II of this Quarterly Report). As a result, our ability to raise capital is and will likely remain severely impaired during the pendency of the SEC Action, and certain capital raising structures involving the registration of our securities with the SEC upon which we have heavily relied in the past to fund our operations may not be available to us for the immediate future. Further, we still owe a balance of approximately $2.8 million to Oxford Finance for which principal payments will begin to be made in January 2019 under the Second Amendment to the Loan and Security Agreement (see Note 6). We are uncertain about our ability to raise sufficient funds to continue our existing operations after December 2018 without additional licensing and/or collaborating transactions and without financing structures that do not involve the use of or reliance upon our ability to register securities with the SEC. We have been exploring potential additional licensing and/or partnering transactions and other arrangements through which the value of our Company could be enhanced. We may raise funds through such potential arrangements with collaborators or others that may require us to sell product candidates that we might otherwise seek to develop or commercialize independently. Our failure to enter into licensing and/or partnering transactions or raise capital when needed could materially harm our business, financial condition and results of operations.

We anticipate we will continue to incur substantial net losses into the foreseeable future as we: (i) continue our Phase I clinical trials of MVT-5873 in combination with chemotherapy and our Phase I clinical trial of our radioimmunotherapy product candidate MVT-1075 for the treatment of various cancers, (ii) continue preclinical development activities related to developing other product candidates in our library, (iii) monitor patients in clinical trials that have already completed their treatment regimens, and (iv) incur legal expenses related to the SEC Action. Based on management's assumptions for continuing to develop its existing pipeline of product candidates without additional funding or licensing portions of our technology for particular uses, we expect we will have sufficient funds to meet our obligations into December 2018. We may also incur costs and expenses in connection with liabilities under our organizational documents and indemnification agreements that we have with our officers and directors who may individually incur expenses in relation to the SEC Action.

We plan to continue to fund our debt maturities, research and development and operating activities through additional strategic partnerships or other arrangements with organizations that have capabilities and/or products that are complementary to our own capabilities and/or product candidates, licensing arrangements, and through public or private equity financings and debt financings or other arrangements if the strategic transactions are not timely, if at all. However, we cannot be sure that such strategic transactions or additional funds will be available on reasonable terms, or at all. If we are unable to secure strategic transactions or adequate additional funding, we may be forced to reduce spending, extend payment terms with suppliers, liquidate assets where possible, suspend or curtail planned programs and/or cease our operations entirely. In addition, if we do not meet our payment obligations to third parties as they come due, including any payment we owe to Oxford Finance, we may be subject to litigation claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to our management. Any of these actions could materially harm our business and results of operations.

If we raise additional funds by issuing equity securities, substantial dilution to our existing stockholders would result. If we raise additional funds by incurring debt financing, the terms of the debt may involve significant cash payment obligations as well as covenants and specific financial ratios that may restrict our ability to operate our business.

Our future capital uses and requirements depend on numerous factors, including the following:

- our ability to establish license agreements with third parties and reliance on receipt of payments from milestones;
- the costs associated with conducting Phase I and II clinical trials;
- the costs and timing of obtaining regulatory approvals;
- our ability to establish, and the scope of, any new research collaborations;
- our ability to raise capital on attractive terms, if at all, during the pendency of the SEC Action;
- the costs and timing of obtaining, enforcing and defending our patent and IP rights; and
- competing technological and market developments.

Future Contractual Obligations

On September 2, 2015, the Company entered into the Lease with AGP Sorrento Business Complex, L.P., for certain premises consisting of office and laboratory space in buildings located at 11535 Sorrento Valley Rd., San Diego, California, to serve as the Company's New Premises. Because certain tenant improvements needed to be made to the New Premises before the Company could take occupancy, the term of the Lease did not commence until the New Premises were ready for occupancy, which was on February 4, 2016. The Lease terminates on February 28, 2022, unless earlier terminated in accordance with the Lease. Pursuant to the terms of the Lease, the current monthly base rent paid by the Company is $37,801, subject to annual increases as set forth in the Lease.

The Company has an option to extend the Lease term for a single, five-year period. If the Lease term is extended for the optional five-year period, the monthly base rent will be adjusted based on fair market rental value. In addition to rent, the Company agreed to pay a portion of the taxes and utility, maintenance and other operating costs paid or accrued relating to the ownership and operation of the property.

Our master lease and sublease of our facility located at 3165 Porter Drive in Palo Alto, California were terminated on February 28, 2013, and we entered into a termination agreement with ARE on February 19, 2013 to voluntarily surrender its premises. Because of the termination agreement, we were relieved of further obligations under the master lease and further rights to rental income under the sublease and paid a termination fee of approximately $700,000. In addition to the termination fee, if we receive $15 million or more in additional financing, in the aggregate, an additional termination fee of $590,504 will be due to ARE. The additional financing was achieved in 2015 and the termination fee is reflected on the condensed consolidated balance sheet as an accrued lease contingency fee.

Recently Issued Accounting Standards

See Note 1, "Adopted Accounting Standards" and "Accounting Standards Not Yet Adopted."

Off-Balance Sheet Arrangements

We have no material off-balance sheet arrangements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Interest Rate Sensitivity

Our cash and cash equivalents of $951,751 at September 30, 2018, consisted of cash and money market funds, all of which will be used for working capital purposes. We do not enter into investments for trading or speculative purposes. Our primary exposure to market risk is related to the variability of interest rates under the Loan Agreement (as defined in Note 6 to the Unaudited Condensed Consolidated Financial Statements included in Item 1 of Part I of this Quarterly Report) we entered into with Oxford Finance in January 2016. Under the Loan Agreement, the interest rate for the term loan is set monthly at an Index Rate plus 11.29%, where the Index Rate is the greater of the 30-day LIBOR rate or 0.21%. Interest is due on the first day of each month, in arrears, calculated based on a 360-day year. In addition, interest income on our deposits is affected by changes in the general level of interest rates in the United States. Because of the short-term nature of our cash and cash equivalents, we do not believe that we have any material exposure to changes in their fair values as a result of changes in interest rates. The continuation of historically low interest rates in the United States will limit our earnings on investments held in U.S. dollars.

We do not hold any derivative financial instruments or commodity-based instruments.

Item 4. Controls and Procedures

Disclosure Controls and Procedures

As required by Rules 13a-15 and 15d-15 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), the Company has evaluated, with the participation of management, including the Chief Executive Officer and the Chief Financial Officer, the effectiveness of its disclosure controls and procedures (as defined in such rules) as of the end of the period covered by this report. The Chief Executive Officer and Chief Financial Officer concluded that the Company's disclosure controls and procedures are effective as of September 30, 2018.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. For example, prior to September 30, 3018, the Company relied upon filings by investors who are required to file their ownership positions on Schedules 13D and 13G. In light of previously unavailable information that the Company learned in connection with the SEC Action, the Company believes it can no longer rely upon such filings by any of the Aggregated Investors (as defined in Item 12 of Part III of the Company's Amendment to Annual Report on Form 10-K/A filed with the SEC on October 15, 2018) on a going forward basis. In order to continue to ensure internal control is maintained on a going forward basis, which is likely to continue until such SEC Action is closed, the Company will not rely on the Schedules 13D and 13G filed by any Aggregated Investor but will aggregate the beneficial ownership of all Aggregated Investors for reporting purposes and when applying any applicable conversion blockers. The Company will continue to aggregate the holdings of all the Aggregated Investors until the Company is confident, based on facts and information received from an individual or entity or through the Company's own investigation and verification of facts reasonably attainable, that the individual or entity should no longer be included as an Aggregated Investor. Projections of any evaluation of effectiveness to future periods, including assessment of beneficial ownership by the Aggregated Investors, are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Changes in Internal Control over Financial Reporting

As required by Rule 13a-15(d) of the Exchange Act, our management, including our principal executive officer and our principal financial officer, conducted an evaluation of the internal control over financial reporting to determine whether any changes occurred during the period covered by this Quarterly Report on Form 10-Q that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on that evaluation, our principal executive officer and principal financial officer concluded there were no changes in our internal controls over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that could significantly affect internal controls over financial reporting as of September 30, 2018.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

On January 29, 2018, the Company received notice from the SEC of an investigation (along with the SEC Complaint, defined below, the "SEC Action"). We believe the SEC is investigating (i) potential violations by the Company and its officers, directors and others of Section 10(b) of the Securities and Exchange Act of 1934, as amended (as amended, the "Exchange Act") and Section 17(a) of the Securities Act of 1933, as amended (as amended, the "Securities Act"); and (ii) potential violations by multiple holders of our preferred stock of the reporting and disclosure requirements imposed by Section 13(d) of the Exchange Act and pursuant to Schedules 13D and 13G. We further believe the SEC Action pertains to our relationships with the Investor Defendants (defined below), including (i) the circumstances under which the Investor Defendants invested in the Company and whether they have acted as an undisclosed group in connection with their investment; (ii) the manner with or in which the Investor Defendants may have sought to control or influence the Company and its leadership since their respective investments (and the extent to which those efforts to control or influence have been successful); and (iii) our prior disclosures regarding the control of the Company and beneficial ownership of our common and preferred stock included in our registration statements filed in 2017 and 2018 and in our Exchange Act reports.

On September 7, 2018, the SEC filed a complaint (the "SEC Complaint") in the U.S. District Court for the Southern District of New York against the following individuals and entities who have purchased securities of the Company: Barry C. Honig, John Stetson, Michael Brauser, John R. O'Rourke III, Mark Groussman, Phillip Frost, Alpha Capital Anstalt, ATG Capital LLC, Frost Gamma Investments Trust, GRQ Consultants, Inc., Grander Holdings, Inc., Melechdavid, Inc., OPKO Health, Inc., HS Contrarian Investments, LLC, and Southern Biotech, Inc. (collectively, the "Investor Defendants"), and against others who we believe have not made any investment in the Company. *SEC v. Honig, et al.*, No. 1:18-cv-01875 (S.D.N.Y. 2018). In the Complaint, the SEC alleges a variety of misconduct with respect to the Investor Defendants' transactions and/or relationships with three public issuers, including a public issuer identified as "Company C," which we understand to be MabVax. With respect to "Company C" in particular, the SEC alleges that some of the Investor Defendants manipulated the price of the Company's securities by writing, or causing to be written, false or misleading promotional articles, and a variety of other manipulative trading practices. The SEC further alleges that some of the Investor Defendants filed false reports of their beneficial ownership or failed to file reports of their beneficial ownership when required to do so. The SEC claims that, by engaging in this and the other alleged actions in the Complaint, the Investor Defendants and other defendants violated the anti-fraud and many other provisions of the Exchange Act, the Securities Act and SEC Rules promulgated thereunder. The SEC Complaint does not assert any claims against the Company or any of its directors or officers, nor otherwise allege that they were culpable participants in the misconduct allegedly undertaken by the Investor Defendants.

We have cooperated with the SEC in connection with the SEC Action. Although the SEC has not asserted claims against the Company or any of its directors or officers, we cannot predict whether the SEC Action ultimately will conclude in a manner adverse to the Company or any of its directors and officers, or in a manner adverse to the Investor Defendants or other of the Company's current or former stockholders. We also cannot predict when the SEC Action or any related matters may conclude, or how any such matters or resolution may impact how the Company is perceived by the market, potential partners and potential investors in our securities. In the past, the SEC informed us it would not declare effective any registration statements registering our securities effective during the pendency of the SEC Action.

Company Filed Complaint Against Sichenzia Ross Ference LLP

On September 10, 2018, the Company filed, in the Superior Court of California, County of San Diego, a complaint (the "Sichenzia Complaint") against Sichenzia Ross Ference LLP, a law firm that previously represented the Company in certain corporate, securities, and SEC matters ("Sichenzia"), and eight current Sichenzia partners, and one former Sichenzia partner, Harvey Kesner, *MabVax Therapeutics Holdings, Inc. v. Sichenzia Ross Ference LLP et al.,* No. 37-2018-00045609-CU-PN-CTL. The Sichenzia Complaint asserts claims for negligent professional practice, breach of fiduciary duty, breach of contract, unjust enrichment, deceit, and fraud by the defendants. The Company is evaluating additional claims it may have against others in connection with the same or similar subject matter.

Delaware Order Granting Petition for Relief

On September 20, 2018, the Court entered an order validating (i) issuances of common stock upon conversions of the Company's preferred stock occurring between June 30, 2014 and February 12, 2018, and (ii) stockholder approval of corporate actions presented to the Company's stockholders from June 30, 2014 to February 12, 2018. In so doing, the Court granted the Delaware Petition captioned *In re: MabVax Therapeutics Holdings, Inc.*, filed on July 27, 2018, in order to rectify the uncertainty regarding whether shares of our common stock were validly issued upon conversion of our preferred stock from June 30, 2014 to February 12, 2018.

Class Action and Derivative Complaints

***In re MabVax Therapeutics Securities Litigation*, Case No. 18-cv-1160-BAS-NLS**

On June 4, 2018, and August 3, 2018, two securities class action complaints were filed by purported stockholders of the Company in the United States District Court for the Southern District of California (the "U. S. District Court") against the Company and certain of its current officers. On September 6, 2018, the U.S. District Court consolidated the two actions and appointed lead plaintiffs. On October 10, 2018, lead plaintiffs filed their consolidated complaint, which, in addition to naming the Company and certain current officers as defendants, also names certain investors as defendants. The consolidated complaint alleges, among other things, that the defendants violated Sections 10(b) and 20(a) of the Exchange Act, and Rule 10b-5 thereunder, by misleading investors about problems with the Company's internal controls, improper calculation of its beneficial ownership, and improper influence by certain investors. The consolidated complaint also alleges that some of the investor defendants violated Section 9 of the Exchange Act by manipulating the Company's stock price. The consolidated complaint seeks unspecified damages, interest, fees and costs. The current deadline to respond to the consolidated complaint is December 6, 2018.

***Liesman v. Hansen et al.*, Case No. 18-cv-2237-BTM-WVG**

On September 26, 2018, a shareholder derivative complaint was filed in the United States District Court for the Southern District of California. The complaint arises from similar allegations as *In re MabVax Therapeutics Securities Litigation* but asserts a state law breach of fiduciary duty claim against certain of the Company's current and former directors and officers. In particular, the complaint alleges that the defendants breached their fiduciary duties by failing to implement the necessary controls to ensure that certain financial disclosures and disclosures concerning stock ownership were accurate. Plaintiff seeks, on behalf of the Company, damages, fees, costs, and equitable relief.

***Jackson v. Hansen et al.*, Case No. 18-cv-2302-BAS-MSB-BGS**

On October 4, 2018, a shareholder derivative complaint was filed in the United States District Court for the Southern District of California. The complaint arises from similar allegations as *In re MabVax Therapeutics Securities Litigation* and *Liesman v. Hansen et al.* but, in addition to a breach of fiduciary duty claim, also includes causes of action for unjust enrichment, abuse of control, gross mismanagement and waste of corporate assets. Plaintiff seeks, on behalf of the Company, damages, fees, costs, and equitable relief. The deadline to respond to the complaint is December 21, 2018.

Item 1A. Risk Factors

RISK FACTORS

Other than stated below, there have been no material changes in or additions to the Risk Factors included in our Annual Report on Form 10-K, as amended on Form 10-K/A on October 15, 2018, for the year ended December 31, 2017 and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2018.

The rights of our common stockholders are limited by and subordinate to the rights of the holders of Series D Preferred Stock, Series E Preferred Stock, Series I Preferred Stock, Series J Preferred Stock, Series K Preferred Stock, Series L Preferred Stock, Series M Preferred Stock, Series N Preferred Stock and Series O Preferred Stock; these rights may have a negative effect on the value of shares of our common stock.

As of November 13, 2018, the holders of our Series D Convertible Preferred Stock (the "Series D Preferred Stock"), Series E Convertible Preferred Stock (the "Series E Preferred Stock"), Series I Convertible Preferred Stock (the "Series I Preferred Stock"), Series J Convertible Preferred Stock (the "Series J Preferred Stock"), Series K Convertible Preferred Stock (the "Series K Preferred Stock"), Series L Convertible Preferred Stock (the "Series L Preferred Stock"), Series M Convertible Preferred Stock (the "Series M Preferred Stock"), Series N Convertible Preferred Stock (the "Series N Preferred Stock"), and Series O Convertible Preferred Stock (the "Series O Preferred Stock") have rights and preferences generally superior to those of the holders of common stock. The existence of these superior rights and preferences may have a negative effect on the value of shares of our common stock. These rights are more fully set forth in the Series D Preferred Stock certificate of designations, Series E Preferred Stock certificate of designations, Series I Preferred Stock certificate of designations, Series J Preferred Stock certificate of designations, Series K Preferred Stock certificate of designations, Series L Preferred Stock certificate of designations, Series M Preferred Stock certificate of designations, Series N Preferred Stock certificate of designations, and Series O Preferred Stock certificate of designations, respectively, and include, but are not limited to the right to receive a liquidation preference, prior to any distribution of our assets to the holders of our common stock, in an amount equal to $0.01 per share or $441 for the Series D Preferred Stock, $0.01 per share or $333 for the Series E Preferred Stock, $0.01 per share or $6,456 for the Series I Preferred Stock, $687.50 per share or approximately $531,252 for the Series J Preferred Stock, $0.01 per share or $632 for the Series K Preferred Stock, $100.00 per share or approximately $4.6 million for the Series L Preferred Stock, $300 per share or approximately $1.5 million for the Series M Preferred Stock, $0.01per share or approximately $54 for the Series N Preferred Stock and $0.01 per share or approximately $106 for Series O Preferred Stock.

We may not be able to achieve compliance for listing on a national exchange which could make it more difficult for investors to sell their shares

Our common stock was delisted on The NASDAQ Capital Market on July 11, 2018, and currently trades on the OTC Pink market. Delisting of our common stock effectively results in our common stock being designated a "penny stock" is that securities broker-dealers cannot recommend the shares but must trade it on an unsolicited basis. Penny stock rules require a broker-dealer, prior to a transaction in a penny stock not otherwise exempt from those rules, to deliver a standardized risk disclosure document prepared by the SEC, which specifies information about penny stocks and the nature and significance of risks of the penny stock market. A broker-dealer must also provide the customer with bid and offer quotations for the penny stock, the compensation of the broker-dealer and sales person in the transaction, and monthly account statements indicating the market value of each penny stock held in the customer's account. In addition, the penny stock rules require that, prior to a transaction in a penny stock not otherwise exempt from those rules; the broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive the purchaser's written agreement to the transaction. These disclosure requirements may have the effect of reducing the trading activity in the secondary market for shares that become subject to those penny stock rules. Under such circumstances, shareholders may find it more difficult to sell, or to obtain accurate quotations, for our common stock, and our common stock would become substantially less attractive to certain purchasers such as financial institutions, hedge funds and other similar investors.

Future sales of our securities, or the perception in the markets that these sales may occur, could depress our stock price.

Additional equity financings or other share issuances by us, including shares issued in connection with strategic alliances and corporate partnering transactions, could adversely affect the market price of our common stock. As of November 13, 2018, we had 7,869,860 shares held by our existing shareholders available for resale pursuant to Rule 144 or resale registration statements, upon conversion of Series D Preferred Stock, Series E Preferred Stock, Series I Preferred Stock, Series J Preferred Stock, Series K Preferred Stock, Series L Preferred Stock, Series M Preferred Stock, Series N Preferred Stock, and Series O Preferred Stock. Sales by existing stockholders of a large number of shares of our common stock in the public market or the perception that additional sales could occur could cause the market price of our common stock to drop. Moreover, to the extent that additional shares of our outstanding stock are registered, or otherwise become eligible for resale, and are sold, or the holders of such shares are perceived as intended to sell them, this could further depress the market price of our common stock. These factors could also make it more difficult for us to raise capital or make acquisitions through the issuance of additional shares of our common stock or other equity securities.

The number of shares of issued and outstanding common stock as of October 31, 2018, represents approximately 46% of our fully diluted shares of common stock. Additional issuances of shares of common stock upon conversion and/or exercise of preferred stock, options to purchase common stock and warrants to purchase common stock will cause substantial dilution to existing stockholders.

At November 13, 2018, we had 9,254,582 shares of common stock issued and outstanding. Up to an additional 7,869,860 shares may be issued upon conversion of our Series D Preferred Stock, Series E Preferred Stock, Series I Preferred Stock, Series J Preferred Stock, Series K Preferred Stock, Series L Preferred Stock; Series M Preferred Stock; Series N Preferred Stock and Series O Preferred Stock 1,221,935 shares issuable upon exercise of warrants at a weighted average price of $7.15; 1,820,589 shares upon exercise of all outstanding options to purchase our common stock at a weighted average price of $7.44, resulting in a total of up to 20,166,968 shares that may be issued and outstanding. The issuance of any and all of the 10,912,384 shares issuable upon exercise or conversion of our outstanding convertible securities will cause substantial dilution to existing stockholders and may depress the market price of our common stock.

Our common stock trades on the OTC Pink Market, therefore compliance with applicable state securities laws may be required for subsequent offers, transfers and sales of the shares of common stock offered hereby.

Our common stock is traded on the OTC Pink and not currently eligible to be listed on a national securities exchange, therefore, subsequent transfers of the shares of our common stock offered hereby by U.S. holders may not be exempt from state securities laws. In such event, it will be the responsibility of the holder of shares or warrants to register or qualify the shares for any subsequent offer, transfer or sale in the United States or to determine that any such offer, transfer or sale is exempt under applicable state securities laws.

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

None.

Item 3. Defaults Upon Senior Securities.

Oxford Finance Assertion of Events of Default under the Loan Agreement – On August 14, 2018, Oxford Finance gave Notice asserting that certain "Events of Default" have occurred and are continuing under Sections 8.3 and 8.11 the Loan Agreement. Specifically, Oxford Finance makes general reference to the Alleged Default Events. In the Notice, Oxford Finance does not specify which provisions of the Loan Agreement are allegedly implicated by each of the Alleged Default Events, stating only generally its position that Events of Default have occurred under Sections 8.3 and 8.11 of the Loan Agreement and other Events of Default "may" have occurred. The Company informed Oxford Finance that it disputes the Alleged Default Events, individually or collectively, constitute a "Material Adverse Change" or other event of default under the Loan Agreement. In addition, the Company already engaged a new auditor, Haskell & White LLP, effective August 22, 2018, and on September 20, 2018, the Court ratified the Delaware Petition. Also, on October 16, 2018, the Company applied for listing on the OTCQB Marketplace and believes it now meets the requisite eligibility requirements; however, there can be no assurance of being listed while the SEC Action is underway. As of November 13, 2018, Company management has been meeting at least weekly since September 30, 2018, to keep Oxford Finance informed on potential fund-raising activities.

For additional information, see Note 6 to Unaudited Condensed Consolidated Financial Statements included in Item 1 of Part I of this Quarterly Report.

Item 4. Mine Safety Disclosures.

None.

Item 5. Other Information.

None.

Item 6. Exhibits.

The following is a list of exhibits filed as part of this Quarterly Report on Form 10-Q.

Exhibit No.	Exhibit Name	Filed with this Form 10-Q
10.1 †*	Asset Purchase and License Agreement with Boehringer Ingelheim International GmbH	X
31.1*	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	X
31.2*	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	X
32.1*	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X
101*	Interactive data file	

* Furnished herewith
† Confidential treatment requested for portions of this exhibit. Confidential materials omitted and filed separately with the SEC.

SIGNATURES

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

Date: November 13, 2018

MABVAX THERAPEUTICS HOLDINGS, INC.

By: /s/ J. David Hansen
J. David Hansen
President and Chief Executive Officer
(Principal Executive Officer authorized to sign on behalf of the registrant)

By: /s/ Gregory P. Hanson
Gregory P. Hanson
Chief Financial Officer
(Principal Financial and Accounting Officer authorized to sign on behalf of the registrant)

CONFIDENTIAL TREATMENT REQUESTED

Exhibit 10.1

ASSET PURCHASE AND LICENSE AGREEMENT

by and between

BOEHRINGER INGELHEIM INTERNATIONAL GMBH

and

MABVAX THERAPEUTICS HOLDINGS, INC.

and

MABVAX THERAPEUTICS, INC.

BII Contract No: [***]

Portions of this Exhibit, indicated by the mark "[***],"* were omitted and have been filed separately with the Secretary of the *Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Table of Contents

Portions of this Exhibit, indicated by the mark "[***]," were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

CONFIDENTIAL TREATMENT REQUESTED

ASSET PURCHASE AND LICENSE AGREEMENT

This Asset Purchase and License Agreement (the "**Agreement**") is made on July 4, 2018 (the "**Effective Date**") under the terms and conditions herein by and between **Boehringer Ingelheim International GmbH** having a principal place of business at Binger Strasse 173, 55216 Ingelheim, Germany, (hereinafter referred to as "**BII**"), **MabVax Therapeutics Holdings, Inc**., a corporation organized and existing under the laws of Delaware, USA, having its principal place of business at 11535 Sorrento Valley Road, Suite 400, San Diego, California 92121, and **MabVax Therapeutics Inc**., a corporation organized and existing under the laws of Delaware, USA, having its principal place of business at 11535 Sorrento Valley Road, Suite 400, San Diego, California 92121 (MabVax Therapeutics Holdings, Inc., and MabVax Therapeutics Inc. hereinafter referred to as "**MABVAX**").

RECITALS

WHEREAS, MABVAX owns or controls certain assets relating to [***] as further defined herein; and

WHEREAS, BII is a pharmaceutical company engaged in the research, development and commercialization of products useful in the treatment of human and animal diseases and conditions; and

WHEREAS, MABVAX wishes to sell to BII and BII wishes to purchase from MABVAX the Acquired Assets as defined herein.

NOW, THEREFORE, the Parties agree as follows:

1. DEFINITIONS

1.1 Except as expressly set forth herein, capitalized terms used in this Agreement, whether used in the singular or plural, shall have the meanings set forth below:

1.1.1 "Accounting Standards" shall mean the maintenance of records and books of accounts in accordance with International Financial Reporting Standards (IFRS) or Generally Accepted Accounting Principles (GAAP) or those accounting standards used in accordance with the German Handelsgesetzbuch (HGB), which standards or principles (as applicable) are currently used at the relevant time, and consistently applied by the applicable Party.

1.1.2 "Acquired Assets" shall mean all of MABVAX's right, title and interest in and to all of the assets owned or controlled by MABVAX relating solely and exclusively to the [***], consisting of (a) all [***] Patents, (b) all [***] Know-How, (c) all [***] Inventory, and (d) all Books and Records and Patent Files.

1.1.3 "Action" shall mean any dispute, controversy, claim, action, litigation, suit, cause of action, arbitration, mediation, oppositions, interferences or any proceeding by or before any mediator, arbitration panel or Governmental Entity, or any investigation, subpoena, or demand preliminary to any of the forgoing.

1.1.4 "Affiliate" means any corporation, firm, limited liability company, partnership, or other entity that directly or indirectly controls, or is controlled by, or is under common control with a Party. For the purpose of this definition only, "control" means ownership, directly or through one or more Affiliates, of fifty percent (50%) (or such lesser percentage which is the maximum allowed to be owned by a foreign entity in a particular jurisdiction) or more of the shares of stock entitled to vote for the election of directors in the case of a corporation, or fifty percent (50%) (or such lesser percentage which is the maximum allowed to be owned by a foreign entity in a particular jurisdiction) or more of the equity interests in the case of any other type of legal entity, or status as a general partner in any partnership, or any other arrangement whereby a Party controls or has the right to control the board of directors or equivalent governing body of a corporation or other entity.

1.1.5 "Applicable Law" means all applicable statutes, ordinances, regulations, rules, orders or guidance of any Regulatory Authority or other Governmental Entity or court of competent jurisdiction that may be in effect from time to time.

1.1.6 "Assignment and Assumption Agreement" shall mean the general assignment and assumption agreement to be executed by the Parties at Closing, substantially in the form attached as **Exhibit A**.

1.1.7 "Assumed Liabilities" shall have the meaning as defined in Section 2.2.

1.1.8 "Authorization" shall mean any legally required consent, authorization, approval, order, license, certificate or permit of or from, or declaration or filing with, any Governmental Entity, including without limitation, any legally required filing with any Governmental Entity and the subsequent expiration of any legally required waiting period under any antitrust laws.

1.1.9 "Bill of Sale" means the bill of sale to be executed by the Parties at Closing, substantially in the form of **Exhibit B**.

1.1.10 "BII Product" shall mean any pharmaceutical product developed by or on behalf of BII using the Acquired Assets.

1.1.11 "Books and Records" shall mean all of MABVAX's right, title, and interest in all books, records and other documents used for and solely and exclusively related to [***]. For clarity, Books and Records shall include original lab notebooks covering [***].

1.1.12 "Business Day" shall mean any day other than a Saturday, a Sunday, or a day on which commercial banks in Frankfurt am Main, Germany, or California, USA are authorized or required by law to remain closed.

1.1.13 "Calendar Quarter" means a period of three calendar months ending on March 31, June 30, September 30 or December 31 in any Calendar Year.

1.1.14 "Calendar Year" means each successive period of twelve (12) months commencing on January 1 and ending on December 31.

1.1.15 "Claim" shall mean any Action asserted by MABVAX against BII, or by BII against MABVAX.

1.1.16 "Clinical Trial" means any experiment in which a drug or therapy is administered or dispensed to, or used involving, one or more human subjects (including but not limited to a Phase I Clinical Trial, and a Phase III Clinical Trial).

1.1.17 "Closing" shall mean the closing of the transactions contemplated by this Agreement in accordance with the terms and upon the conditions set forth in this Agreement. The date upon which Closing occurs shall be July 5, 2018 (the "Closing Date").

1.1.18 "Combination Product" [***].

1.1.19 "Commercially Reasonable Efforts" shall mean efforts [***].

1.1.20 "Confidential Information" shall mean information and material, which is disclosed or provided in oral, electronic, written or other tangible or intangible form by a Party to another Party hereunder [***].

1.1.21 "Co-Packaged Product" [***].

1.1.22 "Effective Date" shall mean the date first written above.

1.1.23 "Encumbrance" means [***].

1.1.24 "Excluded Assets" shall mean MABVAX's right title and interest to (a) all cash and cash equivalents, (b) all trademarks, trade names and logos, (c) all accounts and notes receivable, and all claims, causes of action, defenses and rights of offset or counterclaim (at any time or in any manner arising or existing, whether choate or inchoate, known or unknown, contingent or non-contingent) not included in the Acquired Assets.

1.1.25 "Excluded Liabilities" shall have the meaning set forth in Section 2.2.

1.1.26 "Executive Official" shall mean a senior official of a Party, identified by each Party in **Schedule 1.1.261.1.26**, which may be updated at any time by providing written notice.

1.1.27 "Field" shall mean any and all uses; including diagnosis, treatment, palliation or prevention of a disease or medical [***] condition in humans [***].

1.1.28 "First Commercial Sale" means, in any country within the Territory, the first sale by BII, its Affiliates or Sublicensees in an arm's length transaction of the first BII Product to a Third Party other than a Sublicensee in such country in exchange for cash (or some equivalent to which value can be assigned) after Regulatory Approval for such BII Product has been granted in such country.

1.1.29 "Generic Competition" means and shall be deemed to exist in a particular country in the Territory with respect to a particular BII Product or Combination Product in a given Calendar Quarter if in such country during such Calendar Quarter [***] the aggregate unit sales of such Generic Product in such country, as measured by IQVIA (formerly IMS Health) standard units sold based on data provided by IQVIA (formerly IMS Health) or, if such data is not available, such other reliable data source as reasonably agreed upon by MABVAX and BII. If no data is commercially available, then the Parties shall agree upon a methodology for estimating the percentage unit-based market share of Generic Products in such country.

1.1.30 "Generic Product" means, with respect to a particular BII Product or Combination Product and a particular country, (a) any pharmaceutical product (other than the BII Product or Combination Product, as applicable) that contains the same active ingredient(s) in a comparable quality and quantity as such BII Product or Combination Product, as applicable irrespective of its pharmaceutical form and is approved under an Abbreviated New Drug Application (ANDA) or under 505(b)(2) of the United States Federal Food, Drug and Cosmetic Act or any similar abbreviated route of approval in such country, or (b) any biologic medicinal product (other than the BII Product or Combination Product, as applicable) that is a biosimilar of such BII Product, and, if the BII Product is a component of a Combination Product, a biosimilar of the Combination Product, and is approved under a biological product licensure application submitted by any person under 42 U.S.C. § 262(k) or any similar abbreviated route of approval in such country.

1.1.31 "Governmental Entity" shall mean any arbitrator, court, judicial, legislative, administrative, or regulatory agency, commission, department, board, or bureau or body or other government authority or instrumentality or any person or entity exercising executive, legislative, judicial, regulatory, or administrative functions of or pertaining to government, whether foreign or domestic, whether federal, state, provincial, municipal, or other.

1.1.32 "Improvement" shall mean any modifications, enhancements or improvements to a compound, product, technology or Intellectual Property.

1.1.33 "Initiation" means, with respect to a Clinical Trial, the first dosing of the first human subject in such Clinical Trial.

1.1.34 "Intellectual Property" shall mean all rights in Inventions, Patents, priority rights, copyrights, design rights, trade names, trademarks, service marks, trade secrets, Know-How, database rights, domain names and all other intellectual property rights (whether registered or unregistered) and all applications and rights to apply for any of them, anywhere in the world.

1.1.35 "Invention" shall mean any process, method, utility, formulation, composition of matter, article of manufacture, discovery or finding or improvement that is conceived and/or reduced to practice, whether patentable or not.

1.1.36 "Inventor" shall mean inventorship as determined by applicable (e.g., United States, European, or German) patent statutes, regulations, and supporting case law.

1.1.37 "Invoice" means an original invoice sent by MabVax Therapeutics Holdings, Inc. to BII with respect to any payment due hereunder, containing the information and meeting the requirements as set forth in **Schedule 1.1.37**, which shall be modified in the event of a change in the applicable legal requirements.

1.1.38 "Know-How" shall mean [***].

1.1.39 "Knowledge" means knowledge, information, belief or awareness, after reasonable investigation or diligence, of any MABVAX individuals, officers, directors and employees who participate in the management or operation of [***], including without limitation [***] as of the Closing Date.

1.1.40 "Major Market" means each of the USA, Germany, the United Kingdom, France, Italy, Spain and Japan.

1.1.41 "Material Adverse Effect" means any event, occurrence, fact, condition or change that would reasonably be expected to be materially adverse to or have a material adverse effect on (a) the ability of MABVAX to carry out its obligations under, and to consummate the transactions contemplated by, this Agreement, or (b) the Assumed Liabilities or the Acquired Assets, (c) BII's ability to further exploit the Acquired Assets, including without limitation the research, development, commercialization or other exploitation of the Acquired Assets. For purposes of clarity, none of the following events, changes or effects, individually or in the aggregate, shall be considered a Material Adverse Effect: (i) the effect of any change that generally affects any industry in which BII or MABVAX operates; (ii) the effect of any changes after the Effective Date in Applicable Law or accounting rules not uniquely relating to BII or MABVAX; (iii) any event, change or effect on the business, assets, or operations of BII's or MABVAX's business primarily caused by, related to or resulting from the announcement of the transactions contemplated by this Agreement; (iv) the effect of any change in the United States or foreign economies or securities or financial markets; (v) the effect of any action taken by BII or BII's Affiliate with respect to the transactions contemplated by this Agreement, other than actions taken pursuant to the provisions of this Agreement; (vi) the effect of any Regulatory Approval of a product that could compete with the BII Products; and (vii) the indirect or consequential effect of any outbreak of hostilities, acts of war, sabotage or terrorism or military actions or any escalation or material worsening of any such hostilities, acts of war, sabotage or terrorism or military actions existing as of the date hereof.

1.1.42 "MSK Rights" shall have the meaning as defined in Section 4.1.

1.1.43 "Net Sales" means, [***]

1.1.44 [***]

1.1.45 "Oxford Agreement" shall mean the loan and security agreement between Oxford Finance LLC, a Delaware limited liability company with an office located at 133 North Fairfax Street, Alexandria, Virginia 22314, ("Oxford Finance LLC"), certain other lenders, MabVax Therapeutics, Inc., a Delaware corporation with offices located at 11533 Sorrento Valley Road, Suite 400, San Diego, CA 92121, and MabVax Therapeutics Holdings Inc., dated as of January 15, 2016, as amended, regarding the provision of certain loans to MabVax Therapeutics Inc. and MabVax Therapeutics Holdings Inc.

1.1.46 "Patent" shall mean any and all (a) patents, (b) patent applications, including all priority applications, provisional and non-provisional applications, foreign patent application, patent cooperation treaty (PCT) applications, substitutions, continuations, continuations-in-part, divisions and renewals, and all patents granted thereon, (c) all patents-of-addition, reissues, re-examinations and extensions or restorations by existing or future extension or restoration mechanisms, including supplementary protection certificates or the equivalent thereof, (d) inventor's certificates, letters patent or (e) any other substantially equivalent form of government-issued right substantially similar to any of the foregoing described in subsections (a)-(d) above.

1.1.47 "Patent Files" shall mean any and all files, books, records, patent application documents, inventor assignment agreements and/or inventor reports, MABVAX claim(s) of invention(s), and all other similar or like information that solely and exclusively relate to [***] Patents.

1.1.48 "Phase I Clinical Trial" means a human clinical trial conducted in any country that meets the requirements of 21 CFR §312.21(a). By way of example and not limitation, a Phase I Clinical Trial is usually performed as a single or multiple dose Clinical Trial in healthy volunteers or patients to assess specific administration, distribution, metabolism, excretion (ADME), safety and tolerability, bioavailability/bioequivalence or exploratory efficacy (in the sense of demonstrating "proof-of-principle") of an investigational drug, and the emphasis in Phase I is usually on safety and tolerability and it is typically used to plan patient dosing in Phase II Clinical Trials. For clarity, a Phase I Clinical Trial may also represent the initial phase of a combined Phase Ib/II Clinical Trial.

1.1.49 "Phase III Clinical Trial" means a human clinical trial conducted in any country that meets the requirements of 21 CFR §312.21(c). By way of example and not limitation, a Phase III Clinical Trial is a large scale Clinical Trial (usually several hundreds of patients) performed after preliminary evidence suggesting effectiveness of the drug has been obtained in Phase II clinical studies, and it is intended to gather the pivotal information about effectiveness and safety that is needed to evaluate the overall benefit-risk relationship of the drug and, along with other clinical trials, to provide an adequate basis for Regulatory Approval. For clarity, a Phase III Clinical Trial may also represent the second part of a combined Phase II/III Clinical Trial.

1.1.50 "Recognized Agent" means [***].

1.1.51 "Regulatory Approval" means both: (a) the technical, medical and scientific licenses, registrations, authorizations and approvals (including approvals of NDAs and labelling approvals), and (b) any necessary pricing and/or reimbursement authorizations and approvals, of any Regulatory Authority necessary for the distribution, marketing, promotion, offer for sale, use, import, export or sale of such pharmaceutical product in such country.

1.1.52 "Regulatory Authority" means any (a) governmental authority, notified bodies or other organization in a country or region that regulates the manufacture or sale of pharmaceutical or medicinal products or medical devices, including the US Food and Drug Administration (or any succeeding entity), Japan Pharmaceutical and Medical Device Agency (or any succeeding entity) and the European Medicines Agency (or any succeeding entity), and any successors thereto and (b) any other relevant bodies authorized by Applicable Law to review or otherwise exercise oversight over marketing authorization applications, other regulatory filings or regulatory approvals.

1.1.53 "Sublicensees" means a Third Party, [***] grants a license or sublicense under any rights transferred to BII under this Agreement to develop or commercialize BII Products in the Territory. For the avoidance of doubt, if a Third Party is solely granted the right to perform distribution activities of BII Products in a country in the Territory, such Third Party shall be considered a Third Party distributor in such country.

1.1.54 [***].

1.1.55 "Taxes" shall mean all forms of preliminary or finally imposed taxation, domestic and foreign, federal, state, provincial, municipal, or other taxes, fees, levies, duties and other assessments or charges of whatever kind (including without limitation, sales, use, excise, stamp, transfer, property, value added, recording, registration, intangible, documentary, goods and services, real estate, payroll, gains, gross receipts, withholding, and franchise taxes) together with any interest, penalties, or additions payable in connection with such taxes, fees, levies, duties and other assessments or charges.

1.1.56 "Tax Law" shall mean any applicable law, rule or regulation of any Government Entity, or judgment, order, writ, decree, permit or license of any Government Entity of competent jurisdiction that, in each case, relates to taxes or other similar assessments or charges of any kind whatsoever (including, but not limited to, withholding on amounts paid to any person).

1.1.57 "Term" shall mean the period of time beginning on the Effective Date and continuing until the expiration or termination of this Agreement, whichever occurs first in time.

1.1.58 "Territory" shall mean all of the countries in the world, and their territories and possessions.

1.1.59 "Third Party" means a person or entity other than (a) BII or any of its Affiliates, or (b) MABVAX or any of its Affiliates.

1.1.60 [***].

1.1.61 [***].

1.1.62 "[***] Inventory" shall mean all inventory of product, including but not limited to [***], wherever located, owned or controlled by MABVAX, including without limitation all [***].

1.1.63 "[***] Know-How" shall mean all Know-How, owned by MABVAX that is solely and exclusively related to [***], including but not limited to data generated by MABVAX from [***] that are owned by MABVAX and that solely relates to [***].

1.1.64 "[***] Patents" shall mean all Patents that are set forth in Schedule 1.1.63, including all reissues, reexaminations, divisions, renewals, extensions or supplementary protection certificates, provisionals, continuations and continuations-in-part thereof (only to the extent that such continuations-in-part claim inventions disclosed as required by 35 U.S.C. § 112, in the parent application thereof) and the like, and all patents issuing on the foregoing patent applications, in all jurisdictions.

1.1.65 "[***]Patent Assignment" shall mean the general assignment of [***] Patents from MABVAX to BII, which will be substantially in the form attached as Exhibit C.

1.1.66 "Transaction Documents" shall mean collectively: (a) this Agreement; (b) [***] Patent Assignment; (c) the Bill of Sale; and (iv) the Assignment and Assumption Agreement. The phrase "the consummation of the transactions contemplated by this Agreement" or such similar phrases includes the execution, delivery, and performance of the Transaction Documents.

1.1.67 "Valid Claim" means [***].

1.1.68 In this Agreement a reference to:

(a) a document in the "agreed form" is a reference to a document in a form approved and for the purposes of identification signed by or on behalf of each Party;

(b) a statutory provision includes a reference to the statutory provision as modified or re-enacted or both from time to time before the date of this Agreement and any subordinate legislation made under the statutory provision before the date of this Agreement;

(c) a person includes a reference to a body corporate body, association or partnership;

(d) a person includes a reference to that person's legal personal representatives and successors;

(e) a clause, paragraph or schedule, unless the context otherwise requires, is a reference to a clause or paragraph of or schedule to this Agreement;

(f) MABVAX and BII may be referred to herein as a "Party" if singular, and as "Parties" if plural; and

(g) The headings in this Agreement do not affect its interpretation.

2. SALE AND PURCHASE OF THE ACQUIRED ASSETS

2.1 Sale and Purchase. In accordance with the terms and upon the conditions of this Agreement, at the Closing, MABVAX will sell, convey, assign, and transfer to BII, MABVAX's entire right, title, and interest in and to the Acquired Assets in the Territory **[***]**, in exchange for payment by BII of the consideration as described in Sections 5.1 – 5.4, and BII will purchase, acquire, accept, and assume the Acquired Assets in the Territory. For the avoidance of doubt, upon transfer of title to BII or its designee, and subject to the terms and conditions of this Agreement, BII shall have the sole and exclusive proprietary right, as against MABVAX, to fully exploit the Acquired Assets worldwide without restriction, and no rights in the Acquired Assets shall remain with MABVAX. For the avoidance of doubt,(i) to the extent books, records and other documents that otherwise correspond to the definition of Books and Record in accordance with Section 1.1.11, but do not relate solely and exclusively to **[***]**, MABVAX will provide to BII redacted copies **[***]** paying, performing and discharging when due, and BII shall not assume or have any responsibility for **[***]**.

2.2 Assumption and Exclusion of Liabilities. Upon the terms and subject to the conditions set forth in this Agreement, BII shall assume, and agree to pay, perform and discharge when due, any and all liabilities arising from BII's ownership, use or operation of the Acquired Assets or the exploitation of the BII Products after the Closing Date (the "Assumed Liabilities"). MABVAX shall retain, and shall solely be responsible for **[***]**

2.3 MABVAX Data Room . Within **[***]** of the Effective Date, MABVAX shall make available to BII via the MABVAX Data Room (to the extent not already made available to BII in the MABVAX Data Room as of the Effective Date) copies of all: **[***]** filing documents including employment agreements providing IP assignment, assignment documents for all relevant patent applications, lab notebook records, unpublished patent applications, unpublished patent wrappers/prosecution histories, agreements relating to the subject matter, publications and public disclosures, and patents and legal related matters, and **[***]** files, including without limitation publications, manuscripts, and abstracts, meeting minutes, research plans and program summaries, reports and presentations, **[***]**, and inventory lists, in each case (a) and (b), existing as of the Effective Date. In addition, MABVAX shall provide an external independent Third Party designated by BII and approved by MABVAX (such approval not to be unreasonably withheld, delayed or conditioned and provided that such external independent Third Party shall be subject to customary obligations to keep MABVAX's Confidential Information received by it confidential) with one complete version of the MABVAX Data Room content as of the Effective Date, using an appropriate storage media (e.g., CD or USB-stick), solely for the purpose to serve as evidence of the information provided by MABVAX to BII prior to the Effective Date.

3. LICENSE GRANT

3.1 **[***]** Know-How and IP. MABVAX hereby grants BII **[***]**.

3.2 No Implied Right or License. Except as explicitly provided herein, this Agreement does not convey any property rights in or imply any license to the use of any Intellectual Property and/or assets from MABVAX to BII.

4. [***] RIGHTS

4.1 **[***]** Agreement. Pursuant to the terms of the research and license agreement between **[***]** and MabVax Therapeutics, Inc., dated **[***]**, as amended (**[***]** Agreement"), **[***]**, inter alia, licensed certain of its biologic materials, intellectual property and know-how relating to **[***]** Rights") to MabVax Therapeutics, Inc. as further described therein.

4.2 Side Agreement. Prior to the Closing, the Parties **[***]** will execute an agreement (a) confirming that during the term of **[***]** Agreement, MABVAX will continue to be solely responsible for all of its obligations therein, including but not limited to any and all payment obligations due by MABVAX **[***]** and (b) whereby BII and **[***]** will not assert against BII, its Affiliates, Sublicensees or its or their distributors or independent contractors, any claims for infringement of **[***]**based on the research, development, manufacture, use, sale, offer for sale or license, or import of the Acquired Assets, and/or any BII Product in the Field in the Territory (the "Side Agreement").

5. PAYMENT

5.1 Upfront Purchase Price. The up-front purchase price for the Acquired Assets shall be US dollars Four Million (US $4,000,000) ("Upfront Purchase Price"). Subject to Section 14.4.2 (i)(d), the Upfront Purchase Price shall be **[***]**.

5.2 Payment of Purchase Price. The Upfront Purchase Price shall be due and payable upon Closing by BII to MabVax Therapeutics Holdings Inc. BII will make such payment due hereunder by wire transfer of immediately available funds within **[***]** of the Closing Date and after the receipt by BII of an original Invoice and of a duly signed original of this Agreement.

[***] Payments. As further consideration for the sale and transfer of the Acquired Assets, BII shall pay to MabVax Therapeutics Holdings Inc. the following [***] payments (each a [***] Payment") set forth below upon [***]

Milestone Event	**Milestone Payment**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**
[***]	**[***]**

(a) [***].

5.2.2 Reports and Payments. [***].

5.2.3 Financial Audit. [***] Currency Conversion. [***] Payments shall be payable in full in US dollars. Any sales of BII Products incurred in a currency other than US dollars shall be converted to the US dollars equivalent using a rate of exchange that corresponds to the rate used by BII or any of its Affiliates or Sublicensees recording such receipt or expenditure, for the respective reporting period, related to recording such Net Sales or expenses in its books and records that are maintained in accordance with the applicable Accounting Standards consistently used by BII, its Affiliates or their respective Sublicensees. If such party is not required to perform such currency conversion for its respective Accounting Standards reporting with respect to the applicable period, then for such period such party shall convert its amounts received and expenses incurred into US dollars using exchange rates published by the European Central Bank (ECB), Frankfurt, Germany. For exchange rates not published by ECB an alternative source will be agreed between the Parties. Any Earn-Out-Payment shall be calculated based upon the US dollars equivalent calculated in accordance with the foregoing.

5.3 Payment Terms. BII shall pay all amounts payable under this Agreement as stated in the respective sections, upon delivery to BII of an Invoice for such amounts by MabVax Therapeutics Holdings Inc.. All payments to be made by BII to MabVax Therapeutics Holdings Inc. under this Agreement shall be made in US dollars and may be paid by bank wire transfer in immediately available funds to such bank account as may be designated by MabVax Therapeutics Holdings Inc. from time to time.

5.4 Taxes in general. Subject to Section 5.7, all payments under or in connection with this Agreement shall be inclusive of any Taxes and each Party shall be responsible for and shall bear, pay or set-off its own Taxes assessed by a tax or other authority except as otherwise set forth in this Agreement.

5.5 VAT. All payments due to the terms of this Agreement are expressed to be exclusive of value added tax (VAT) or similar indirect taxes (e.g. goods and service tax). VAT/indirect taxes shall be added to the payments due to the terms if legally applicable.

5.6 Withholding Tax. If Applicable Laws or regulations require withholding by BII and/or its Affiliates of any taxes imposed upon MabVax Therapeutics Holdings Inc. on account of any Earn-Out Payments and other payments paid under this Agreement to benefit of MABVAX, such taxes have to be retained by BII and/or its Affiliates as required by local law from such remittable royalty and other payment and shall be paid by BII and/or its Affiliates to the proper tax authorities on account of MabVax Therapeutics Holdings Inc. Official receipts of payment of any retained local withholding tax shall be secured and sent by BII and/or its Affiliates to MabVax Therapeutics Holdings Inc. as evidence of such payment only on MabVax Therapeutics Holdings Inc.'s request. The Parties shall cooperate and exercise their best efforts to ensure that any withholding taxes imposed on MabVax Therapeutics Holdings Inc. are reduced as far as possible under the provisions of any relevant double tax treaty. Withholding taxes retained by BII and/or its Affiliates and paid to the proper German/local tax authorities as well as a possible refund of retained and paid local withholding taxes from the German/local tax authorities in favor of MabVax Therapeutics Holdings Inc. are paid in local/German currency (Local currency/EUR). Any effect by currency conversion is benefit or burden of MabVax Therapeutics Holdings Inc. as tax-payer and are not refundable or taken by BII and/or its Affiliates.

5.7 Interest on Late Payments. If BII fails to pay any payment due under this Agreement as provided herein on or before the date such payment is due, then such late payment will bear interest, to the extent permitted by Applicable Law, at an annual rate of **[***]** above the 1 month EUR LIBOR rate which applied on the due date effective for the first date on which payment was delinquent and calculated for the exact number of days in the interest period based on a year of three hundred sixty (360) days (actual/360). If the LIBOR is no longer published, the Parties will agree upon another internationally recognized rate which has historically been substantially equivalent to the 1 month EUR LIBOR rate and utilize such rate retroactively to such time as the rate was no longer available.

5.8 Loss or Damage to the Acquired Assets . Prior to the Closing, any loss or damage to the Acquired Assets shall be the sole responsibility of MABVAX.

5.9 Commercially Reasonable Efforts. BII shall use Commercially Reasonable Efforts to advance the development of at least one (1) BII Product **[***]**.

5.10 Side Agreement. Notwithstanding anything to contrary in this Agreement, the Parties agree, that in **[***]** under this Agreement.

6. CLOSING ACTIONS TO BE TAKEN PRIOR TO OR AT CLOSING . ON OR AFTER THE EFFECTIVE DATE AND PRIOR TO OR AT CLOSING, MABVAX SHALL DELIVER TO BII, DULY EXECUTED:

6.1 The (a) Bill of Sale; (b) Assignment and Assumption Agreement, **[***]** Patent Assignment, **[***]** Certified copies of any necessary corporate actions of MABVAX authorizing the execution and performance of this Agreement and the consummation of the transaction contemplated herein; and

6.2 Such other documents as are necessary or desirable for MABVAX and BII to transfer the Acquired Assets from MABVAX to BII and as far as applicable the assignment of such documents.

6.3 Interdependence. The transfers and deliveries described in this Article 6 are mutually interdependent and are to be regarded as occurring simultaneously as of the Closing Date. Unless agreed otherwise in writing by MABVAX and BII, no such transfer or delivery shall become effective until all other transfers and deliveries provided for in this Article 6 have also become effective. The parties agree that the failure of MABVAX to transfer and deliver to BII **[***]** upon Closing in accordance with Section 8.2.2 shall have no effect on the effectiveness and validity of the other transfers and deliveries provided for in this Article 6.

6.4 Time and Place of Closing. Subject to the satisfaction or waiver of all of the conditions set forth in Articles 10 and 11, the Closing shall take place on July 5, 2018. The Parties shall confirm Closing in writing.

7. REPRESENTATIONS AND WARRANTIES

7.1 MABVAX represents and warrants to BII as of the Effective Date and as of the Closing Date, except as disclosed in a disclosure schedule (the "Disclosure Schedules"), that

7.1.1 Authority. MABVAX has the power and authority to execute and deliver this Agreement and to consummate the transactions contemplated hereby. All corporate proceedings on the part of MABVAX that are necessary to approve and authorize the execution and delivery of this Agreement and the consummation of the transaction contemplated hereby have occurred, and assuming proper execution and delivery by BII, this Agreement is enforceable against MABVAX in accordance with its terms. Each Transaction Document will be enforceable in accordance with each of its terms upon execution and delivery to BII, in each case, subject to [***] Finder's Fees. Except for those listed in **Schedule 7.1.2**, MABVAX has no liabilities or obligations to pay any fees or commissions to any broker, finder, or other agent with respect to the transactions contemplated by this Agreement for which BII could become liable or obligated. For clarity, the finder's fee listed in Schedule 7.1.2 is borne by MABVAX.

7.1.2 Authorizations. No Authorization is needed by MABVAX for the execution, delivery, or performance of this Agreement and the consummation of the transactions contemplated hereby, except where the failure to obtain such Authorization will not have a Material Adverse Effect on this Agreement or the consummation of the transactions contemplated hereby.

7.1.3 Litigation and Claims. In the Territory, there is no Action pending or involving MABVAX, or to the Knowledge of MABVAX, threatened against MABVAX related to the Acquired Assets before any Governmental Entity. MABVAX has settled or will settle any claims of inventors relating to the Acquired Assets and no remuneration is due or otherwise payable to the inventor(s) of the Acquired Assets, including any compounds, whether or not such compounds are subject to existing patents, patent filings, or patent applications that may be filed by BII subsequent to the Effective Date.

7.1.4 Organization and Good Standing. MABVAX is a corporation duly organized, validly existing, and in good standing under the laws of the United States of America and is duly authorized to do business therein.

7.1.5 Title to Acquired Assets. MABVAX is the sole owner of the Acquired Assets and has and will convey to BII good and marketable title to all of the Acquired Assets free and clear of Encumbrances. Except for Excluded Assets, the Acquired Assets include all of the tangible properties, Patents and Know-How and other assets owned by MABVAX that are solely and exclusively related to [***].

7.1.6 Sufficiency. To the knowledge of MABVAX, the Acquired Assets and the rights licensed pursuant to Section 3.1 are all of the assets and rights owned or controlled by MABVAX which are necessary for BII to conduct [***] in substantially the manner conducted by MABVAX as of the date hereof, other than (a) personnel, (b) items generally categorized as corporate overhead, including [***], buildings and office space, and (c) the Excluded Assets.

7.1.7 Books and Records. To the Knowledge of MABVAX the Books and Records are reasonably conceived in a manner as appropriate in the international pharmaceutical industry. None of the Books and Records are recorded, stored, maintained, operated or otherwise wholly or partly dependent on or held or accessible by any means (including without limitation, an electronic, mechanical or photographic process computerized or not) which are not under the exclusive ownership and direct control of MABVAX.

7.1.8 Patent Files. To the Knowledge of MabVax, the Patent Files include all of the material information necessary for BII to fully exploit the Acquired Assets and are conceived in a reasonable manner as appropriate in the good international pharmaceutical industry. To the Knowledge of MABVAX, none of the material Patent Files is recorded, stored, maintained, operated or otherwise wholly or partly dependent on or held or accessible by any means (including without limitation, an electronic, mechanical or photographic process computerized or not) which are not under the exclusive ownership and direct control of MABVAX.

7.1.9 Violations/Breaches. To the Knowledge of MABVAX, the execution and delivery of this Agreement and the consummation of the transactions contemplated hereby do not or will not (a) violate any Applicable Law, (b) result in a breach of any term of the certificate of incorporation, by-laws or governing document of MABVAX or (c) result in a breach of any contract, agreement, or other instrument to which MABVAX is a party, except, in the case of clause (c), as would not have a Material Adverse Effect.

7.1.10 [***] Patents and [***] Know-How

(a) [***] Patents. To the knowledge of MABVAX, each of the [***] Patents is valid and enforceable, and nothing has been done or omitted to be done by which it may cease to be valid and enforceable or which may restrict the scope of protection afforded by such [***] Patents, and/or would justify cancellation, rectification or other modification of a registration of any of the [***] Patents. All [***] Patents are legally and beneficially owned solely by MABVAX [***].

(b) [***] Know-How. All of the [***] Know-How is legally and beneficially owned solely by MABVAX [***].

(c) MABVAX has not received any written notice of any claim, legal action, proceeding, judgment or settlement, and to the Knowledge of MABVAX's there is no threatened claim, relating to any of the [***] Patents and/or [***] Know-How, including but not limited to any claim or opposition as to title, validity, scope of protection, enforceability, entitlement or otherwise.

(d) All fees that have become due and payable, including but not limited to renewal fees, in respect to any [***] Patents have been paid and all documents, recordations and certificates in connection with all [***] Patents currently required to be filed have been filed with the relevant patent office or other authorities in the United States or foreign jurisdictions, as the case may be, for the purposes of prosecuting, maintaining and perfecting all [***] Patents.

(e) There are no Third Party challenges against the [***] Patents in oppositions, nullity proceedings, re-examination proceedings or any other proceedings that are pending. No supplier of any products or services to MABVAX is a party to or to the best knowledge of MABVAX has threatened with any civil, criminal, arbitration, administrative or other claim or proceeding.

(f) MABVAX has granted no licenses under and has not assigned [***] Patents and/or [***] Know-How to Third Parties and no security interests or any other interests of Third Parties remain in any [***] Patents and/or [***] Know-How.

(g) To the Knowledge of MABVAX, there currently is, and has not been, no infringement of any or the [***] Patents.

7.1.11 Compliance with Applicable Laws. The [***] is being conducted in compliance with all Applicable Laws, and has not received any written communication from any Governmental Entity within the Territory that alleges the [***] is not in such compliance.

7.1.12 Permits. MABVAX possesses all licenses, permits, and other approvals from Governmental Entities necessary to enable them to carry on the [***] as it is currently conducted (collectively, "Government Permits"),

7.1.13 Third Party Rights. To the knowledge of MABVAX, the exploitation of the Acquired Assets does not infringe any Patent or other Intellectual Property Right of MABVAX or a Third Party and there are no existing or threatened claims from third parties regarding the exploitation of the Acquired Assets nor any contractual obligations or governmental directions, orders or other regulations from any Governmental Entity restricting the exploitation of the Acquired Assets.

7.1.14 To the Knowledge of MABVAX, all material Confidential Information owned or used by MABVAX that is related to the Acquired Assets are accurately recorded and accessible by and comprehensible to a reasonable person experienced in the development, manufacture and marketing of pharmaceutical or medicinal products. To the Knowledge of MABVAX, it is not a party to a confidentiality or other agreement that restricts the use or disclosure of information solely and exclusively relates to the Acquired Assets. MABVAX has not disclosed, except under appropriate confidentiality and non-use obligations, any Confidential Information that relates to the Acquired Assets to Third Parties.

7.1.15 Complete Information. To the Knowledge of MABVAX, all material information given by, or on behalf of, MABVAX or to BII, its advisers or agents before and/or during the negotiations leading to this Agreement and including all information set out in this Agreement and any of the Schedules attached to this Agreement, is true, complete, accurate and not misleading. To the Knowledge of MABVAX, all information about the Acquired Assets that might be material for disclosure to a purchaser of the Acquired Assets have been disclosed to BII. As far as MABVAX is aware, no information which it reasonably believes to be material regarding the Acquired Assets (in particular its financial condition, developments, prospects and liabilities) has not been disclosed to BII.

7.1.16 Effects of Sale. Neither the execution nor performance of this Agreement or a document to be executed at or before Closing will:

(a) result in MABVAX losing the benefit of a permit or an asset, license, grant, subsidy, right or privilege which it enjoys at the Effective Date in any jurisdiction relating to the Acquired Assets; or

(b) conflict with, or result in a breach of, or give rise to an event of default under, or require the consent of a person under, or enable a person to terminate, or relieve a person from an obligation under, an agreement, arrangement or obligation relating to the Acquired Assets to which MABVAX is a party or a legal or administrative requirement in any jurisdiction.

7.2 **BII represents and warrants to MABVAX as of the Effective Date and as of the Closing Date that:**

7.2.1 Authority. BII has the power and authority to execute and deliver this Agreement and to consummate the transactions contemplated hereby. All corporate proceedings on the part of BII that are necessary to approve and authorize the execution and delivery of this Agreement and the consummation of the transaction contemplated hereby have occurred, and assuming proper execution and delivery by MABVAX, this Agreement is enforceable against BII in accordance with its terms, and the other Transaction Documents will be enforceable in accordance with their terms upon execution and delivery to MABVAX, in each case, subject to (a) applicable bankruptcy, insolvency, reorganization, moratorium and similar laws affecting creditors rights and remedies generally, and (b) the remedy of specific performance and injunctive and other forms of equitable relief.

7.2.2 Authorizations. No Authorization is needed by BII for the execution, delivery, or performance of this Agreement and the consummation of the transactions contemplated hereby, except where the failure to obtain such Authorization will not have a Material Adverse Effect on this Agreement or the consummation of the transactions contemplated hereby.

7.2.3 Organization and Good Standing. BII is a corporation duly organized, validity existing, and in good standing under the laws of Germany, and is duly authorized to do business therein.

7.2.4 Violations/Breaches. To the Knowledge of BII, the execution and delivery of this Agreement and the consummation of the transactions contemplated hereby do not violate any law, rule or regulation or order, judgment, or decree within the Territory binding on BII, and will not result in a breach of any term of the certificate of incorporation, code of regulation or by-laws of BII or of any contract, agreement, or other instrument to which any of BII is a party.

7.3 If not otherwise set forth herein the warranty shall be in line with Applicable Law.

8. COVENANTS

8.1 Operation of the **[***]** Prior to Closing. Except for actions taken pursuant to the prior consent of BII, MABVAX from the Effective Date until Closing will:

8.1.1 Conduct the [***] in the ordinary course; and

8.1.2 Not transfer [***] any of the Acquired Assets; and

8.1.3 Maintain all [***] Patents and [***] Know-How, including but not limited to the maintenance and prosecution of [***] Patents; and

8.1.4 Continue to meet the contractual obligations of, and pay obligations relating to the Acquired Assets; and

8.1.5 Not start litigation or arbitration proceedings relating to [***]; and

8.1.6 Notify BII immediately if it becomes aware of a fact or circumstance which constitutes a breach of Section 8.1 or has caused, or will or might cause, a warranty to become untrue, inaccurate, incomplete or misleading at any time before Closing; and

8.1.7 Non-Impairment. MABVAX will not act to impair the value of, or BII's interest in, the Acquired Assets, and will not use or infringe any Acquired Assets in conducting its businesses in the Territory. In particular, MABVAX will not abandon any of the [***] Patents, cancel or narrow claims in any [***] Patent, oppose any [***] Patents, challenge any [***] Patents in nullity proceedings, re-examination proceedings or otherwise challenge the validity or enforceability of any of the [***] Patents.

8.1.8 Efforts to Close. With respect to efforts to close, MABVAX and BII agree the following: MABVAX and BII will cause all of the conditions, as specified in Articles 10 and 11 of this Agreement, to the obligations of the others to consummate the transactions contemplated hereby, within [***] of the Effective Date of the Agreement.

8.1.9 MABVAX and BII will comply fully with all applicable notification, reporting, and other requirements of any applicable antitrust laws.

8.1.10 MABVAX and BII will each use all reasonable efforts to obtain, as soon as practicable, the Authorizations that may be or become necessary for the performance of their obligations under this Agreement and the consummation of the transactions contemplated hereby, if any, and will cooperate fully with each other in promptly seeking to obtain such Authorizations.

8.2 Transfer of Acquired Assets.

8.2.1 [***] after the Effective Date, and in all cases by the Closing Date should the Closing Date fall within the above [***], MABVAX shall make available to BII, or a party designated by BII, all Books and Records and Patent Files. To the extent books, records and other documents that otherwise correspond to the definition of Books and Record in accordance with Section 1.1.11, [***], MABVAX will provide to BII redacted copies of such books, records and other documents, and to the extent patent files that otherwise correspond to the definition of Patent Files in accordance with Section 1.1.44, [***]. MABVAX will store the originals of the Books and Records, including but not limited to original lab notebooks, for [***]. Any copies of the Books and Records and Patent Files shall be shipped to the address of BII at:

Books and Records:

[***]

Patent Files:

[***]

8.2.2 [***] after the Effective Date, and in all cases by the Closing Date should the Closing Date fall within the above [***], MABVAX shall make available to BII, or a party designated by BII, all [***] Inventory, provided, at BII's sole option, MABVAX may destroy any such [***] Inventory in lieu of transferring such [***] Inventory to BII in accordance with this Section 8.2.2.

8.2.3 On the Closing Date, MABVAX shall make all other Acquired Assets, including but not limited to copies of file wrappers for the [***] Patents and written or tangible embodiments of the [***] Know-How, available to BII, and will provide copies of technical information used by MABVAX or Third Parties acting on MABVAX's behalf in the research work related to the [***], to the extent assigned by MABVAX to BII pursuant to this Agreement. Such other documentation shall be provided in the format as used by MABVAX or available and existing as of the Closing Date and shall be shipped to the address of BII at:

[***]

8.2.4 In the event certain assets solely and exclusively related to the [***] and existing as of the Closing Date have not been specified as Acquired Assets and consequently have not been assigned and transferred to BII at Closing, MABVAX shall promptly assign and transfer such other assets once so identified, to BII after Closing and such other assets so assigned and transferred shall be treated as Acquired Assets for purposes of this Agreement.

8.2.5 For the assignment of the [***] Patents, MABVAX shall do all acts necessary to vest in BII or its designated parties full and unrestricted ownership in the [***] Patents, including those actions as further described in Section 8.6.2.

8.2.6 Wrong Pockets; Further Assurances. After the Closing, in the event that MABVAX receives or discovers that it is in possession of any asset that is an Acquired Asset or is otherwise properly due and owing to BII in accordance with the terms of this Agreement, MABVAX promptly shall transfer such asset to BII. MABVAX shall provide (at no cost to BII) reasonable and appropriate scientific expertise to support the transfer of the technical aspects and Know How related to the Acquired Assets to BII, for up to eight (8) weeks or a total of forty (40) hours, whichever is first reached. The time can be spread across appropriate MABVAX employees, to begin at a time mutually agreed to by the Parties, and in all cases, to begin within [***] after the Effective Date.

8.3 Publicity. Any press releases, financial filings, public announcements or similar publicity with respect to this Agreement or the transaction contemplated hereby shall be made upon the mutual consent of the Parties in advance of publication. **Exhibit D** attached herein sets forth the final press release related to the execution of this Agreement by both Parties, as approved by each Party for public announcement on or after the Effective Date.

8.4 Cooperation in Litigation. For a period of five (5) years after Closing, MABVAX and BII will, in the defense of any Third Party Action relating to the Acquired Assets, communicate to the other Party any facts of which such Party has knowledge with respect to the Acquired Assets, testify in any legal proceedings, sign all documents, make all rightful oaths and declarations, and make available records to the extent reasonably necessary to permit the effective defense or investigation of such Action at such other Party's sole cost and expense. If information other than that pertaining to the Acquired Assets is contained in such records and/or other communication, MABVAX and BII will either agree that such information may be omitted or redacted by the producing party, or will enter into appropriate secrecy commitments to protect such information. For the avoidance of doubt, in the event of MABVAX bankruptcy and/or liquidation, MABVAX's Chief Executive Officer and/or Chief Scientific Officer shall remain available for the period of time indicated above as reasonably necessary to permit the effective defense or investigation of any Third Party Action relating to the Acquired Assets.

8.5 Expenses. Except as otherwise expressly provided in this Agreement, whether or not the transactions contemplated by this Agreement are consummated, each of MABVAX and BII shall bear its own costs and expenses.

8.6 Assignment of Patents.

8.6.1 Inventor Compensation. Each of MABVAX and BII shall compensate each of its own Inventors according to each of its own internal policy. No Party shall in any way be responsible or liable for compensating the Inventors of another Party.

8.6.2 Assignment and Recordation. At BII's sole cost and expense, MABVAX will submit the appropriate assignment documents to the relevant Governmental Entity, by country, requesting that MABVAX's entire right, title and interest in the [***] Patents is transferred and assigned solely to BII or a party designated by BII. MABVAX shall inform BII in writing of these above submissions, including, without limitation providing a copy of all communication sent to and received from the Governmental Entities, within two (2) weeks of their submission or receipt, and MABVAX shall on the Closing Date provide BII with a signed and notarized [***] Patent Assignment. MABVAX, at BII's sole cost and expense, shall promptly execute and deliver further documents and take such further steps as may reasonably be required to vest in BII the [***] Patents. Upon BII's reasonable request and at BII's sole cost and expense, MABVAX shall execute and supply documents necessary for BII's prosecution and maintenance of the [***] Patents that BII is unable to obtain without the assistance of MABVAX, including, but not limited to declarations, affidavits and inventor assignments, notarization and legalization of documents, if necessary consularization of a respective country, depose to or procure the deposing to or swearing of such documents and do any act or thing and provide any information which may be useful and necessary for the assignment of the [***] Patents to BII.

8.6.3 BII shall be responsible for, and will pay all out-of-pockets expenses (whether incurred before or after the Closing Date) involved in notarization, authentication, legalization, and/or consularization of the signatures of BII's representatives on [***] Patent Assignment and other [***] Patent assignment documents, by country, and recording such assignment documents with the appropriate Governmental Entities. BII will also be responsible for, and will pay all expenses (whether incurred before or after the Closing Date) involved in notarization, authentication, legalization, and/or consultation of the signatures of MABVAX's representatives on the [***] Patent Assignment documents.

8.6.4 Local Patent Representatives. MABVAX shall have responsibility, at its own cost to:

(a) With respect to the [***] Patents: notify each in writing each of its local patent representatives in the Territory within [***] of the Closing Date that: (i) the [***] Patents have been assigned to BII; and (ii) all future correspondence regarding the [***] Patents should be sent to:

(b) [***] Forward copies of any correspondence it receives from its local patent representative or any Governmental Entities regarding the [***] Patents to BII that it receives before or after the Closing Date.

8.6.5 Maintenance of [***] Patents. MABVAX will timely pay all out-of-pocket expenses related to the maintenance of [***] Patents due between the Effective Date and the Closing Date. After the Closing Date, BII will be solely responsible for the maintenance of the TN Program [***] of [***] Patents after the Closing Date, then MABVAX will forward to BII any such bills or original invoices for payment by BII and MABVAX shall have no liability for BII's failure to timely pay such bills or invoices.

8.6.6 Prosecution of [***] Patents. MABVAX will pay all bills and invoices for [***] Patent prosecution expenses for activities or work completed prior to the Closing Date and which relate to work performed for the benefit of MABVAX. For clarity, work, whether performed before or after the Closing Date, which relates to the transfer of the [***] Patents to BII pursuant to this Agreement shall not be "work performed for the benefit of MABVAX". Upon BII's written request and at BII's expense, MABVAX will be responsible for Prosecuting the [***] Patents for up to [***] after the Closing Date; provided, however, that "Prosecuting" solely for the purposes of this Section 8.6.6 shall mean filing such documents as may be reasonably necessary to continue the pendency of a patent application for at least [***] after the filing of such document. Otherwise, BII will be responsible for Prosecuting the [***] Patents as of the Closing Date. For a period [***] after the Closing Date, MABVAX will further cooperate with and reasonably assist and provide support to BII in relation to the prosecution and maintenance of [***] Patents, at BII's request and expense. In the event that BII does not have legal status in a [***] Patent because the recordation process has not been completed, MABVAX shall upon instruction from BII, act on BII's behalf and at BII's expense.

8.6.7 Covenant Not to Sue. MABVAX hereby agrees that with respect to any Patent or other Intellectual Property that, on the date of Closing, they own or under which they have the right to grant licenses, they will not assert against BII, its Affiliates, Sublicensees or its or their distributors or independent contractors, any claims for infringement of such Patent or Intellectual Property based on the research, development, manufacture, use, sale, offer for sale or license, or import of the Acquired Assets, and/or any BII Product in the Field in the Territory.

8.6.8 Non-Compete. After the Closing Date until [***], MABVAX undertakes to BII that it shall not, and shall procure that its Affiliates shall not, directly or indirectly conduct any activity involving [***].

8.6.9 Conditional No Challenge. To the extent legally enforceable, MABVAX hereby agrees, so long as a [***] Patent is pending or in force, neither to file any Action that challenges the validity, enforceability or patentability of such [***] Patent, nor to support any Third Party to file such an Action; provided however, that none of the foregoing shall apply to any Action (including counter-claims) filed by MABVAX in the defense of an Action brought by BII or its licensees against MABVAX alleging patent infringement. MABVAX shall bind any of its assignees to this obligation.

8.7 Additional Records. Within a reasonable time but no later than [***] after Closing, MABVAX will provide to BII copies of books, records, or other documents, if any, which are not Books and Records, but which are necessary for the operation of [***]. MABVAX may redact from such copies any information that does not relate to [***] and BII will have the right to use such copies only in connection with its operation and ownership of [***].

8.8 Removal of Assets. All tangible Acquired Assets will be moved by MABVAX within [***] after Closing from MABVAX's to BII's premises, as listed in Sections 8.2.1 and 8.2.2, at MABVAX's expense.

9. TREATMENT OF CONFIDENTIAL INFORMATION

9.1 Confidential Information of a Party disclosed by that Party to another Party under this Agreement shall be received and held in confidence by the receiving Party and, except with the consent of the disclosing Party or as otherwise permitted under this Agreement, shall neither be used by the receiving Party nor disclosed by the receiving Party to others. For clarity, the terms and the existence of this Agreement and the Transaction Documents shall be considered Confidential Information of both Parties. MABVAX shall neither use nor disclose to Third Parties any Confidential Information related to the Acquired Assets.

9.2 A receiving Party may disclose and authorize the use of the disclosing Party's Confidential Information (a) to and by its Affiliates, consultants, advisors, and agents only to the extent necessary to carry out the Party's rights and responsibilities under this Agreement, (b) in the course of the consummation of the transactions contemplated hereby, or (c) to actual or potential investors, acquirors, licensees or sublicensees, as applicable, provided however, that the receiving Party will ensure that said Affiliates, consultants, advisors, agents, actual or potential investors, acquirors, licensees or sublicensees, as applicable, are bound to such Party by obligations of confidentiality and limited use at least as restrictive as the obligations of such Party under this Agreement.

9.3 The Parties agree to take or cause action to be taken to preserve the confidentiality of Confidential Information received from another Party as it would customarily take to preserve the confidentiality of its own Confidential Information, using in all such circumstances, not less than reasonable care.

9.4 Except as required by law and subject to Sections 8.3 and 9.2 above, neither Party will disclose the terms of this Agreement without the written consent of the other Party.

9.5 In the event disclosure of Confidential Information is required by Applicable Law or rules of a security exchange, then the disclosing Party will provide reasonable advance written notice to the other Party of the timing, nature, and content, of the anticipated disclosure, and shall use its reasonable efforts to assist the disclosing Party in objecting to such request. If the receiving Party is compelled to disclose any of the Confidential Information pursuant to such legal or governmental proceeding or Applicable Law or rules, receiving Party shall use its reasonable efforts to assist disclosing Party in obtaining confidential treatment for such disclosed Confidential Information. Any Confidential Information so disclosed shall still be subject to the terms of this Agreement.

9.6 If this Agreement is, for any reason, terminated prior to Closing, then BII agrees to promptly return to MABVAX, or will promptly destroy, any tangible written, printed, visual or digital media, or any other materials or substances, containing Confidential Information, including all copies and excerpts thereof except for one archival copy, to be retained by BII in a secure manner for archival purposes only. The return of such media or materials shall not affect the obligations of BII as to confidentiality or non-use as set forth herein.

9.7 For the sake of clarity, any and all of MABVAX's Confidential Information included in the Acquired Assets transferred to BII at Closing, with the exception only of Books and Records which are stored in accordance with Section 8.2.1 above, which constitute Confidential Information of both Parties, will no longer be considered MABVAX's Confidential Information after Closing, but will thereupon be BII's Confidential Information that MABVAX will be obligated to protect in accordance with the provisions of this Article 8.

9.8 The Parties undertake to protect Confidential Information (including but not limited to patent-relevant, scientific or technical information) against unauthorized access by Third Parties. If Confidential Information is communicated via internet mail, use of internet mail encryption technology is compulsory (for direct communication between the Parties, BII provides for a suitable technology at http://guides.boehringer-ingelheim.com/. free of charge).

9.9 Survival. This Article 9 shall survive the expiry or termination of this Agreement and shall remain in full force and effect for [***] after the expiry or termination of this Agreement, except that any the obligations with respect to Confidential Information that is a trade secret under Applicable Law shall continue to survive thereafter.

10. CONDITIONS TO MABVAX'S OBLIGATION TO CLOSE

All obligations of MABVAX to sell and transfer to BII the Acquired Assets, to grant the rights under Section 3.1, and to perform any other action at the Closing are subject to the fulfilment, prior to or at the Closing, of each of the following conditions, of which Sections 10.2 and 10.3 may be waived by MABVAX, in whole or in part, without notice of such waiver to BII.

10.1 No Injunction/Order. No preliminary or permanent injunction or other order will have been issued that would make unlawful the consummation of the transactions contemplated by this Agreement.

10.2 Performance of BII's Obligations. BII will have fully performed all commitments required by this Agreement to be performed prior to Closing (except for those which, in the aggregate, will not have a Material Adverse Effect on this Agreement or the consummation of the transactions contemplated hereby).

10.3 BII's Representations and Warranties True. All representations and warranties of BII contained in this Agreement will be true and correct as of the Closing, except for those which, individually or in the aggregate, will not have a Material Adverse Effect on this Agreement or the consummation of the transactions contemplated hereby.

11. CONDITIONS TO BII'S OBLIGATION TO CLOSE

All obligations of BII to purchase the Acquired Assets, to assume the Assumed Liabilities, to obtain the rights under Section 3.1, and to perform any other action at the Closing, are subject to the fulfilment, prior to or at the Closing, of each of the following conditions, of which Sections 11.2 and 11.3 may be waived by BII, in whole or in part, without notice of such waiver to MABVAX.

11.1 No Injunction/Order. No preliminary or permanent injunction or other order will have been issued that would make unlawful the consummation of the transactions contemplated by this Agreement.

11.2 Performance of MABVAX's Obligations. MABVAX will have fully performed all commitments required by this Agreement to be performed prior to Closing (except for those which, in the aggregate, will not have a material adverse effect on this Agreement or the consummation of the transactions contemplated hereby) and will have tendered at the Closing, the documents required in Section 6.1.

11.3 MABVAX's Representations and Warranties. All representations and warranties of MABVAX contained in this Agreement will be true and correct as of the Closing, except for those which, individually or in the aggregate, will not have a Material Adverse Effect on this Agreement or the consummation of the transactions contemplated hereby.

11.4 [***] Agreement. [***]

11.5 [***].

12. INDEMNITY AND LIMITATIONS OF LIABILITY

12.1 Survival of Representations and Warranties. The representations and warranties of MABVAX contained in Article 7 of this Agreement and the other Transaction Agreements shall survive the Closing and MABVAX shall remain liable in that regard until the date which is twenty-four (24) months after the Closing with the exception of the representation and warranties contained in Sections 7.1.6, 7.1.7, 7.1.11(a), 7.1.11(b), and 7.1.11(f), which shall survive the termination and expiration of this Agreement. The representations and warranties of BII contained in this Agreement and the other Transaction Agreements shall survive the termination and expiration of this Agreement.

12.2 Indemnification by MABVAX**.**

12.2.1 Subject to the terms and conditions of this Agreement, MABVAX will defend and hold BII harmless from and against all claims, losses, liabilities, damages, costs, and expenses (including without limitation reasonable fees and expenses of attorneys incurred in investigation or defense of any third party Action) as a result of a Third Party claim arising out of or related to [***].

12.2.2 Promptly, but no later than [***], after receipt by BII of notice of any third party Action in respect of which indemnity may be sought against MABVAX hereunder (for purposes of this Section 12.2.2, a " BII's Assertion"), BII will notify MABVAX in writing of the BII's Assertion, but the failure to so notify MABVAX will not relieve MABVAX of any liability they may have to BII, except to the extent MABVAX have suffered actual prejudice thereby. MABVAX will be entitled to participate in and, to the extent MABVAX elects by written notice to BII [***] after receipt by MABVAX of notice of such BII's Assertion, to assume the defense of such BII's Assertion, at MABVAX's own expense, with counsel chosen by it which will be reasonably satisfactory to BII. With respect to any such BII's Assertion, BII will promptly provide MABVAX with: (i) notice and copies of any documents served upon BII; and (ii) all reasonable cooperation which MABVAX deem necessary to defend such BII's Assertion, including without limitation, providing MABVAX and their outside attorneys access to any potentially relevant documents, information, or individuals within the control of BII, other than any privileged documents. If business information of BII other than that pertaining to [***] is contained in such documents or information, MABVAX and BII will enter into appropriate secrecy commitments to protect such documents or information. Notwithstanding that MABVAX may have elected by written notice to assume the defense of any BII's Assertion, BII will have the right to participate in the investigation and defense thereof, with separate counsel chosen by BII, but in such event the fees and expenses of BII (above those which would otherwise have been incurred) and such separate counsel will be paid by BII.

12.2.3 Notwithstanding anything in this Section 12.2 to the contrary:

(a) MABVAX will have no obligation with respect to any BII's Assertion if, in connection therewith, BII, without the written consent of MABVAX, settles or compromises any Action or consents to the entry of any judgment; and

(b) MABVAX will not, without the written consent of BII with respect to any BII's Assertion:

(i) Settle or compromise any Action or consent to the entry of any judgment which does not include as an unconditional term thereof the delivery by the claimant or plaintiff to BII of a duly executed written release of BII from all liability in respect of such Action, which release will be reasonably satisfactory in form and substance to counsel for BII; and

(ii) Settle or compromise any Action in any manner that, in the reasonable judgment of BII or its counsel, will materially adversely affect BII other than as a result of money damages or other money payments.

(c) Upon the payment of any settlement or judgment pursuant to this Section 12.2, with respect to any BII's Assertion, MABVAX will be subrogated to all rights and remedies of BII, against any Third Party in respect of such BII's Assertion, to the extent of the amount so paid by MABVAX.

(d) The indemnity provided for in this Section 12.2 will be BII's exclusive source of recovery against MABVAX with respect to matters covered by this Section 12.2.

12.3 Indemnification by BII.

12.3.1 Subject to the terms and conditions of this Agreement, BII will defend and hold MABVAX harmless from and against all claims, losses, liabilities, damages, costs, and expenses (including without limitation reasonable fees and expenses of attorneys incurred in investigation or defense of any third party Action) as a result of a Third Party claim arising out of the Assumed Liabilities, and/or a material breach of an obligation, representation and warranty or covenant of BII in this Agreement.

12.3.2 Promptly, but no later than [***], after receipt by MABVAX of notice of any third party Action in respect of which indemnity may be sought against BII hereunder (for purposes of this Section 12.3, a "MABVAX's Assertion "), MABVAX will notify BII in writing of the MABVAX's Assertion, but the failure to so notify BII will not relieve BII of any liability they may have to MABVAX, except to the extent BII has suffered actual prejudice thereby. BII will be entitled to participate in and, to the extent BII elects by written notice to MABVAX [***] after receipt by BII of notice of such MABVAX's Assertion, to assume the defense of such MABVAX's Assertion, at BII's own expense, with counsel chosen by it which will be reasonably satisfactory to MABVAX. With respect to any such MABVAX's Assertion, MABVAX will promptly provide BII with: (a) notice and copies of any documents served upon MABVAX; and (b) all reasonable cooperation which BII deems necessary to defend such MABVAX's Assertion, including without limitation, providing BII and their outside attorneys access to any potentially relevant documents, information, or individuals within the control of MABVAX, other than any privileged documents. If business information of MABVAX other than that pertaining to [***] is contained in such documents or information, MABVAX and BII will enter into appropriate secrecy commitments to protect such documents or information. Notwithstanding that BII may have elected by written notice to assume the defense of any MABVAX's Assertion, MABVAX will have the right to participate in the investigation and defense thereof, with separate counsel chosen by MABVAX, but in such event the fees and expenses of MABVAX (above those which would otherwise have been incurred) and such separate counsel will be paid by MABVAX.

12.3.3 Notwithstanding anything in this Section 12.3 to the contrary:

(a) BII will have no obligation with respect to any MABVAX's Assertion if, in connection therewith, MABVAX, without the written consent of BII, settles or compromises any Action or consents to the entry of any judgment; and

(b) BII will not, without the written consent of MABVAX with respect to any MABVAX's Assertion:

(i) Settle or compromise any Action or consent to the entry of any judgment which does not include as an unconditional term thereof the delivery by the claimant or plaintiff to MABVAX of a duly executed written release of MABVAX from all liability in respect of such Action, which release will be reasonably satisfactory in form and substance to counsel for MABVAX; and

(ii) Settle or compromise any Action in any manner that, in the reasonable judgment of MABVAX or their counsel, will materially adversely affect MABVAX other than as a result of money damages or other money payments.

(c) Upon the payment of any settlement or judgment pursuant to this Section12.3 , with respect to any MABVAX's Assertion, BII will be subrogated to all rights and remedies of MABVAX, against any third party in respect of such MABVAX's Assertion, to the extent of the amount so paid by BII.

(d) The indemnity provided for in this Section 12.3 will be MABVAX's exclusive source of recovery against BII with respect to matters covered by this Section 12.3.

12.4 Indemnification Limitations. The total aggregate amount in respect of which the Parties shall be liable for indemnification under any provision of Section 12.2 or 12.3 respectively shall not exceed, in the aggregate three (3) times the amount actually received by MabVax Therapeutics Holdings Inc. from BII under this Agreement except for liabilities arising from or related to acts or omissions of gross negligence or wilful misconduct by a Party.

12.5 Damage Limitations. In the event any Claim or Action hereunder results in a Tax benefit or is an insured loss to the indemnified Party, the indemnifying Party will be entitled to take a credit against any liability thereunder in the amount by which any Taxes of the indemnified Party will be reduced by reason of any deduction or adjustment allowed the indemnified Party for any payment, settlement, satisfaction of such claim, as well as in the amount of and to the extent of any insurance proceeds to which the indemnified Party is entitled. For purposes hereof, it will be presumed that the maximum possible Tax benefit is derived in the shortest time period possible.

13. DISPUTE RESOLUTION

13.1 Any Claim arising out of or related to this Agreement, and/or the Transaction Documents, including without limitation, any Claim for indemnification pursuant to Article 12 hereof will be resolved pursuant to the procedures set forth in this Article 13.

13.2 Should any Claim arise, MABVAX and BII will first attempt to resolve such Claim amicably by entering into good faith negotiations by or among their appropriate employees or officers. Such negotiations will commence as soon as practicable after MABVAX and BII have each received written notice of such Claim, but no later than [***] after such receipt, and will terminate [***] after such commencement.

13.3 Any Claim which is not resolved by the procedure set forth in Section 13.2 herein, will be referred to the Executive Official (or their successor or designee) of MABVAX and BII. Such negotiations will commence as soon as practicable after termination of the negotiations described in Section 13.2, but not later than [***] after any Party provides written notice to the others that such Claim is not resolved and that they wish to invoke the procedures set forth in this Section 13.3, and such negotiations will terminate [***] after commenced.

13.4 Any Claim which has not been resolved by the procedures set forth in Sections 13.3 shall be finally resolved by binding arbitration in accordance with the ICC arbitration rules by [***]. No arbitrator shall be an employee, director or shareholder of either Party or any of their Affiliates but each shall have substantial experience in commercial disputes in the pharmaceutical industry. [***]. Place of such arbitration shall be [***]. The language of the arbitration proceeding shall be English. The Parties acknowledge that they desire for any arbitration to be conducted in an efficient, speedy and economical manner.

13.5 The award for arbitration shall be final and binding and may be enforced in any court of competent jurisdiction against either Party. Notwithstanding the foregoing, the Parties shall each be entitled either prior to or during arbitration to seek and obtain injunctive or other equitable relief in any court of competent jurisdiction to preserve the status quo pending arbitration or to prevent the breach of this Agreement.

13.6 Except to the extent necessary to confirm or obtain judgment on an award or decision or as may be required by Applicable Law, neither Party may, and the Parties shall instruct the arbitrators not to, disclose the existence, content, or results of a dispute without the prior written consent of the other Party.

14. TERM, EXPIRATION, AND TERMINATION

14.1 Term. This Agreement shall become effective as of the Effective Date and shall remain in full force and effect unless terminated earlier in accordance with this Article 14.

14.2 Termination prior to Closing.

14.2.1 Termination for Breach. Either Party shall be entitled to terminate this Agreement at any time prior to Closing upon written notice if the other Party is in material breach of its obligations under this Agreement.

14.2.2 Termination for Delay in Closing. This Agreement may be terminated at any time by either Party, if the Closing has not occurred within [***] after the Effective Date. In case either Party seeks to terminate this Agreement pursuant to this Section 14.2.2, such Party shall provide [***] written notice to the other Party, such notice not to be dated prior to the [***] after the Effective Date.

14.2.3 Termination in view of Governmental Ruling. This Agreement may be terminated at any time prior to Closing by any Party not in default, if any Governmental Entity has issued a final, non-appealable order, decree, or ruling permanently enjoining or prohibiting the consummation of the transactions contemplated by this Agreement. A Party seeking to terminate this Agreement pursuant to this Section 14.2.3 shall provide [***] written notice to the other Party which shall include a copy of the writing evidencing such order, decree or ruling.

14.3 Termination after Closing.

14.3.1 Termination by BII for Discontinuation. BII shall have the right, at any time, to terminate this Agreement if BII, or its Affiliates decide, at their sole discretion, to discontinue BII's or its Affiliates' activities with regard to the [***], including without limitation the discontinuation of research, development or commercialization of the Acquired Assets and/or BII Products, upon [***] prior written notice to MABVAX.

14.3.2 Termination for Breach of Covenants. BII shall be entitled to terminate this Agreement at any time, if MABVAX does not fulfill its contractual obligations under Article 8 after Closing, and provided MABVAX does not cure such non-fulfillment of its contractual obligations within [***] after receipt of written notice from BII regarding such nonfulfillment. However, such cure is not possible in case of MABVAX's non fulfillment of the contractual obligations has caused an impairment of the Acquired Assets as solely determined by BII.

14.3.3 Termination for Breach of Representations and Warranties. Subject to Section 12.1, BII shall be entitled to terminate the Agreement, if MABVAX is in breach of any of the representations and warranties given in Section 7.1, in case of Section 7.1.12 and 7.1.13 only if such breach would have a Material Adverse Effect, and provided MABVAX does not cure the alleged breach of such warranty within [***] after receipt of written notice from BII regarding such breach of warranty. However, such cure is not possible in case of MABVAX's breach of warranty has caused an impairment of the Acquired Assets as solely determined by BII.

14.3.4 Termination for Breach at any Time. This Agreement may be terminated at any time after Closing by any Party, if the other Party (the "Defaulting Party") is in default of any of its material obligations under this Agreement, including without limitation a breach of the confidentiality and non-use obligations set forth under Article 9 of this Agreement ("Default") which Default remains uncured for [***], each measured from the date written notice of such Default is provided to the Defaulting Party. The Party terminating the Agreement based on this Section 14.3.4 (the "Non-Defaulting Party") shall provide written notice to the Defaulting Party, which notice shall identify the Default, the intent to so terminate and the actions or conduct that it considers would be an acceptable cure of such Default. In case the Defaulting Party disputes the Default under this Section 14.3.4, then the issue of whether the Non-Defaulting Party may properly terminate this Agreement on expiration of the applicable cure period shall be resolved in accordance with Article 13 of this Agreement. If, as a result of such dispute resolution process, it is determined that the alleged Defaulting Party committed a Default and that the Default has not been cured prior to such determination, then the Agreement, subject to the limitation in this Section 14.3.4, shall be terminated effective as of the determination unless the arbitration tribunal as set forth in Article 13 of this Agreement determines that the Default is of a nature that can be cured within [***] after the date of such judgment and indicates what minimal actions need to be completed with such time period (the "Additional Cure Period") to cure the Default. In this latter case, the termination shall be effective as of the expiration of the Additional Cure Period unless the Defaulting Party completes the required actions on or prior to such date. If the Parties dispute whether such Default was so cured, either Party alone may request the same court to determine whether it was so cured, and the Parties shall cooperate to allow such determination to be made within [***] after such request by either Party. The dispute resolution proceeding contemplated above in this Section 14.3.4 does not suspend any obligations of either Party hereunder, and each Party shall use reasonable efforts to mitigate any damages resulting from a Default. If as a result of such dispute resolution proceeding it is determined that the alleged Defaulting Party did not commit the alleged Default (or such Default was cured in accordance with this Section 14.3.4 prior to or during the Additional Cure Period), then no termination shall be effective, and this Agreement shall continue in full force and effect.

Notwithstanding the foregoing, MABVAX shall not have the right to terminate this Agreement for BII's Default following [***] and without prejudice to any other remedies MABVAX may have under Applicable Law.

14.4 Effects of Termination.

14.4.1 Effects of Termination by MABVAX for Cause or by BII for Discontinuation . In the event of termination of this Agreement by (i) MABVAX pursuant to Section 14.3.4, or (ii) BII pursuant to Section 14.3.1, in each case (i) and (ii):

14.4.2 [***] Termination of this Agreement by BII for Cause. In the event of termination of this Agreement by BII pursuant to Sections 14.3.2– 14.3.4, in addition to any other remedies available to BII at law or in equity, BII may in its discretion

(i) [***], or

[***] Rights Accruing Prior to Expiration or Termination. Termination of this Agreement shall not relieve the Parties of any obligation accruing prior to such termination. Any termination of this Agreement shall be without prejudice to the rights of either Party against the other accrued or accruing under this Agreement or otherwise under Applicable Law prior to termination, including the obligation to pay for any amounts that accrued prior to the effective date of such termination. The damages recoverable by the Non-Defaulting Party shall include all attorneys' fees reasonably incurred by such party.

15. MISCELLANEOUS

15.1 Applicability. The obligations and restrictions contained in the provisions of this Agreement shall apply to any and all consultants, subcontractors, agents, independent contractors, or other individuals employed by a Party to achieve performance under this Agreement.

15.2 Assignment. Neither this Agreement nor any right or obligation hereunder may be assigned or otherwise transferred, in whole or in part, by any Party without the prior express written consent of the other Party, such consent not to be unreasonably withheld or delayed; provided, however, that a Party may, without the written consent of the others, assign this Agreement and its rights and obligations hereunder (a) to an Affiliate provided that the assigning Party shall remain liable for the performance of such Affiliate, or (b) in connection with a merger or sale of all or substantially all of the assets of the assigning Party to which the subject matter of this Agreement relates, provided that the assignee assumes all of the assigning Party's obligations under this Agreement. The terms and conditions of this Agreement shall be binding upon and inure to the benefit of the permitted successors and assigns of the Parties.

15.3 Counterparts. This Agreement may be executed simultaneously in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

15.4 Covenants and Agreements. All covenants and agreements of the Parties are subject to all applicable statutes of limitation, statutes of repose, and other similar defenses provided by law or equity.

15.5 Entire Agreement. This is the entire Agreement, including all exhibits and schedules hereto, between the Parties with respect to the subject matter hereof and supersedes all prior representations, understanding and agreements between the Parties with respect to the subject matter hereof. This Agreement supersedes the Mutual Confidential Disclosure Agreement between the Parties dated as of February 23, 2018 (the "CDA"). All confidential information exchanged between the Parties under the CDA shall be deemed Confidential Information and shall be subject to the terms of Article 9. No amendments, modifications, or supplements of this Agreement or any of the other Transaction Documents shall be valid or effective unless in writing and executed by duly authorized representatives of the Parties thereto.

15.6 Schedules; Exhibits. All Schedules and Exhibits referred to in this Agreement are hereby incorporated herein and made a part of this Agreement. The fact that any document, asset, item, action, entity, event, condition, claim, agreement, or other matter (collectively "Matters") is set forth or described or referred to in any one or more Schedule or Exhibit will not be construed as a representation, warranty, acknowledgement, or admission by any Party or as evidence that such Matter is, or may at any time be, or have been, material or in any way significant to the transactions contemplated by this Agreement.

15.7 Force Majeure. Neither Party shall be liable for failure of or delay in performing obligations set forth in this Agreement, nor shall be deemed in breach of its obligations to the extent such failure or delay is caused by or results from causes beyond the reasonable control of the affected Party, including but not limited to fire, flood, embargo, war, acts of war (whether war is declared or not), acts of terrorism, insurrection, riot, civil commotion, acts of God, or intervening acts, omissions or delays perpetrated by governmental authority; provided however, that the Party failing or delayed shall use all reasonable efforts to avoid or remove such causes of failure or delay, and shall continue to perform hereunder with reasonable dispatch whenever such causes are removed. Either Party shall promptly provide the other Party with written notice of any failure or delay to perform believed to be attributable to force majeure.

15.8 Survival. Expiration or termination of this Agreement for any reason shall not relieve a Party from obligations and duties which (i) by their nature extend beyond the expiration or termination of this Agreement and (ii) that are expressly indicated to survive the termination or expiration of this Agreement. Without limiting the foregoing, the following provisions shall expressly survive any such expiration or termination: **[***]** Further Assurances. Each Party agrees to execute, acknowledge and deliver such further instructions, and to do all such other acts, as may be necessary or appropriate to carry out the purposes and intent of this Agreement.

15.9 Governing Law. This Agreement shall be construed, interpreted and applied in accordance with the laws of the State New York, excluding its choice of law and conflict of law provisions.

15.10 Language. This Agreement has been prepared in the language of English and such language shall control its interpretation.

15.11 Notice. Any notices, requests, consent, and Invoices given under this Agreement shall be in writing and shall be deemed given *(i)* upon the date of personal delivery or by facsimile transmission (receipt verified), provided that such date is a Business Day and if confirmed by delivery of the hardcopy original by overnight courier or registered mail; or *(ii)* [***] after dispatch by overnight courier; or *(iii)* [***] after dispatch of registered or certified mail (return receipt requested), postage prepaid, in each of subsection *(i)*, *(ii)* or *(iii)*, above, to the Parties at the following addresses (or at such other address for a Party as shall be specified by like notice, provided, however, that notices of a change of address shall be effective only upon receipt thereof):

If to MABVAX:

11535 Sorrento Valley Road Suite 400
San Diego, California 92121
USA
[***]

With a copy to:

[***]

If to BI:

[***]

15.12 Relationship of the Parties. Nothing in this Agreement is intended or shall be deemed to constitute a partner, agency, employer-employee, or joint venture relationship between the Parties. Except as expressly provided in this Agreement, neither Party shall be deemed as authorized or empowered to act on behalf of the other Party, nor to bind or commit the other Party in any manner whatsoever, including but not limited to incurring expenses, liabilities or obligations.

15.13 Severability. If any provision of this Agreement is or becomes invalid, is declared illegal by a court of competent jurisdiction or is deemed unenforceable under then Applicable Law during the Term, it is the intention of the Parties that the remainder of this Agreement shall not be affected thereby, provided that a Party's rights under this Agreement are not materially affected negatively. The Parties agree to renegotiate any such provision or the application thereof in good faith in order to provide a reasonably acceptable alternative to the provision or application thereof that is invalid, illegal, or unenforceable, it being the intent of the Parties that the basic purposes of this Agreement are to be effectuated.

15.14 Time for Taking Action. Whenever periods of time are referred to in this Agreement in days, calendar days are intended unless stated otherwise. When the day or last day for taking any action is not indicated by a specific date, but is instead stated as, e.g. "[***] after…", and the day or last day falls on a day other than a Business Day, then the action may be timely taken on the next Business Day without prejudice to the Party taking action.

15.15 Use of Name. Neither Party shall employ or use the name, trademarks and logo of the other Party in any promotional materials or advertising without obtaining the prior, express written consent of the other Party.

15.16 Waiver. The terms and conditions of the Transaction Documents may be waived only by a written instrument executed by duly authorized representatives of the Party waiving compliance. The failure of either Party at any time to require performance of any provision hereof shall in no manner affect its rights at a later time to enforce the same. No waiver by either Party of any condition or term shall be deemed as a continuing waiver of such condition or term or as a waiver of another condition or term.

[Remainder of the Page Intentionally Left Blank]

IN WITNESS WHEREOF, THE PARTIES CAUSE THIS AGREEMENT TO BE EXECUTED BY THEIR DULY AUTHORIZED REPRESENTATIVES:

MabVax Therapeutics Holdings, Inc.:

July 4, 2018

By: /s/ J. David Hansen
J. David Hansen
President and CEO

MabVax Therapeutics, Inc.

July 4, 2018

By: /s/ J. David Hansen
J. David Hansen
President and CEO

Boehringer Ingelheim International GmbH:
ppa

July 4, 2018

By: /s/ Marc Wittstock
Marc Wittstock
(Authorized Signatory)

Boehringer Ingelheim International GmbH
ppa

July 4, 2018

By: /s/ Martin Mauer
Martin Mauer
(Authorized Signatory)

Exhibits

Exhibit A:	Form of Assignment and Assumption Agreement
Exhibit B:	Form of Bill of Sale
Exhibit C:	[***] Patent Assignment
Exhibit D:	Press Release

Schedules:

Schedule 1.1.26:	Executive Officials
Schedule 1.1.37:	Invoice Requirements
Schedule 1.1.63:	[***] Patents
Schedule 7.1.2:	Finder's Fee

[***]

CONFIDENTIAL TREATMENT REQUESTED

Exhibit A

Assignment and Assumption Agreement

ASSIGNMENT AND ASSUMPTION AGREEMENT

This ASSIGNMENT AND ASSUMPTION AGREEMENT (this "Assignment Agreement") is made as of July 5, 2018, by and between **MabVax Therapeutics Holdings, Inc.**, a corporation organized and existing under the laws of Delaware, USA, having its principal place of business at 11535 Sorrento Valley Road, Suite 400, San Diego, California 92121, **MabVax Therapeutics, Inc.**, a corporation organized and existing under the laws of Delaware, USA, having its principal place of business at 11535 Sorrento Valley Road, Suite 400, San Diego, California 92121, (MabVax Therapeutics Holdings, Inc., and MabVax Therapeutics, Inc. collectively referred to as "Seller") and **Boehringer Ingelheim International GmbH**, having a principal place of business at Binger Strasse 173, 55216 Ingelheim, Germany, ("Buyer").

WHEREAS, Seller and Buyer entered into that certain Asset Purchase and License Agreement, dated as of July 4, 2018 (the "Asset Purchase and License Agreement"); and

WHEREAS, pursuant to the Asset Purchase and License Agreement, Seller has agreed to sell, convey, transfer, assign and deliver to Buyer all of Seller's right, title and interest in, to and under the Acquired Assets, and Buyer has agreed to assume, timely perform and discharge in accordance with their respective terms, the Assumed Liabilities.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound hereby, it is hereby agreed that:

1. Definitions. Unless otherwise defined herein, all capitalized terms used in this Assignment Agreement shall have the meanings set forth in the Asset Purchase and License Agreement.

2. Assignment of Acquired Assets. Effective as of the Closing Date, Seller hereby sells, conveys, transfers, assigns and delivers to Buyer all of Seller's right, title and interest in, to and under the Acquired Assets free and [***], and Buyer hereby accepts such sale, conveyance, transfer, assignment and delivery from Seller; *provided, however*, that the tangible Acquired Assets are being specifically assigned and transferred pursuant to the Bill of Sale and any other Acquired Assets that are specifically assigned or transferred pursuant to any other Transaction Document are being specifically assigned and transferred pursuant to such other Transaction Documents and, in each case, shall not be assigned or transferred pursuant to this Section 2.

3. Assumption of Assumed Liabilities. Effective as of the Closing Date, Buyer hereby assumes, accepts and agrees to timely perform and discharge in accordance with their respective terms any and all of the Assumed Liabilities; *provided, however*, that any Assumed Liabilities that are specifically assumed by Buyer pursuant to any other Transaction Document shall not be assumed pursuant to this Section 3.

4. Subject to the Asset Purchase and License Agreement. This Assignment Agreement is subject in all respects to the terms and conditions of the Asset Purchase and License Agreement, and all of the representations, warranties, covenants and agreements of the Seller and Buyer contained therein, all of which shall survive the execution and delivery of this Assignment Agreement in accordance with the terms of the Asset Purchase and License Agreement. Nothing in this Assignment Agreement shall supersede, amend, alter or modify (nor shall it be deemed or construed to supersede, amend, alter or modify) any of the terms or conditions of the Asset Purchase and License Agreement in any manner whatsoever. In the event of any conflict between the provisions of this Assignment Agreement and the provisions of the Asset Purchase and License Agreement, the provisions of the Asset Purchase and License Agreement shall control and prevail.

5. Representations and Warranties. Except as set forth in the Asset Purchase and License Agreement, the Seller makes no representations or warranties, express or implied, with respect to the Acquired Assets or the Assumed Liabilities, and the Seller expressly disclaims any implied warranties.

6. Successors and Assigns. Except as otherwise set forth in Section 15.2 of the Asset Purchase and License Agreement, no assignment of this Assignment Agreement or of any rights or obligations hereunder may be made by Seller or Buyer, directly or indirectly (by operation of law or otherwise), without the prior written consent of the other party hereto and any attempted assignment without the required consents shall be null and void and without any legal effect This Assignment Agreement shall be binding upon and inure to the benefit of the parties and their respective permitted successors and assigns.

7 . Counterparts. This Assignment Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

8. Amendments; Waiver. This Assignment Agreement may be amended, supplemented or modified in whole or in part if, but only if, such amendment, supplement or modification is in writing and is signed by each party and specific reference to this Assignment Agreement is made. Any provision of this Assignment Agreement may be waived if, but only if, such waiver is in writing and is signed by the party or parties against whom enforcement of any such waiver is sought and specific reference to this Assignment Agreement is made. The waiver by any party hereto of a breach of any provision of this Assignment Agreement shall not operate or be construed as a further or continuing waiver of such breach or as a waiver of any other or subsequent breach. No failure on the part of any party to exercise, and no delay in exercising, any right, power or remedy hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of such right, power or remedy by such party preclude any other or further exercise thereof or the exercise of any other right, power or remedy.

9. Severability. If any provision of this Assignment Agreement is held invalid or unenforceable by any court of competent jurisdiction, the other provisions of this Assignment Agreement shall remain in full force and effect. The parties further agree that if any provision contained herein is, to any extent, held invalid or unenforceable in any respect under the Applicable Laws governing this Assignment Agreement, they shall take any actions necessary to render the remaining provisions of this Assignment Agreement valid and enforceable to the fullest extent permitted by Applicable Law and, to the extent necessary, shall amend or otherwise modify this Assignment Agreement to replace any provision contained herein that is held invalid or unenforceable with a valid and enforceable provision giving effect to the intent of the parties to the greatest extent legally permissible.

10. Governing Law; Jurisdiction. This Agreement shall be construed, interpreted and applied in accordance with the laws of the State New York, excluding its choice of law and conflict of law provisions.

SIGNATURE PAGES FOLLOW

IN WITNESS WHEREOF, the parties hereto have caused this Assignment Agreement to be executed by their respective officers thereunto duly authorized as of the date first above written.

Seller:

MabVax Therapeutics Holdings, Inc.

By: /s/ J. David Hansen
Name: J. David Hansen

Title: President and CEO

Date: July 4, 2018

MabVax Therapeutics, Inc.

By: /s/ J. David Hansen
Name: J. David Hansen

Title: President and CEO

Date: July 4, 2018

***Portions of this Exhibit, indicated by the mark "[***],"* were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.**

Buyer:

Boehringer Ingelheim International GmbH
ppa.

By: /s/ Marc Wittstock
Name: Marc Wittstock

Title: (Authorized Signatory)

Date: July 4, 2018

Boehringer Ingelheim International GmbH
ppa.

By: /s/ Martin Mauer

Name: Martin Mauer

Title: (Authorized Signatory)

Date: July 4, 2018

[Signature Page Exhibit A to Asset Purchase and License Agreement between MabVax Therapeutics Holdings Inc., MabVax Therapeutics Inc., and Boehringer Ingelheim International GmbH, dated July 4, 2018]

Exhibit B

Bill of Sale

BILL OF SALE

This BILL OF SALE (this "Bill of Sale") is made as of July 5, 2018, by and between **MabVax Therapeutics Holdings, Inc**., a corporation organized and existing under the laws of Delaware, USA, having its principal place of business at 11535 Sorrento Valley Road, Suite 400, San Diego, California 92121, **MabVax Therapeutics, Inc.**, a corporation organized and existing under the laws of Delaware, USA, having its principal place of business at 11535 Sorrento Valley Road, Suite 400, San Diego, California 92121, (MabVax Therapeutics Holdings, Inc., and MabVax Therapeutics, Inc. collectively referred to as "Seller") and Boehringer Ingelheim International GmbH, having a principal place of business at Binger Strasse 173, 55216 Ingelheim, Germany, (" Buyer").

WHEREAS, Seller and Buyer entered into that certain Asset Purchase and License Agreement, dated as of July 4, 2018 (the "Asset Purchase and License Agreement"); and

WHEREAS, pursuant to the Asset Purchase and License Agreement, Seller has agreed to sell, convey, transfer, assign and deliver to Buyer all of the Acquired Assets, and Buyer has agreed to purchase the Acquired Assets from Seller.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound hereby, it is hereby agreed that:

1. Definitions. Unless otherwise defined herein, all capitalized terms used in this Bill of Sale shall have the meanings set forth in the Asset Purchase and License Agreement.

2. Transfer of Assets. Effective as of the Closing Date, Seller hereby sells, conveys, transfers, assigns and delivers to Buyer all of Seller's right, title and interest in, to and under the tangible Acquired Assets free and clear of Encumbrances, and Buyer hereby purchases such tangible Acquired Assets and accepts such conveyance, transfer, assignment and delivery; *provided, however*, that any Acquired Assets that are specifically assigned or transferred pursuant to any other Transaction Document shall not be assigned or transferred pursuant to this Section 2.

3. Subject to the Asset Purchase and License Agreement. This Bill of Sale is subject in all respects to the terms and conditions of the Asset Purchase and License Agreement, and all of the representations, warranties, covenants and agreements of the Seller and Buyer contained therein, all of which shall survive the execution and delivery of this Bill of Sale in accordance with the terms of the Asset Purchase and License Agreement. The Acquired Assets are being delivered for good and valuable consideration, pursuant to the terms and conditions contained in the Asset Purchase and License Agreement. Nothing contained herein shall supersede, amend, alter or modify (nor shall it be deemed or construed to supersede, amend, alter or modify) any of the terms or conditions of the Asset Purchase and License Agreement in any manner whatsoever. In the event of any conflict between the provisions of this Bill of Sale and the provisions of the Asset Purchase and License Agreement, the provisions of the Asset Purchase and License Agreement shall control and prevail.

4. Representations and Warranties. Except as set forth in the Asset Purchase and License Agreement, Seller makes no representations or warranties, express or implied, with respect to the Acquired Assets, and Seller expressly disclaims any implied warranties.

5. Successors and Assigns. Except as otherwise set forth in Section 15.2 of the Asset Purchase and License Agreement, no assignment of this Bill of Sale or of any rights or obligations hereunder may be made by Seller or Buyer, directly or indirectly (by operation of law or otherwise), without the prior written consent of the other party hereto and any attempted assignment without the required consents shall be null and void and without any legal effect This Bill of Sale shall be binding upon and inure to the benefit of the parties and their respective permitted successors and assigns.

6 . Counterparts. This Bill of Sale may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

7 . Amendments; Waiver. This Bill of Sale may be amended, supplemented or modified in whole or in part if, but only if, such amendment, supplement or modification is in writing and is signed by each party and specific reference to this Bill of Sale is made. Any provision of this Bill of Sale may be waived if, but only if, such waiver is in writing and is signed by the party or parties against whom enforcement of any such waiver is sought and specific reference to this Bill of Sale is made. The waiver by any party hereto of a breach of any provision of this Bill of Sale shall not operate or be construed as a further or continuing waiver of such breach or as a waiver of any other or subsequent breach. No failure on the part of any party to exercise, and no delay in exercising, any right, power or remedy hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of such right, power or remedy by such party preclude any other or further exercise thereof or the exercise of any other right, power or remedy.

8. Severability. If any provision of this Bill of Sale is held invalid or unenforceable by any court of competent jurisdiction, the other provisions of this Bill of Sale shall remain in full force and effect. The parties further agree that if any provision contained herein is, to any extent, held invalid or unenforceable in any respect under the Applicable Laws governing this Bill of Sale, they shall take any actions necessary to render the remaining provisions of this Bill of Sale valid and enforceable to the fullest extent permitted by Applicable Law and, to the extent necessary, shall amend or otherwise modify this Bill of Sale to replace any provision contained herein that is held invalid or unenforceable with a valid and enforceable provision giving effect to the intent of the parties to the greatest extent legally permissible.

9. Governing Law; Jurisdiction. This Agreement shall be construed, interpreted and applied in accordance with the laws of the State New York, excluding its choice of law and conflict of law provisions.

SIGNATURE PAGES FOLLOW

IN WITNESS WHEREOF, the parties hereto have caused this Bill of Sale to be executed by their respective officers thereunto duly authorized as of the date first above written.

Seller:

MabVax Therapeutics Holdings, Inc.

By: /s/ J. David Hansen
Name: J. David Hansen

Title: President and CEO

Date: July 4, 2018

MabVax Therapeutics, Inc.

By: /s/ J. David Hansen
Name: J. David Hansen

Title: President and CEO

Date: July 4, 2018

***Portions of this Exhibit, indicated by the mark "[***],"* were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.**

Buyer:

Boehringer Ingelheim International GmbH
ppa.

By: /s/ Marc Wittstock

Name: Marc Wittstock

Title: (Authorized Signatory)

Date: July 4, 2018

Boehringer Ingelheim International GmbH
ppa.

By: /s/ Martin Mauer
Name: Martin Mauer

Title: (Authorized Signatory)

Date: July 4, 2018

[Signature Page Exhibit B to Asset Purchase and License Agreement between MabVax Therapeutics Holdings Inc., MabVax Therapeutics Inc., and Boehringer Ingelheim International GmbH, dated July 4, 2018]

Exhibit C

[***] **Patent Assignment**

Portions of this Exhibit, indicated by the mark "[***]," were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Pursuant to the Asset Purchase and License Agreement by and between **Boehringer Ingelheim International GmbH,** Binger Strasse 173, 55216 Ingelheim, Germany ("**BII**"), **MabVax Therapeutics Holdings, Inc.**, a corporation organized and existing under the laws of Delaware, USA, having its principal place of business at 11535 Sorrento Valley Road, Suite 400, San Diego, California 92121, **MabVax Therapeutics Inc**., a corporation organized and existing under the laws of Delaware, USA, having its principal place of business at 11535 Sorrento Valley Road, Suite 400, San Diego, California 92121 (MabVax Therapeutics Holdings, Inc. and MabVax Therapeutics Inc. collectively referred to as "MABVAX"), and regarding MABVAX´s assets [***], effective July 4, 2018 (the "Agreement"), for good and valuable consideration to them paid by BII, invoiced as of this Closing Date, MABVAX hereby assigns as of the Closing Date to BII the full and entire property, right and title in [***] Patents listed in Schedule 1.1.63 of the Agreement [***], a copy of which is attached hereto for reference, so that BII may enjoy the full benefits and all the rights resulting therefrom without restriction.

Subject to the Agreement, MABVAX hereby authorizes BII to take any and all actions in connection with the Patents, in BII´s own name and at BII´s sole expense.

MABVAX Therapeutics Holdings, Inc.

By: /s/ J. David Hansen

Name: J. David Hansen

Title: President and CEO

Date: July 4, 2018

MABVAX Therapeutics, Inc.

By: /s/ J. David Hansen

Name: J. David Hansen

Title: President and CEO

Date: July 4, 2018

Portions of this Exhibit, indicated by the mark "[***],"* were omitted and have been filed separately with the Secretary of the *Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Boehringer Ingelheim International GmbH

ppa. /s/ Marc Wittstock

By: __Marc Wittstock_____

Name: Marc Wittstock

Title: (Authorized Signatory)

Date: July 4, 2018

Boehringer Ingelheim International GmbH

ppa. /s/ Martin Mauer

By: __ Martin Mauer_____

Name: Martin Mauer

Title: (Authorized Signatory)

Date: July 4, 2018

[Signature Page Exhibit C to Asset Purchase and License Agreement between MabVax Therapeutics Holdings Inc., MabVax Therapeutics Inc., and Boehringer Ingelheim International GmbH, dated July 4, 2018]

***Portions of this Exhibit, indicated by the mark "[***],"* were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.**

Exhibit D

Press Release

MabVax Therapeutics and Boehringer Ingelheim Sign Asset Purchase and License Agreement and Related Agreements for an Antibody Development Program Targeting Multiple Solid Tumor Cancers

SAN DIEGO, CA – **July 9, 2018** – MabVax Therapeutics Holdings, Inc. (Nasdaq: MBVX), a clinical-stage oncology drug development company and Boehringer Ingelheim today announced they have signed an asset acquisition and related agreements centered on MabVax's program targeting a glycan commonly overexpressed on multiple solid tumor cancers. Boehringer Ingelheim has acquired all rights in and to the program.

MabVax will receive a total of US $11 million in upfront and near term milestones as well as downstream regulatory milestone payments plus further earn-out payments. The asset acquisition is separate and distinct from other programs under development at MabVax, enabling MabVax to retain all rights to its lead HuMab-5B1antibody program which is in Phase 1 clinical trials as a therapeutic product and as a diagnostic product, as well as other antibody discovery programs from the Company's rich antibody discovery portfolio targeting other cancer antigens.

MabVax discovered the antibody series at the center of this transaction from biological samples, originally from patients who were vaccinated against their solid tumors with a glycan antigen-containing vaccine. The discovery of fully human antibodies directly from vaccinated cancer patients has potential advantages which include greater specificity and reduced toxicities. MabVax completed and has reported on early preclinical development activities to establish the utility of the program.

"We are very pleased to have Boehringer Ingelheim as a major industry partner to further develop one of our preclinical antibody assets based on our proprietary HuMab technology," said David Hansen, President and CEO of MabVax Therapeutics. "This agreement with Boehringer Ingelheim recognizes the value of our innovative approach to discovering novel antibodies to diagnose and treat cancer. We have been committed since the founding of the Company to discovering and developing unique fully human antibodies to diagnose and treat patients with cancers where there remain significant unmet medical needs."

***Portions of this Exhibit, indicated by the mark "[***],"* were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.**

About MabVax:

MabVax Therapeutics Holdings, Inc. is a clinical-stage biotechnology company with a fully human antibody discovery platform focused on the rapid translation into clinical development of products to address unmet medical needs in the treatment of cancer. Our antibody MVT-5873, is a fully human IgG1 monoclonal antibody (mAb) that targets sialyl Lewis A (sLea), an epitope on CA19-9, and is currently in Phase 1 clinical trials as a therapeutic agent for patients with pancreatic cancer and other CA19-9 positive tumors. CA19-9 is expressed in over 90% of pancreatic cancers and in other diseases including small cell lung and GI cancers. CA19-9 plays an important role in tumor adhesion and metastasis, and is a marker of an aggressive cancer phenotype. CA19-9 serum levels are considered a valuable adjunct in the diagnosis, prognosis and treatment monitoring of pancreatic cancer. With our collaborators including Memorial Sloan Kettering Cancer Center, Sarah Cannon Research Institute, Honor Health and Imaging Endpoints, we have treated over 56 patients with either our therapeutic antibody designated as MVT-5873 or our PET imaging diagnostic product designated as MVT-2163 in Phase 1 clinical studies, and demonstrated early safety and specificity for the target. Patient dosing is continuing in Phase 1 clinical studies of MVT-5873 in combination with nab-paclitaxel and gemcitabine to patients newly diagnosed with CA19-9 positive pancreatic cancer, and for the Company's radioimmunotherapy product MVT-1075. Other discovery programs at MabVax are in preclinical development. For additional information, please visit the Company's website, www.mabvax.com.

Forward Looking Statements

This press release contains “forward-looking statements” regarding matters that are not historical facts, including statements relating to the asset acquisition and related agreements centered on the undisclosed program, and what programs remain at MabVax that continue to be under development in the Company’s development pipeline. We have no assurance that all of the product development pipeline will be fully developed by the Company. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. Words such as "anticipates," "plans," "expects," "intends," "will," "potential," “hope” and similar expressions are intended to identify forward-looking statements. These forward-looking statements are based upon current expectations of the Company and involve assumptions that may never materialize or may prove to be incorrect. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of various risks and uncertainties. Detailed information regarding factors that may cause actual results to differ materially from the results expressed or implied by statements in this press release relating to the Company may be found in the Company’s periodic filings with the Securities and Exchange Commission, including the factors described in the section entitled “Risk Factors” in its annual report on Form 10-K for the fiscal year ended December 31, 2017, as amended and supplemented from time to time and the Company's Quarter Reports on Form 10-Q and other filings submitted by the Company to the SEC, copies of which may be obtained from the SEC's website at www.sec.gov. The parties do not undertake any obligation to update forward-looking statements contained in this press release.

Investor Contact:
Email: MabVaxIR@mabvax.com

Media Contact:
Russo Partners LLC
Phone: 212-845-4272
Email: travis.kruse@russopartnersllc.com

Portions of this Exhibit, indicated by the mark “[***],” were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant’s application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

CONFIDENTIAL TREATMENT REQUESTED

Schedule 1.1.26

Executive Official

1. For MABVAX: David Hansen, CEO

2. For BII: Dr. Clive Wood, Corporate Senior Vice President, Discovery Research

Schedule 1.1.37
Invoice Requirements

[***]

Schedule 1.1.63

[***]

COUNTRY	SERIAL NO.	Attorney Docket NO.	ASSIGNEE	INVENTORS	PRIORITY FILING DATE
[***]	[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***][***]	[***][***]	[***]	[***]
[***]	[***]	[***][***]	[***][***]	[***]	[***]

Portions of this Exhibit, indicated by the mark "[***]," were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

CONFIDENTIAL TREATMENT REQUESTED

Schedule 7.1.2

Finder's Fee

Greenhill & Co. LLC , [***], 300 Park Ave, New York, NY 10022 (borne by MABVAX)

***Portions of this Exhibit, indicated by the mark "[***],"* were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.**

CONFIDENTIAL TREATMENT REQUESTED

Schedule 11.4

Side Agreement

AGREEMENT

by and between

BOEHRINGER INGELHEIM INTERNATIONAL GMBH

and

[***]

and

MABVAX THERAPEUTICS HOLDINGS, INC.

and

MABVAX THERAPEUTICS, INC.

BII Contract No [***]

***Portions of this Exhibit, indicated by the mark "[***],"* were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.**

This Agreement (the "**Agreement**") is made on July 4, 2018 (the "**Effective Date**") under the terms and conditions herein by and between **Boehringer Ingelheim International GmbH** having a principal place of business at Binger Strasse 173, 55216 Ingelheim, Germany, (hereinafter referred to as "**BII**"), **[***] MabVax Therapeutics Holdings, Inc**., a corporation organized and existing under the laws of Delaware, USA, having its principal place of business at 11535 Sorrento Valley Road, Suite 400, San Diego, California 92121, and **MabVax Therapeutics, Inc**., a corporation organized and existing under the laws of Delaware, USA, having its principal place of business at 11535 Sorrento Valley Road, Suite 400, San Diego, California 92121, (MabVax Therapeutics Holdings, Inc. and MabVax Therapeutics, Inc. hereinafter collectively referred to as "**MabVax**"). BII, [***] MabVax are referred to individually as a "**Party**" and collectively as the "**Parties**."

WHEREAS, BII and MabVax have entered into an Asset Purchase and License Agreement on July 4, 2018 (the "BII/MabVax Agreement"), attached hereto in Appendix 1.

WHEREAS, all terms defined in this Agreement are used with those meanings in this Agreement. Capitalized terms not defined in this Agreement are used with the meanings as defined in the BII/MabVax Agreement.

WHEREAS, under the BII/MabVax Agreement, MabVax sells, conveys, assigns and transfers to BII, and BII acquires from MabVax, certain of MabVax's assets solely and exclusively related to MabVax's TN Program, as further defined in the BII/MabVax Agreement as Acquired Assets.

WHEREAS, MabVax Therapeutics Inc. [***]

NOW, THEREFORE, the Parties hereby agree as follows:

1. MabVax agrees and acknowledges [***], as amended, MabVax shall continue to be responsible for all of its obligations therein, including but not limited to any and all payment obligations due by MabVax to [***]). ..

2. BII agrees that in the event that [***] expires or is terminated for any reason, including but not limited to bankruptcy or liquidation of MabVax and subject to Section 3 below, BII's obligations to MabVax Therapeutics Holdings Inc. under the following Sections of the BII/MabVax Agreement shall [***]:

   a. Section 5.3: All [***];

   b. Section 5.4: All [***]

   c. Section 5.4.5: BII shall [***] described in Section 5.4.5 of the BII/MabVax Agreement.

   d. Sections 5.5 – 5.9: All payment obligations [***].

3. Notwithstanding anything to the contrary, BII [***] MabVax agree that [***].

For avoidance of doubt, [***]

4. [***] will not assert against [***] any [***] in accordance with the above Section 2.

5. This Agreement shall be construed, interpreted and applied in accordance with the laws of the State New York, excluding its choice of law and conflict of law provisions. Any dispute which has not been resolved amicably by BII, MabVax [***], as applicable, shall be escalated to the applicable executive official level employee of each BII, [***] MabVax. Said employees shall use further good faith efforts to reach resolution on such dispute within [***].

6. If BII, MabVax [***], as applicable do not reach resolution on such dispute within such [***] period, [***] to settle the dispute by mediation, administered by the American Arbitration Association (the "AAA") under its Commercial Mediation Procedures, before resorting to the arbitration procedure set forth in Section 8 below. BII, MabVax and/or [***], as applicable, may initiate mediation upon written notice to the other party(ies) and the AAA ("Mediation Notice Date"), whereupon the respective parties shall be obligated to engage in a mediation proceeding. The mediation shall commence within [***] of the Mediation Notice Date. The mediation shall be conducted by a single mediator in New York, New York. The party requesting mediation shall designate two (2) or more nominees for mediator in its notice. The other party(ies) may accept one of the nominees or may designate its own nominees by notice addressed to the AAA and to the requesting party. If within [***] following the Mediation Notice Date, the parties to the dispute have not selected a mutually acceptable mediator, a mediator shall be appointed by the AAA according to the Commercial Mediation Rules. The mediator shall attempt to facilitate a negotiated settlement of the dispute, but shall have no authority to impose any settlement terms on the parties to the dispute. The expenses of the mediation shall be borne equally by the parties to such mediation, but each party shall be responsible for its own counsel fees and expenses. BII, MabVax [***] acknowledge that the existence, content, or results of a dispute under such mediation shall not be disclosed without the prior written consent of BII, MabVax [***], as applicable.

7. Any dispute which has not been resolved by the procedures set forth in Sections 6 or 7 above shall be finally resolved by binding arbitration in accordance with the ICC arbitration rules by three (3) arbitrators. Place of such arbitration shall be New York, New York. The language of the arbitration proceeding shall be English. Except to the extent necessary to confirm or obtain judgment on an award or decision or as may be required by Applicable Law, neither BII, MabVax [***], as applicable, may, and BII, MabVax [***] shall instruct the arbitrators not to, disclose the existence, content, or results of a dispute without the prior written consent of the parties to such arbitration.

8. The existence, and the terms, of this Agreement are strictly confidential. No disclosure of the existence, and/or the terms, of this Agreement may be made by either Party, and no Party shall use the name, trademark, trade name or logo of the other Party, its affiliates or their respective employees in any publicity, promotion, news release or disclosure relating to this Agreement or its subject matter, without the prior express written permission of the other Party, except as may be required by applicable law or securities exchange regulations.

9. This is the entire Agreement, including all exhibits and schedules hereto, between the Parties with respect to the subject matter hereof and supersedes all prior representations, understanding and agreements between the Parties with respect to the subject matter hereof.

10. If any provision of this Agreement is or becomes invalid, is declared illegal by a court of competent jurisdiction or is deemed unenforceable under then applicable law during the Term, it is the intention of the parties that the remainder of this Agreement shall not be affected thereby, provided that a party's rights under this Agreement are not materially affected negatively. The Parties agree to renegotiate any such provision or the application thereof in good faith in order to provide a reasonably acceptable alternative to the provision or application thereof that is invalid, illegal, or unenforceable, it being the intent of the parties that the basic purposes of this Agreement are to be effectuated.

11. This Agreement may be executed simultaneously in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

[Remainder of the Page Intentionally Left Blank]

Portions of this Exhibit, indicated by the mark "[***]," were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

IN WITNESS WHEREOF, THE PARTIES CAUSE THIS AGREEMENT TO BE EXECUTED BY THEIR DULY AUTHORIZED REPRESENTATIVES:

Ingelheim,_____July 4, 2018_____

(date)

Boehringer Ingelheim International GmbH

ppa. ppa.

___/s/ Marc Wittstock_____ __/s/ Martin Mauer_____

Name: Marc Wittstock

Authorized Signatory Authorized Signatory

Date: ____July 4, 2018_____ [Place] New York, July 5, 2018

MabVax Therapeutics Holdings Inc. **[***]**

/s/ J. David Hansen [***]

_____ _____

Name: J. David Hansen Name: [***]

Authorized Signatory Authorized Signatory

[Place],___July 4, 2018_____

(date)

MabVax Therapeutics Inc.

/s/ J. David Hansen

_____

Name: J. David Hansen

Authorized Signatory

Portions of this Exhibit, indicated by the mark "[***]," were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Appendix 1
Asset Purchase and License Agreement

***Portions of this Exhibit, indicated by the mark "[***],"* were omitted and have been filed separately with the Secretary of the Commission pursuant to the Registrant's application requesting confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.**

Exhibit 31.1

Certification Under Section 302

I, J. David Hansen, certify that:

1. I have reviewed this quarterly report on Form 10-Q of MabVax Therapeutics Holdings, Inc.;

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

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

4. The registrant's other certifying officer(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.

Date: November 13, 2018

By: /s/ J. David Hansen
J. David Hansen
Chief Executive Officer (Principal Executive Officer)

Exhibit 31.2

Certification Under Section 302

I, Gregory P. Hanson, certify that:

1. I have reviewed this quarterly report on Form 10-Q of MabVax Therapeutics Holdings, Inc.;

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

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

4. The registrant's other certifying officer(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.

Date: November 13, 2018

By: /s/ Gregory P. Hanson
Gregory P. Hanson
Chief Financial Officer (Principal Financial and Accounting Officer)

Exhibit 32.1

Certification
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

Pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, chapter 63 of title 18, United States Code), each of the undersigned officers of MabVax Therapeutics Holdings, Inc., does hereby certify, to such officer's knowledge, that:

The Quarterly Report on Form 10-Q of MabVax Therapeutics Holdings, Inc. for the three and nine months ended September 30, 2018, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and the information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of MabVax Therapeutics Holdings, Inc.

Date: November 13, 2018 By: /s/ J. David Hansen
J. David Hansen
Chief Executive Officer (Principal Executive Officer)

Date: November 13, 2018 By: /s/ Gregory P. Hanson
Gregory P. Hanson
Chief Financial Officer (Principal Financial and Accounting Officer)

A signed original of this written statement required by Section 906 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.