

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2019
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 NO. 001-37759

OUTLOOK THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

38-3982704
(I.R.S. Employer
Identification No.)

7 Clarke Drive
Cranbury, New Jersey
(Address of principal executive offices)

08512
(Zip Code)

(609) 619-3990

(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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Trading Symbol(s)</u>	<u>Name of each exchange on which registered</u>
Common Stock	OTLK	The Nasdaq Stock Market LLC
Series A Warrants	OTLKW	The Nasdaq Stock Market LLC

The number of shares of the registrant's common stock, \$0.01 par value per share, outstanding as of May 13, 2019 was 22,099,630.

Outlook Therapeutics, Inc.
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In this report, unless otherwise stated or as the context otherwise requires, references to "Outlook Therapeutics," "Outlook," "the Company," "we," "us," "our" and similar references refer to Outlook Therapeutics, Inc. (formerly known as Oncobiologics, Inc.) and its consolidated subsidiaries. The Outlook logo, Oncobiologics logo and other trademarks or service marks of Outlook Therapeutics, Inc. appearing in this report are the property of Outlook Therapeutics, Inc. This report also contains registered marks, trademarks and trade names of other companies. All other trademarks, registered marks and trade names appearing in this report are the property of their respective holders.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements about us and our industry that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this report, including statements regarding our future financial condition, business strategy and plans, and objectives of management for future operations, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “believe,” “may,” “could,” “will,” “estimate,” “continue,” “anticipate,” “intend,” “seek,” “plan,” “expect,” “should,” “would,” “potentially” or the negative of these terms or similar expressions in this report.

We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements are subject to a number of known and unknown risks, uncertainties and assumptions, including risks described in the section titled “Risk Factors” contained in our annual report on Form 10-K for the year ended September 30, 2018 filed with the SEC on December 18, 2018, including, among other things, risks associated with:

- the timing and the success of the design of the clinical trials and planned clinical trials of our lead product candidate, ONS-5010;
- whether the results of our clinical trials will be sufficient to support domestic or global regulatory approvals;
- our ability to obtain and maintain regulatory approval for ONS-5010 in the United States and other markets if we successfully complete clinical trials;
- our expectations regarding the potential market size and the size of the patient populations for our product candidates, if approved, for commercial use;
- our ability to fund our working capital requirements;
- the rate and degree of market acceptance of our current and future product candidates;
- the implementation of our business model and strategic plans for our business and product candidates;
- developments or disputes concerning our intellectual property or other proprietary rights;
- our ability to maintain and establish collaborations or obtain additional funding;
- our expectations regarding government and third-party payor coverage and reimbursement;
- our ability to compete in the markets we serve; and
- the factors that may impact our financial results.

These risks are not exhaustive. Additional factors could harm our business and financial performance. Moreover, we operate in a very competitive and rapidly changing environment. New risk factors emerge from time to time, and it is not possible for our management to predict all risk factors, 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, or implied by, any forward-looking statements.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

**Outlook Therapeutics, Inc.
Consolidated Balance Sheets
(unaudited)**

Assets	March 31, 2019	September 30, 2018
Current assets:		
Cash	\$ 155,468	\$ 1,717,391
Prepaid and other current assets	1,974,664	1,585,089
Total current assets	<u>2,130,132</u>	<u>3,302,480</u>
Property and equipment, net	14,601,716	18,489,976
Other assets	440,339	491,039
Total assets	<u>\$ 17,172,187</u>	<u>\$ 22,283,495</u>
Liabilities, convertible preferred stock and stockholders' equity (deficit)		
Current liabilities:		
Convertible senior secured notes	\$ 7,617,419	\$ 13,179,449
Current portion of long-term debt	1,052,714	66,480
Current portion of capital lease obligations	217,949	520,794
Stockholder notes	3,612,500	4,612,500
Accounts payable	5,112,803	3,609,607
Accrued expenses	5,187,301	6,458,471
Income taxes payable	1,856,129	1,856,129
Deferred revenue	2,335,392	1,738,603
Total current liabilities	<u>26,992,207</u>	<u>32,042,033</u>
Long-term debt	75,073	98,487
Capital lease obligations	3,389,087	3,453,256
Warrant liability	2,359,343	1,227,225
Deferred revenue	4,116,993	2,758,262
Other liabilities	3,286,451	3,514,738
Total liabilities	<u>40,219,154</u>	<u>43,094,001</u>
Commitments (Note 9)		
Convertible preferred stock:		
Series A convertible preferred stock, par value \$0.01 per share: 1,000,000 shares authorized, no shares issued and outstanding	-	-
Series A-1 convertible preferred stock, par value \$.01 per share: 200,000 shares authorized, 63,250 shares issued and outstanding at March 31, 2019 and 60,203 shares issued and outstanding at September 30, 2018	5,039,195	4,734,416
Total convertible preferred stock	<u>5,039,195</u>	<u>4,734,416</u>
Stockholders' equity (deficit):		
Preferred stock, par value \$0.01 per share: 7,300,000 shares authorized, no shares issued and outstanding	-	-
Series B convertible preferred stock, par value \$0.01 per share: 1,500,000 shares authorized, no shares issued	-	-
Common stock, par value \$0.01 per share; 200,000,000 shares authorized; 11,759,630 shares issued and outstanding at March 31, 2019 and 9,027,491 shares issued and outstanding at September 30, 2018	117,596	90,275
Additional paid-in capital	211,739,503	190,672,166
Accumulated deficit	(239,943,261)	(216,307,363)
Total stockholders' equity (deficit)	<u>(28,086,162)</u>	<u>(25,544,922)</u>
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	<u>\$ 17,172,187</u>	<u>\$ 22,283,495</u>

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

Outlook Therapeutics, Inc.
Consolidated Statements of Operations
(unaudited)

	Three Months Ended March 31,		Six months ended March 31,	
	2019	2018	2019	2018
Collaboration revenues	\$ 641,140	\$ 771,890	\$ 1,708,738	\$ 1,543,780
Operating expenses:				
Research and development	6,497,619	5,156,386	14,918,544	5,558,788
General and administrative	1,849,158	2,446,505	4,753,146	5,995,757
	<u>8,346,777</u>	<u>7,602,891</u>	<u>19,671,690</u>	<u>11,554,545</u>
Loss from operations	(7,705,637)	(6,831,001)	(17,962,952)	(10,010,765)
Interest expense, net	1,053,877	920,870	2,174,726	1,638,753
Loss on extinguishment of debt	183,554	-	183,554	1,252,353
Change in fair value of warrant liability	1,301,728	(211,992)	(334,592)	(290,775)
Loss before income taxes	(10,244,796)	(7,539,879)	(19,986,640)	(12,611,096)
Income tax benefit	-	-	-	(3,150,716)
Net loss	(10,244,796)	(7,539,879)	(19,986,640)	(9,460,380)
Recognition of beneficial conversion feature upon issuance of Series A and A-1 convertible preferred stock	(61,365)	(381,664)	(61,365)	(15,736,683)
Series A and A-1 convertible preferred stock dividends and related settlement	(154,271)	(636,695)	(304,779)	(1,087,496)
Deemed dividend upon modification of warrants	(829,530)	-	(829,530)	-
Net loss attributable to common stockholders	<u>\$ (11,289,962)</u>	<u>\$ (8,558,238)</u>	<u>\$ (21,182,314)</u>	<u>\$ (26,284,559)</u>
Per share information:				
Net loss per share of common stock, basic and diluted	<u>\$ (0.98)</u>	<u>\$ (2.66)</u>	<u>\$ (1.98)</u>	<u>\$ (8.29)</u>
Weighted average shares outstanding, basic and diluted	<u>11,529,033</u>	<u>3,216,682</u>	<u>10,677,020</u>	<u>3,170,530</u>

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

Outlook Therapeutics, Inc.
Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
(unaudited)

	Convertible Preferred Stock		Stockholders' Equity (Deficit)				
	Series A-1		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount			
Balance at January 1, 2019	61,708	\$ 4,884,924	10,636,421	\$ 106,365	\$ 203,237,836	\$ (229,698,465)	\$ (26,354,264)
Proceeds from exercise of common stock warrants	-	-	358	3	(3)	-	-
Private placement sale of common stock, net of costs	-	-	1,072,156	10,721	7,986,738	-	7,997,459
Issuance of vested restricted stock units	-	-	301	3	(3)	-	-
Issuance of common stock in connection with conversion of senior secured notes	-	-	50,394	504	401,464	-	401,968
Series A-1 convertible preferred stock dividends and related settlement	1,542	154,271	-	-	(154,271)	-	(154,271)
Stock-based compensation expense	-	-	-	-	267,742	-	267,742
Net loss	-	-	-	-	-	(10,244,796)	(10,244,796)
Balance at March 31, 2019	63,250	\$ 5,039,195	11,759,630	\$ 117,596	\$ 211,739,503	\$ (239,943,261)	\$ (28,086,162)

	Convertible Preferred Stock		Stockholders' Equity (Deficit)						
	Series A		Series B Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount	Shares	Amount			
Balance at January 1, 2018	250,000	\$ 17,190,302	1,500,000	\$ 2,661,972	3,191,340	\$ 31,913	\$ 160,353,714	\$ (188,135,903)	\$ (25,088,304)
Issuance of vested restricted stock units	-	-	-	-	26,217	263	(263)	-	-
Series A convertible preferred stock dividends	11,045	1,104,480	-	-	-	-	(636,695)	-	(636,695)
Stock-based compensation expense	-	-	-	-	-	-	(300,211)	-	(300,211)
Net loss	-	-	-	-	-	-	-	(7,539,879)	(7,539,879)
Balance at March 31, 2018	261,045	\$ 18,294,782	1,500,000	\$ 2,661,972	3,217,557	\$ 32,176	\$ 159,416,545	\$ (195,675,782)	\$ (33,565,089)

	Convertible Preferred Stock		Stockholders' Equity (Deficit)				
	Series A-1		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount			
Balance at October 1, 2018	60,203	\$ 4,734,416	9,027,491	\$ 90,275	\$ 190,672,166	\$ (216,307,363)	\$ (25,544,922)
Cumulative effect of adoption of ASU 2014-09 (Topic 606)	-	-	-	-	-	(3,649,258)	(3,649,258)
Proceeds from exercise of common stock warrants	-	-	909	9	(9)	-	-
Private placement sale of common stock, net of costs	-	-	2,680,390	26,804	19,781,513	-	19,808,317
Issuance of vested restricted stock units	-	-	446	4	(4)	-	-
Issuance of common stock in connection with conversion of senior secured notes	-	-	50,394	504	401,464	-	401,968
Series A-1 convertible preferred stock dividends and related settlement	3,047	304,779	-	-	(304,779)	-	(304,779)
Stock-based compensation expense	-	-	-	-	1,189,152	-	1,189,152
Net loss	-	-	-	-	-	(19,986,640)	(19,986,640)
Balance at March 31, 2019	63,250	\$ 5,039,195	11,759,630	\$ 117,596	\$ 211,739,503	\$ (239,943,261)	\$ (28,086,162)

	Convertible Preferred Stock		Stockholders' Equity (Deficit)						
	Series A		Series B Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount	Shares	Amount			
Balance at October 1, 2017	32,628	\$ 2,924,441	-	\$ -	3,116,743	\$ 31,167	\$ 152,533,260	\$ (186,215,402)	\$ (33,650,975)
Issuance of vested restricted stock units	-	-	-	-	100,814	1,009	(1,009)	-	-
Sale of Series A convertible preferred stock and common stock warrants, net of costs	217,372	14,265,861	-	-	-	-	6,382,181	-	6,382,181
Series A convertible preferred stock dividends and related settlement	11,045	1,104,480	-	-	-	-	(1,087,496)	-	(1,087,496)
Conversion of senior secured notes into Series B convertible preferred stock	-	-	1,500,000	2,661,972	-	-	-	-	2,661,972
Stock-based compensation expense	-	-	-	-	-	-	1,589,609	-	1,589,609
Net loss	-	-	-	-	-	-	-	(9,460,380)	(9,460,380)
Balance at March 31, 2018	261,045	\$ 18,294,782	1,500,000	\$ 2,661,972	3,217,557	\$ 32,176	\$ 159,416,545	\$ (195,675,782)	\$ (33,565,089)

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

Outlook Therapeutics, Inc.
Consolidated Statements of Cash Flows
(unaudited)

	Six months ended March 31,	
	2019	2018
OPERATING ACTIVITIES		
Net loss	\$ (19,986,640)	\$ (9,460,380)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	1,639,618	1,407,888
Loss on extinguishment of debt	183,554	1,252,353
Non-cash interest expense	895,255	970,287
Stock-based compensation	1,140,031	1,589,609
Change in fair value of warrant liability	(334,592)	(290,775)
Loss on disposal of property and equipment	2,911,138	-
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(88,514)	(262,503)
Other assets	42,527	(56,401)
Accounts payable	233,569	(6,909,512)
Accrued expenses	(778,364)	(2,584,186)
Deferred revenue	(1,693,738)	(1,543,780)
Other liabilities	(221,287)	(222,627)
Net cash used in operating activities	<u>(16,057,443)</u>	<u>(16,110,027)</u>
INVESTING ACTIVITIES		
Purchase of property and equipment	(286,569)	(1,350,329)
Net cash used in investing activities	<u>(286,569)</u>	<u>(1,350,329)</u>
FINANCING ACTIVITIES		
Proceeds from the sale of common stock, net of offering costs	19,808,317	-
Proceeds from issuance of Series A convertible preferred stock	-	21,737,200
Payments of capital leases obligations	(415,697)	(375,081)
Repayment of debt	(4,627,180)	(62,009)
Payment of financing costs	-	(1,089,158)
Net cash provided by financing activities	<u>14,765,440</u>	<u>20,210,952</u>
Effect of foreign exchange rate on cash	16,649	-
Net (decrease) increase in cash	(1,561,923)	2,750,596
Cash at beginning of period	1,717,391	3,185,519
Cash at end of period	<u>\$ 155,468</u>	<u>\$ 5,936,115</u>
Supplemental disclosure of cash flow information		
Cash paid for interest	<u>\$ 1,681,746</u>	<u>\$ 25,505</u>
Accrued interest settled by conversion into common stock	<u>\$ 1,393</u>	<u>\$ -</u>
Supplemental schedule of noncash investing activities:		
Purchases of property and equipment in accounts payable and accrued expenses	<u>\$ 1,095,266</u>	<u>\$ 27,870</u>
Supplemental schedule of noncash financing activities:		
Carrying amount of senior secured notes converted into common stock	<u>\$ 400,575</u>	<u>\$ -</u>
Issuance of Series B convertible preferred stock upon conversion of senior secured notes, net of unamortized debt discount	<u>\$ -</u>	<u>\$ 1,409,619</u>
Issuance of capital lease obligations in connection with purchase of property and equipment	<u>\$ 48,682</u>	<u>\$ 3,401,964</u>
Change in fair value of convertible senior secured notes warrants recorded as debt discount	<u>\$ 1,466,710</u>	<u>\$ -</u>
Series A and A-1 convertible preferred stock dividends and related settlement	<u>\$ 304,779</u>	<u>\$ 1,104,480</u>
Accrued directors fees settled in fully vested stock options	<u>\$ 49,121</u>	<u>\$ -</u>

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

Outlook Therapeutics, Inc.
Notes to Unaudited Interim Consolidated Financial Statements

1. Organization and Description of Business

Outlook Therapeutics, Inc., (“Outlook” or the “Company”) was incorporated in New Jersey on January 5, 2010 as Oncobiologics, Inc., started operations in July 2011, reincorporated in Delaware by merging with and into a Delaware corporation in October 2015 and changed its name to “Outlook Therapeutics, Inc.” in November 2018. The Company is a late clinical-stage biopharmaceutical company focused on developing and commercializing ONS-5010, a complex monoclonal antibody (“mAb”) therapeutic for various ophthalmic indications. The Company is based in Cranbury, New Jersey.

2. Liquidity

The Company has incurred substantial losses and negative cash flows from operations since its inception and has an accumulated deficit of \$239.9 million as of March 31, 2019. As of March 31, 2019, the Company had substantial indebtedness that included \$8.5 million of senior secured notes that mature on June 30, 2019, \$3.6 million unsecured notes that were due on demand as of such date, and \$1.0 million of unsecured notes that were also due on demand as of such date but which are subject to a forbearance agreement through March 7, 2020. These factors raise substantial doubt about the Company’s ability to continue as a going concern. The accompanying unaudited interim consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. The unaudited interim consolidated financial statements do not include any adjustments related to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might result from the outcome of this uncertainty.

On November 30, 2018, the Company received approval from the New Jersey Economic Development Authority’s Technology Business Tax Certificate Transfer Program to sell approximately \$3.7 million of its unused New Jersey net operating losses (“NOLs”) and research and development tax credits (“R&D credits”). The Company expects to receive approximately \$3.4 million of proceeds from the sale of the New Jersey NOLs and R&D credits, of which approximately \$0.8 million was received in April 2019.

On April 12, 2019, the Company completed a public offering of 10,340,000 shares of its common stock, 15-month warrants to purchase up to an aggregate of 10,340,000 shares of common stock and five-year warrants to purchase up to an aggregate of 10,340,000 shares of common stock. The shares of common stock and the warrants were immediately separable and were issued separately. The warrants are exercisable immediately at an exercise price of \$2.90 per share. The Company received approximately \$26.2 million in net proceeds from the public offering after payment of fees, expenses and underwriting discounts and commissions.

Management believes that the Company’s existing cash as of March 31, 2019, the \$26.2 million of net proceeds from the April 2019 public common stock and warrants offering and anticipated proceeds from the sale of New Jersey NOLs and R&D credits will be sufficient to fund its operations into December 2019, excluding any unscheduled repayment of debt. Substantial additional financing will be needed by the Company to fund its operations in the future and to commercially develop its product candidates. Management is currently evaluating different strategies to obtain the required funding for future operations. These strategies may include, but are not limited to: payments from potential strategic research and development partners, licensing and/or marketing arrangements with pharmaceutical companies, private placements of equity and/or debt securities, sale of its development stage product candidates to third parties and public offerings of equity and/or debt securities. There can be no assurance that these future funding efforts will be successful.

The Company’s future operations are highly dependent on a combination of factors, including (i) the timely and successful completion of additional financing discussed above; (ii) the Company’s ability to complete revenue-generating partnerships with pharmaceutical companies; (iii) the success of its research and development; (iv) the development of competitive therapies by other biotechnology and pharmaceutical companies, and, ultimately; (v) regulatory approval and market acceptance of the Company’s proposed future products.

3. Basis of Presentation and Summary of Significant Accounting Policies

Basis of presentation

The accompanying unaudited interim consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles (“GAAP”) for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. Any reference in these notes to applicable guidance is meant to refer to GAAP as found in the Accounting Standards Codification (“ASC”) and Accounting Standards Updates (“ASU”) of the Financial Accounting Standards Board (“FASB”).

Outlook Therapeutics, Inc.
Notes to Unaudited Interim Consolidated Financial Statements

In the opinion of management, the accompanying unaudited interim consolidated financial statements include all normal and recurring adjustments (which consist primarily of accruals, estimates and assumptions that impact the financial statements) considered necessary to present fairly the Company's financial position as of March 31, 2019 and its results of operations for the three and six months ended March 31, 2019 and 2018 and cash flows for the six months ended March 31, 2019 and 2018. Operating results for the three and six months ended March 31, 2019 are not necessarily indicative of the results that may be expected for the full year ending September 30, 2019. The unaudited interim consolidated financial statements, presented herein, do not contain the required disclosures under GAAP for annual consolidated financial statements. The accompanying unaudited interim consolidated financial statements should be read in conjunction with the annual audited consolidated financial statements and related notes as of and for the year ended September 30, 2018 included in the Company's Annual Report on Form 10-K filed with the Securities and Exchange Commission ("SEC") on December 18, 2018.

Reverse stock-split

On March 15, 2019, the Company amended its amended and restated certificate of incorporation to implement a one-for-eight reverse stock split of its common stock. As a result of the reverse stock split, the Company adjusted the share amounts under its employee incentive plans, outstanding options, restricted stock units and common stock warrant agreements with third parties. The disclosure of common shares and per common share data in the accompanying consolidated financial statements and related notes reflect the reverse stock split for all periods presented.

Use of estimates

The preparation of the unaudited interim 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 financial statements and reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Due to the uncertainty of factors surrounding the estimates or judgments used in the preparation of the unaudited interim consolidated financial statements, actual results may materially vary from these estimates. Estimates and assumptions are periodically reviewed and the effects of revisions are reflected in the unaudited interim consolidated financial statements in the period they are determined to be necessary.

Net loss per share

Basic and diluted net loss per common share is determined by dividing net loss applicable to common stockholders by the weighted-average common shares outstanding during the period.

For purposes of calculating diluted loss per common share, the denominator includes both the weighted average common shares outstanding and the number of common stock equivalents if the inclusion of such common stock equivalents would be dilutive. Dilutive common stock equivalents potentially include warrants, stock options and non-vested restricted stock unit ("RSU") awards using the treasury stock method. The diluted loss per common share calculation is further affected by an add-back of change in fair value of warrant liability to the numerator under the assumption that the change in fair value of warrant liability would not have been incurred if the warrants had been converted into common stock.

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

	<u>Three months ended March 31,</u>		<u>Six months ended March 31,</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Net loss attributable to common stockholders	\$ (11,289,962)	\$ (8,558,238)	\$ (21,182,314)	\$ (26,284,559)
Common stock outstanding (weighted average)	11,529,033	3,216,682	10,677,020	3,170,530
Basic and diluted net loss per share	<u>\$ (0.98)</u>	<u>\$ (2.66)</u>	<u>\$ (1.98)</u>	<u>\$ (8.29)</u>

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The following potentially dilutive securities (in common stock equivalents) have been excluded from the computation of diluted weighted-average shares outstanding as of March 31, 2019 and 2018, as they would be antidilutive:

	As of March 31,	
	2019	2018
Series A convertible preferred stock	-	4,933,221
Series A-1 convertible preferred stock	1,195,295	-
Series B convertible preferred stock	-	264,084
Convertible senior secured notes	957,482	-
Convertible unsecured notes	147,347	-
Performance-based stock units	16,131	20,491
Restricted stock units	7,156	12,221
Stock options	541,746	-
Common stock warrants	5,660,949	3,514,563

Recently issued and adopted accounting pronouncements

On October 1, 2018, the Company adopted ASU No. 2014-09, *Revenue from Contracts with Customers* (“ASU 2014-09”) and changed its revenue recognition policies accordingly. The standard’s stated core principle is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. This guidance also requires an entity to disclose sufficient information to enable users of financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. Qualitative and quantitative information is required about:

- *Contracts with customers* - including revenue and impairments recognized, disaggregation of revenue and information about contract balances and performance obligations (including the transaction price allocated to the remaining performance obligations).
- *Significant judgments and changes in judgments* - determining the timing of satisfaction of performance obligations (over time or at a point in time), and determining the transaction price and amounts allocated to performance obligations.
- *Certain assets* - assets recognized from the costs to obtain or fulfill a contract.

The Company’s arrangements fall under ASC 808, *Collaborations* (“ASC 808”). ASC 808 does not address recognition or measurement matters but prescribes that entities look to other GAAP by analogy, namely ASU 2014-09. As such, the Company completed an analysis of existing contracts with the Company’s collaboration partners and assessed the differences in accounting for such contracts under ASU 2014-09 compared with current revenue accounting standards. The Company previously recognized substantive milestones in the period the milestones were achieved but ASU 2014-09 prescribes that those milestones are a form of variable consideration which the Company will recognize over the estimated performance period.

The Company adopted the new accounting standard utilizing the modified retrospective method, and, therefore, no adjustments were made to amounts in its prior period financial statements. The Company recorded the cumulative effect of adopting the standard as an adjustment to increase accumulated deficit by \$3.6 million. For the three and six months ended March 31, 2019, the Company would have recognized \$0.3 million and \$1.1 million, respectively, of collaboration revenues under revenue recognition guidance in effect during fiscal 2018 prior to the adoption of ASU 2014-09.

In February 2016, the FASB issued ASU No. 2016-02, *Leases* (“ASC 842”). The FASB issued subsequent amendments to the initial guidance in July 2018 with ASU 2018-10 and in August 2018 with ASU 2018-11. ASC 842 supersedes the current accounting for leases. The new standard requires lessees to record a right of use asset and a related liability for the rights and obligations associated with a lease, regardless of lease classification, and eliminates the required use of bright-line tests in current U.S. GAAP for determining lease classification. This ASU is effective for annual periods beginning after December 15, 2018 (i.e., calendar periods beginning on January 1, 2019), and interim periods thereafter. Earlier application is permitted for all entities, however the Company did not early adopt. The new standard must be adopted using either the modified retrospective approach, which requires application of the new guidance at the beginning of the earliest comparative period presented or the optional alternative approach, which requires application of the new guidance at the beginning of the standard’s effective date. The Company has arrangements currently classified as operating leases which will be recorded as a right of use asset and corresponding liability on the balance sheet and is currently evaluating the impact these changes will have on the consolidated financial statements.

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In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement* (“ASU 2018-13”), which removes and modifies some existing disclosure requirements and adds others. ASU 2018-13 modifies the disclosure requirements for fair value measurements and removes the requirement to disclose (1) the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy, (2) the policy for timing of transfers between levels, and (3) the valuation processes for Level 3 fair value measurements. ASU 2018-13 requires disclosure of changes in unrealized gains and losses for the period included in other comprehensive income (loss) for recurring Level 3 fair value measurements held at the end of the reporting period and the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements. The ASU is effective for all entities for fiscal years beginning after December 15, 2019, including interim periods therein. Early adoption is permitted for any eliminated or modified disclosures upon issuance of this ASU. The Company is currently evaluating the impact of the adoption of this standard.

4. Fair Value Measurements

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

- Level 1 - Quoted prices in active markets for identical assets or liabilities.
- Level 2 - Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The asset’s or liability’s fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

The following table presents the Company’s assets and liabilities that are measured at fair value on a recurring basis:

	March 31, 2019		
	(Level 1)	(Level 2)	(Level 3)
Liabilities			
Warrant liability	\$ -	\$ -	\$ 2,359,343
	September 30, 2018		
	(Level 1)	(Level 2)	(Level 3)
Liabilities			
Warrant liability	\$ -	\$ -	\$ 1,227,225

The table presented below is a summary of changes in the fair value of the Company’s Level 3 valuation for the warrant liability for the six months ended March 31, 2019:

Balance at October 1, 2018	\$1,227,225
Senior note warrants modification	1,466,710(i)
Change in fair value	(334,592)
Balance at March 31, 2019	\$2,359,343

- (i) In connection with the November 2018 BioLexis private placement (See Note 10), the Company reduced the exercise price of the warrants issued in connection with the senior secured notes (the “Senior Note Warrants”) from \$24.00 to \$12.00 and extended the expiration of the Senior Note Warrants by three years. Such Senior Note Warrants now expire eight years from their initial exercise date.

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The Senior Note Warrants issued in connection with the senior secured notes (see Note 6) are classified as liabilities on the accompanying consolidated balance sheet as the Senior Note Warrants include cash settlement features at the option of the holders under certain circumstances. The warrant liability is revalued each reporting period with the change in fair value recorded in the accompanying consolidated statements of operations until the warrants are exercised or expire. The fair value of the warrant liability is estimated using the Black-Scholes option pricing model using the following assumptions:

	March 31, 2019	September 30, 2018
Risk-free interest rate	2.27%	2.90%
Remaining contractual life of warrant	5.88 years	3.39 years
Expected volatility	87%	82%
Annual dividend yield	0%	0%
Fair value of common stock	\$ 7.40 per share	\$ 7.84 per share

5. Property and Equipment, Net

Property and equipment, net, consists of:

	March 31, 2019	September 30, 2018
Laboratory equipment	\$ 14,075,953	\$ 14,333,624
Leasehold improvements	10,118,564	10,095,100
Computer software and hardware	497,799	483,807
Land and building	3,000,000	3,000,000
Construction in progress	210,057	2,276,737
	<u>27,902,373</u>	<u>30,189,268</u>
Less: accumulated depreciation and amortization	<u>(13,300,657)</u>	<u>(11,699,292)</u>
	<u>\$ 14,601,716</u>	<u>\$ 18,489,976</u>

Depreciation and amortization expense was \$816,541 and \$706,264 for the three months ended March 31, 2019 and 2018, respectively, and \$1,639,618 and \$1,407,888 for the six months ended March 31, 2019 and 2018, respectively.

At March 31, 2019, \$8,002,538 and at September 30, 2018, \$7,953,856 represents laboratory equipment under capital leases and the Company's corporate office that is classified as a capital lease. The Company's corporate office lease matures in February 2028. The term of the equipment leases are between 12 and 36 months and qualify as capital leases. The equipment leases bear interest between 4.0% and 19.4% and the effective interest rate on the corporate office lease is 43.9%. At March 31, 2019 and September 30, 2018, \$1,999,766 and \$1,619,741, respectively, of accumulated amortization related to capital leases.

The Company wrote off certain construction in progress and laboratory equipment with a carrying amount of \$561,735 and \$2,911,138 during the three and six months ended March 31, 2019, respectively, due to the Company changing its operations to focus solely on developing and commercializing ONS-5010. The charge was recorded to research and development on the consolidated statements of operations. The Company determined that the carrying amount of these assets was not recoverable and was less than the fair value less the cost to sell.

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6. Accrued Expenses

Accrued expenses consists of:

	March 31, 2019	September 30, 2018
Compensation	\$ 1,926,251	\$ 2,231,122
Severance and related costs	135,432	396,138
Lease termination obligation	402,072	395,071
Research and development	1,155,042	1,065,169
Interest payable	1,093,384	1,991,044
Professional fees	332,085	313,585
Director fees	-	59,122
Other accrued expenses	143,035	7,220
	<u>\$ 5,187,301</u>	<u>\$ 6,458,471</u>

7. Senior Secured Notes

	March 31, 2019	September 30, 2018
Convertible senior secured notes	\$ 8,460,171	\$ 13,500,000
Unamortized debt discount	(842,752)	(320,551)
	<u>\$ 7,617,419</u>	<u>\$ 13,179,449</u>

In September 2017, the Company entered into a purchase and exchange agreement (the "Exchange Agreement") with two existing investors and holders of its senior secured notes (the "Exchanging Noteholders"), pursuant to which the Exchanging Noteholders exchanged \$1.5 million aggregate principal amount of senior secured notes for 1,500,000 shares of Series B convertible preferred stock ("Series B Convertible") and \$41,507 of accrued interest on such exchanged senior secured notes in October 2017. The Company recognized a loss on extinguishment of \$1,252,353 in connection with the exchange and represents the excess fair value of the Series B Convertible issued over the net carrying amount of the debt and accrued interest.

In November 2018, the Company reached an agreement with the holders of its \$13.5 million senior secured notes to extend the maturity of the senior secured notes until December 22, 2019, in exchange for making several payments of principal and interest through August 31, 2019, subject to meeting additional capital raising commitments which the Company met in April 2019 through the completed public offering with gross proceeds of \$28.4 million. In addition, the Company agreed to make the senior secured notes convertible into common stock at a price of \$8.9539 per share (120% of the price per share paid by BioLexis under the November 2018 purchase agreement) and reduced the exercise price of warrants to purchase 485,245 shares of common stock held by the senior secured noteholders from \$24.00 per share to \$12.00 per share. The increase in the fair value of the warrants of \$1.5 million due to the modification was recorded as additional debt discount. The Company repaid \$4.6 million of principal and \$1.3 million of accrued interest of such notes during the six months ended March 31, 2019. As of March 31, 2019, the senior secured notes remain classified as a current liability because they mature in less than 12 months.

During February and March 2019, senior secured notes with a carrying amount of \$400,575 and accrued interest of \$1,393 were converted into an aggregate of 50,394 shares of the Company's common stock.

Interest expense on the senior secured notes for the three months ended March 31, 2019 and 2018 was \$561,485 and \$484,746, respectively, and \$1,162,917 and \$989,331 for the six months ended March 31, 2019 and 2018, respectively.

8. Stockholder Notes

On March 7, 2019, the Company entered into a Forbearance and Exchange Agreement (the "Agreement") with Iliad Research and Trading, L.P., a Utah limited partnership (the "Lender"). Concurrently with the execution of this Agreement, the Lender purchased two stockholder notes issued by the Company previously in the original principal amount of \$1,000,000 with an aggregate outstanding balance as of March 7, 2019 of \$1,947,133, including accrued interest. The stockholder notes were accruing interest at the rate of 2.5% per month. The Lender agreed to refrain and forbear from bringing any action to collect under the stockholder notes until March 7, 2020 and to reduce the interest rates currently in effect to 12% per annum simple interest during such forbearance period. The Company also agreed to, at the Lender's election, repay or exchange the stockholder notes (or portions thereof) for shares of the Company's common stock at an exchange rate of \$13.44 per share. The Agreement was accounted for as an extinguishment of debt and the Company recorded a loss of \$183,554.

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9. Commitments

Leases

In August 2018, the Company entered into a lease termination agreement effective September 1, 2018, to terminate the lease for office and laboratory space in Cranbury, New Jersey. In consideration for the termination of the lease, the Company agreed to make payments to the landlord totaling up to \$5.8 million, which includes (i) \$287,615 upon execution of the termination agreement, (ii) \$50,000 per month for up to 30 months, commencing September 1, 2018, and (iii) a \$4.0 million payment, in any event, on or before February 1, 2021. The Company and landlord agreed that the \$174,250 security deposit will be used to pay the 7th, 8th, 9th and a portion of the 10th monthly payments. The Company may pay the final \$4.0 million payment at any time, whereupon the Company's obligation to make the remaining monthly payments terminates.

At March 31, 2019, the current portion of the lease termination obligation of \$402,072 is included in accrued expenses and \$3,207,046 is included in other liabilities on the consolidated balance sheets. A rollforward of the charges incurred to general and administrative expense for the six months ended March 31, 2019 is as follows:

	<u>Balance</u> <u>October 1, 2018</u>	<u>Expensed /</u> <u>Accrued Expense</u>	<u>Cash</u> <u>Payments</u>	<u>Balance</u> <u>March 31, 2019</u>
Lease termination payments	\$ 3,850,081	\$ 9,037	\$ (250,000)	\$ 3,609,118

10. Common Stock, Convertible Preferred Stock and Stockholders' Equity (Deficit)

Common stock

Pursuant to the November 5, 2018 BioLexis private placement, the Company closed the sale of this private placement for an aggregate of 2,680,390 shares of the Company's common stock for gross cash proceeds of \$20.0 million (\$19.8 million net of issuance costs) during the six months ended March 31, 2019.

During the six months ended March 31, 2019 and 2018, the Company issued 446 and 100,814 respectively, shares of common stock upon the vesting of RSUs.

Convertible preferred stock

In September 2017, the Company entered into a purchase agreement with BioLexis, pursuant to which BioLexis agreed to purchase, in a private placement (the "Initial Private Placement"), \$25.0 million of the Company's newly-created voting Series A Convertible Preferred Stock (the "Series A Convertible"), and warrants (the "BioLexis Warrants") to acquire 2,093,750 shares of common stock. In September 2017, the Company completed the initial sale of 32,628 shares of Series A Convertible to BioLexis for \$3,262,800 in cash. In October 2017, the Company completed the sale of the remaining 217,372 shares of Series A Convertible and the BioLexis Warrants to BioLexis in the Initial Private Placement, for \$21,737,200 in cash.

The Series A Convertible was initially convertible into 4,724,493 shares of the Company's common stock, representing an effective conversion rate of \$5.28 per share, which represented a discount to the market value of the Company's common stock as of September 7, 2017 and October 31, 2017 (on which dates, the closing price of the Company's common stock was \$7.20 and \$10.08 per share, respectively). In connection with the second closing of the Series A Convertible in October 2017, the Company issued the BioLexis Warrants, which have a term of 8-years and an initial exercise price of \$7.20 per share. The proceeds from the second closing of the Series A Convertible were allocated among the Series A Convertible and the BioLexis Warrants based on their relative fair values. As a result of the discount to the market value and the allocation of a portion of the proceeds to the BioLexis Warrants, the Company recognized a beneficial conversion charge of \$15,355,019, which represents the in-the-money value of the conversion rate as of the date of sale.

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The Series A Convertible accrued dividends at a rate of 10% per annum, compounded quarterly, payable quarterly at the Company's option in cash or in kind in additional shares of Series A Convertible, although the initial dividends payable on the shares of Series A Convertible issued in September 2017, while accruing from issuance, was payable in December 2017. The Series A Convertible was also entitled to dividends on an as-if-converted basis in the same form as any dividends actually paid on shares of common stock or other securities. The initial conversion rate was subject to appropriate adjustment in the event of a stock split, stock dividend, combination, reclassification or other recapitalization affecting the common stock.

In June 2018, BioLexis converted 208,836 shares of Series A Convertible into 3,946,577 shares of common stock, and in July 2018 exchanged its remaining shares of Series A Convertible for newly created Series A-1 (as defined below). As of such exchange, there were no longer any shares of Series A Convertible issued and outstanding.

Series A-1 Convertible Preferred Stock

A total of 200,000 shares of Series A-1 Convertible Preferred Stock (the "Series A-1") have been authorized for issuance under the Certificate of Designation of Series A-1 Convertible Preferred Stock of the Company. The shares of Series A-1 have a stated value of \$100.00 per share, are initially convertible into 1,109,972 shares of the Common Stock and rank senior to all junior securities (as defined in the Certificate of Designation).

The Series A-1 accrue dividends at a rate of 10% per annum, compounded quarterly, payable quarterly at the Company's option in cash or in kind in additional shares of Series A-1. The Series A-1 is also entitled to dividends on an as-if-converted basis in the same form as any dividends actually paid on shares of Common Stock or other securities. The initial conversion rate is subject to appropriate adjustment in the event of a stock split, stock dividend, combination, reclassification or other recapitalization affecting the Common Stock. The holders of the Series A-1 have the right to vote on matters submitted to a vote of the Company's stockholders on an as-converted basis, voting with the Company's other stockholders as a single class. In addition, without the prior written consent of a majority of the outstanding shares of Series A-1, the Company may not take certain actions, including amending its certificate of incorporation or bylaws, or issuing securities ranking pari passu or senior to the Series A-1.

During the six months ended March 31, 2019, the Company issued 3,047 shares of Series A-1 Convertible to settle the related dividends that are due on a quarterly basis.

The terms of the Series A-1 distinguish between certain liquidation events (such as a voluntary or involuntary liquidation, dissolution or winding up of the Company) and "deemed" liquidation events (such as a sale of all or substantially all of the Company's assets, various merger and reorganization transactions, being delisted from Nasdaq, and the occurrence of an event of default under the terms of the senior secured notes), in each case as defined in the Certificate of Designation. In the event of a liquidation (as defined in the Certificate of Designation), the liquidation preference payable equals the sum of (A) 550% of the Series A-1 stated value per share plus (B) an amount equal to (x) 550% of any accrued, but unpaid, preferred dividends (as defined in the Certificate of Designation) plus (y) any unpaid participating dividends (as defined in the Certificate of Designation). In the case of a deemed liquidation event (as defined in the Certificate of Designation), the multiplier is increased to 600%.

The Series A-1 is convertible at any time at the option of the holder based on the then applicable conversion rate. If conversion is in connection with a liquidation, the holder is entitled to receive 550% of the number of shares of common stock issuable based upon the then applicable conversion rate. In the event of a deemed liquidation event, the multiplier is increased to 600%.

Additionally, the holder may irrevocably require the Company to redeem the Series A-1 in the event of a deemed liquidation event for the sum of (A) 600% of the Series A-1 stated value per share plus (B) an amount equal to (x) 600% of any accrued, but unpaid, preferred dividends plus (y) any unpaid participating dividends, although such redemption may not be made without the consent of the senior secured noteholders if such notes are outstanding at the time of any such redemption.

The shares of Series A-1 have not been registered under the Securities Act of 1933, as amended (the "Securities Act"), and may not be offered or sold in the United States without registration or an applicable exemption from the registration requirements of the Securities Act. The exchange of the Series A-1 for the shares of Series A held by the Investor was made in reliance on Sections 3(a)(9) and 4(a)(2) under the Securities Act, without general solicitation or advertising.

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Series B Convertible Preferred Stock

Concurrent with completing the sale of Series A Convertible in October 2017, the Noteholders exchanged \$1,500,000 in aggregate principal borrowings and \$41,507 in accrued interest for 1,500,000 shares of Series B Convertible. The Series B Convertible were convertible into 264,084 shares of common stock. The exchange was accounted for as an extinguishment of debt, See Note 7. During May and June 2018, the Noteholders converted all 1,500,000 shares of Series B Convertible into 264,084 shares of common stock. Accordingly, there are no longer any shares of Series B Convertible issued and outstanding.

Common stock warrants

As of March 31, 2019, shares of common stock issuable upon the exercise of outstanding warrants were as follows:

Shares of common stock issuable upon exercise of warrants	Exercise Price Per Share	Expiration Date
416,666	\$ 12.00	February 18, 2022 (i)
101,186	\$ 0.08	November 11, 2019
277,122	\$ 12.00	December 22, 2024 (ii)
145,686	\$ 12.00	April 13, 2025 (ii)
62,437	\$ 12.00	May 31, 2025 (ii)
2,093,750	\$ 7.20	October 31, 2025
1,282,051	\$ 7.80	May 10, 2026
1,282,051	\$ 7.80	June 8, 2026
<u>5,660,949</u>		

- (i) In January 2019, the Company reduced the exercise price of these warrants from \$52.80 to \$12.00 and further extended the exercise period from February 18, 2019 to February 18, 2022.
- (ii) In November 2018, the Company reduced the exercise price of the warrants issued in connection with its senior secured notes from \$24.00 to \$12.00 and extended the expiration of the Senior Note Warrants by three years.

During the six months ended March 31, 2019, warrants to purchase 909 shares of common stock with an exercise price of \$0.08 were exercised.

11. Stock-Based Compensation

2011 Equity Incentive Plan

The Company's 2011 Equity Compensation Plan (the "2011 Plan") provided for the Company to sell or issue restricted common stock, RSUs, performance-based awards ("PSUs"), cash-based awards or to grant stock options for the purchase of common stock to officers, employees, consultants and directors of the Company. The 2011 Plan was administered by the board of directors or, at the discretion of the board of directors, by a committee of the board. The number of shares of common stock reserved for issuance under the 2011 Plan is 106,490. As of March 31, 2019, PSUs representing 16,131 shares of the Company's common stock were outstanding under the 2011 Plan. In light of the December 2015 adoption of the 2015 Equity Incentive Plan, (the "2015 Plan") no future awards under the 2011 Plan will be granted.

2015 Equity Incentive Plan

In December 2015, the Company adopted the 2015 Plan. The 2015 Plan provides for the grant of stock options, stock appreciation rights, restricted stock awards, RSU awards, performance stock awards and other forms of equity compensation to Company employees, directors and consultants. The aggregate number of shares of common stock authorized for issuance pursuant to the Company's 2015 Plan is 1,369,596. As of March 31, 2019, 654,338 shares remained available for grant under the 2015 Plan.

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Stock options and RSUs are granted under the Company's 2015 Plan and generally vest over a period of two to four years from the date of grant and, in the case of stock options, have a term of 10 years. The Company recognizes the grant date fair value of each option and share of RSU over its vesting period.

The Company recorded stock-based compensation expense in the following expense categories of its statements of operations for the three and six months ended March 31, 2019 and 2018:

	<u>Three Months Ended March 31,</u>		<u>Six Months Ended March 31,</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Research and development	\$ 120,763	\$ (403,034)	\$ 211,972	\$ (84,793)
General and administrative	146,979	102,823	928,059	1,674,402
	<u>\$ 267,742</u>	<u>\$ (300,211)</u>	<u>\$ 1,140,031</u>	<u>\$ 1,589,609</u>

During the six months ended March 31, 2019, the Company awarded stock options with a fair value of \$49,121 as settlement for directors fees accrued as of September 30, 2018.

Stock options

As of March 31, 2019, options to purchase common stock of the Company outstanding under the 2015 Plan were as follows:

	<u>Number of Shares</u>	<u>Weighted Average Exercise Price</u>	<u>Weighted Average Remaining Contractual Term (Years)</u>
Balance at October 1, 2018	182,120	\$ 7.22	
Granted	424,498	8.56	
Expired	(16,250)	7.59	
Forfeited	(48,622)	7.25	
Balance at March 31, 2019	<u>541,746</u>	8.26	9.6
Vested and exercisable	<u>131,789</u>	7.22	9.5
Vested and expected to vest at March 31, 2019	<u>541,746</u>	\$ 8.26	9.6

As of March 31, 2019, the aggregate intrinsic value of options outstanding was \$102,984. The aggregate intrinsic value represents the total amount by which the fair value of the common stock subject to options exceeds the exercise price of the related options.

The weighted average grant date fair value of the options awarded to employees for the six months ended March 31, 2019 and 2018 was \$6.36 and \$5.84 per option, respectively. The fair value of the options was estimated on the date of grant using a Black-Scholes option pricing model with the following weighted-average assumptions:

	<u>Six Months Ended March 31,</u>	
	<u>2019</u>	<u>2018</u>
Risk-free interest rate	2.79%	2.25%
Expected life (years)	5.87	5.93
Expected volatility	88.8%	64.0%
Expected dividend yield	-	-

As of March 31, 2019, there was \$2,332,260 of unrecognized compensation expense that is expected to be recognized over a weighted-average period of 3.6 years.

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Performance-based stock units

The Company has issued PSUs, which generally have a ten year life from the date of grant. Upon exercise, the PSU holder receives common stock or cash at the Company's discretion.

The following table summarizes the activity related to PSUs during the six months ended March 31, 2019:

	Number of PSUs	Base Price Per PSU	Weighted Average Remaining Contractual Term (Years)
Balance at October 1, 2018	16,131	\$ 49.99	
Forfeitures	-	-	
Balance at March 31, 2019	<u>16,131</u>	49.99	5.3
Vested and exercisable at March 31, 2019	<u>16,113</u>	49.86	5.3
Vested and expected to vest at March 31, 2019	<u><u>16,131</u></u>	\$ 49.99	5.3

Restricted stock units

The following table summarizes the activity related to RSUs during the six months ended March 31, 2019:

	Number of RSUs	Weighted Average Grant Date Fair Value
Balance at October 1, 2018	7,638	\$ 153.88
Vested and settled	(446)	188.36
Forfeitures	(36)	96.00
Balance at March 31, 2019	<u><u>7,156</u></u>	\$ 152.03

As of March 31, 2019, there was \$232,259 of unamortized expense that will be recognized over a weighted-average period of 0.57 years.

12. Related-Party Transactions

MTTR — Strategic Partnership Agreement (ONS-5010)

In November 2018, the Board of Directors of the Company appointed Mr. Terry Dagnon as Chief Operating Officer, and Mr. Jeff Evanson as Chief Commercial Officer. Both Mr. Dagnon and Mr. Evanson are providing services to the Company pursuant to the February 2018 strategic partnership agreement with MTTR, LLC ("MTTR"). Mr. Dagnon has a 16.66% ownership interest in MTTR. The Company will not be paying Mr. Dagnon or Mr. Evanson any direct compensation as consultants or as employees. Both Mr. Dagnon and Mr. Evanson are compensated directly by MTTR for services provided to the Company as the Company's Chief Operating Officer and Chief Commercial Officer, respectively, pursuant to the ONS-5010 Agreement. Mr. Dagnon and Mr. Evanson have also agreed to provide consulting services to an affiliate of BioLexis pursuant to a separate arrangement.

In February 2018, the Company entered into a strategic partnership agreement with MTTR to advise on regulatory, clinical and commercial strategy and assist in obtaining approval of ONS-5010, the Company's bevacizumab therapeutic product candidate for ophthalmic indications. MTTR earned an aggregate of \$290,431 and \$580,911 during the three and six months ended March 31, 2019, respectively, which includes monthly consulting fees and expense reimbursement.

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

You should read this section in conjunction with our unaudited interim consolidated financial statements and related notes included in Part I. Item 1 of this report and our audited consolidated financial statements and related notes thereto and management’s discussion and analysis of financial condition and results of operations for the years ended September 30, 2018 and 2017 included in our Annual Report on Form 10-K for the year ended September 30, 2018, filed with the Securities and Exchange Commission, or SEC, on December 18, 2018.

Forward-Looking Statements

This discussion contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Forward-looking statements are identified by words such as “believe,” “may,” “could,” “will,” “estimate,” “continue,” “anticipate,” “intend,” “seek,” “plan,” “expect,” “should,” “would,” “potentially” or the negative of these terms or similar expressions in this report. You should read these statements carefully because they discuss future expectations, contain projections of future results of operations or financial condition, or state other “forward-looking” information. These statements relate to our future plans, objectives, expectations, intentions and financial performance and the assumptions that underlie these statements. These forward-looking statements are subject to certain risks and uncertainties that could cause a difference include, but are not limited to, those discussed under the caption “Risk Factors” in our Annual Report on Form 10-K for the year ended September 30, 2018, filed with the SEC on December 18, 2018, and elsewhere in this report. See “Special Note Regarding Forward-Looking Statements.” Forward-looking statements are based on our management’s current beliefs and assumptions and based on information currently available to our management. These statements, like all statements in this report, speak only as of their date, and we undertake no obligation to update or revise these statements in light of future developments.

Overview

We are a late clinical-stage biopharmaceutical company focused on developing and commercializing ONS-5010, a complex, technically challenging and commercially attractive monoclonal antibody, or mAb, for various ophthalmic indications. Our goal is to launch ONS-5010 as the first, and only, approved bevacizumab in the United States, Europe, Japan and other markets for the treatment of wet age related macular degeneration, or wet AMD, diabetic macular edema, or DME, and branch retinal vein occlusion, or BRVO.

ONS-5010 is an innovative mAb therapeutic product candidate that was reviewed at a successful end of Phase 2 meeting with the FDA conducted in 2018. Our investigational new drug, or IND, application was filed with, and accepted by, the U.S. Food and Drug Administration, or FDA, in the first quarter of calendar 2019. We are currently enrolling patients in a Phase 3 clinical trial in Australia (ONS-5010-001) designed to serve as the first of two adequate and well controlled studies evaluating ONS-5010 against ranibizumab (Lucentis) for wet AMD. Enrollment in ONS-5010-001 is nearly complete with 51 of the planned 60 patients enrolled to date. The second of the two Phase 3 studies (ONS-5010-002) has been initiated and is expected to begin enrolling wet AMD patients in the United States, Australia and New Zealand by the end of June 2019. The ONS-5010-002 study is now expected to enroll a total of at least 220 patients. The endpoint for both studies is a mean increase in baseline visual acuity of at least 5 letters at 11 months for ONS-5010 dosed on a monthly basis compared to Lucentis dosed using the approved alternative dosing regimen of 3 monthly doses followed by quarterly dosing.

Currently, the cancer drug Avastin (bevacizumab) is used off-label for the treatment of wet AMD and other retina diseases such as DME and BRVO even though Avastin has not been approved by regulatory authorities for use in these diseases. If the ONS-5010 clinical program is successful, it will support our plans to submit for regulatory approval in multiple markets in 2020 including the United States, Europe and Japan. Because there are no approved bevacizumab products for the treatment of retinal diseases in such major markets, we are developing ONS-5010 as an innovative therapy and not using the biosimilar drug development pathway that would be normally be required if Avastin were an approved drug for the targeted diseases. If approved, we believe ONS-5010 has potential to mitigate risks associated with off-label use of Avastin or other drugs. Off label use of Avastin is currently estimated to account for at least 50% of all wet AMD prescriptions in the United States.

Through March 31, 2019, we have funded substantially all of our operations with \$215.3 million in net proceeds from the sale and issuance of our equity and debt securities. We have also received \$29.0 million pursuant to our collaboration and licensing agreements. On November 5, 2018, we entered into a purchase agreement with BioLexis providing for the private placement of \$20.0 million of shares of our common stock at \$7.4616 per share. We closed this private placement in four monthly tranches for an aggregate of 2,680,390 shares of our common stock for aggregate cash proceeds of \$20.0 million in November and December 2018, January and February 2019. We intend to use the net proceeds from the private placement primarily for clinical trials for our lead product candidate, ONS-5010, and for working capital and general corporate purposes, including the agreed repayments on the senior secured notes discussed below.

Also on November 5, 2018, we reached an agreement with the holders of our senior secured notes to extend the maturity of the \$13.5 million of senior secured notes up to December 22, 2019, among other items, in exchange for making several payments of principal and interest through August 31, 2019, subject to meeting additional capital raising commitments (which capital raising condition we met in April 2019 through the completed underwritten public offering of our common stock and accompanying warrants). We paid \$5.9 million of principal and interest through March 31, 2019. In addition, we agreed to make the senior secured notes convertible into common stock at a price of \$8.9539 per share (120% of the price per share paid by BioLexis under the November 2018 purchase agreement) and reduced the exercise price of the warrants held by such holders to \$12.00 and extended the expiration of these warrants by three years. In January 2019, we reduced the exercise price of our outstanding Series A warrants (originally issued in connection with our initial public offering, or IPO) from \$52.80 to \$12.00 and further extended the expiration date of these warrants from February 18, 2019 to February 18, 2022.

On November 30, 2018, we received approval from the New Jersey Economic Development Authority's Technology Business Tax Certificate Transfer Program to sell approximately \$3.7 million of our unused New Jersey net operating losses, or NOLs, and research and development tax credits, or R&D credits. We expect to receive approximately \$3.4 million of proceeds from the sale of the New Jersey NOLs and R&D credits, of which \$0.8 million was received in April 2019.

On April 12, 2019, we completed an underwritten public offering of 10,340,000 shares of our common stock, 15-month warrants to purchase up to an aggregate of 10,340,000 shares of our common stock and five-year warrants to purchase up to an aggregate of 10,340,000 shares of our common stock at a combined public offering price of \$2.75 per share and accompanying warrants. The shares of common stock and the warrants were immediately separable and were issued separately. The warrants were exercisable immediately at an exercise price of \$2.90 per share. We received approximately \$26.2 million in net proceeds from the public offering after payment of fees, expenses and underwriting discounts and commissions.

We have incurred recurring losses and negative cash flows from operations since inception and had an accumulated deficit at March 31, 2019 of \$239.9 million. As of March 31, 2019, we had substantial indebtedness that included \$8.5 million of senior secured notes that may become due in fiscal 2019, \$3.6 million unsecured notes, that are due on demand, and \$1.0 million of unsecured notes that are due but are subject to a forbearance agreement through March 7, 2020. We will need to raise substantial additional capital to fund our planned future operations, commence clinical trials, receive approval for and commercialize ONS-5010, or to develop other product candidates. We plan to finance our future operations with a combination of proceeds from potential licensing and/or marketing arrangements with pharmaceutical companies, the issuance of equity securities, and the issuance of additional debt, potential collaborations and revenues from potential future product sales, if any. There are no assurances that we will be successful in obtaining an adequate level of financing for the development and commercialization of ONS-5010 or any other current or future product candidates. If we are unable to secure adequate additional funding, our business, operating results, financial condition and cash flows may be materially and adversely affected. These matters raise substantial doubt about our ability to continue as a going concern. Our consolidated financial statements do not include any adjustments that might be necessary if we are unable to continue as a going concern.

Our current cash resources of \$0.2 million as of March 31, 2019, the \$26.2 of net proceeds from our April 2019 public offering and the anticipated proceeds from the sale of our remaining New Jersey NOLs and R&D credits, are expected to fund our operations into December 2019, excluding any unscheduled repayment of debt. To provide additional working capital, we continue to engage in active discussions with global and regional pharmaceutical companies for licensing and/or co-development rights to ONS-5010. If we are not successful in raising additional capital or entering into one or more licensing and/or co-development rights agreements, we may be required to, among other things, modify our clinical trial plans for ONS-5010 in additional indications, make reductions in our workforce, discontinue our development programs, liquidate all or a portion of our assets, and/or seek protection under the provisions of the U.S. Bankruptcy Code.

We do not have any products approved for sale and we have only generated revenue from our collaboration agreements. We have incurred operating losses and negative operating cash flows since inception and there is no assurance that we will ever achieve profitable operations, and if achieved, that profitable operations will be sustained. Our net loss for the six months ended March 31, 2019 was \$20.0 million. In addition, development activities, clinical and preclinical testing and commercialization of our product candidates will require significant additional financing.

Collaboration and License Agreements

From time to time, we enter into collaboration and license agreements for the research and development, manufacture and/or commercialization of our products and/or product candidates. These agreements generally provide for non-refundable upfront license fees, development and commercial performance milestone payments, cost sharing, royalty payments and/or profit sharing.

MTTR, LLC — ONS 5010

In February 2018, we entered into a strategic partnership agreement with MTTR, LLC, or MTTR, to advise on regulatory, clinical and commercial strategy and assist in obtaining approval of ONS-5010, our bevacizumab therapeutic product candidate for ophthalmic indications. Under the terms of the agreement, we paid MTTR a \$58,333 monthly consulting fee through December 2018. Beginning January 2019, the monthly fee increased to \$105,208 per month, and then, after launch of ONS-5010 in the United States, will increase to \$170,833 per month (the amount of which is reduced by 50% in the event net sales of ONS-5010 are below a certain threshold million per year). We also agreed to pay MTTR a tiered percentage of the net profits of ONS-5010 ranging in the low- to mid-teens, with the ability to credit monthly fees paid to MTTR. In March 2018, we amended the MTTR agreement and agreed to pay a one-time fee of \$268,553 to MTTR by September 2020 if certain regulatory milestones are achieved earlier than anticipated. MTTR earned an aggregate \$290,431 and \$580,911 during the three and six months ended March 31, 2019, respectively, which includes monthly consulting fees and expense reimbursement.

Selexis SA

In October 2011, we entered into a research license agreement with Selexis SA, or Selexis, whereby we acquired a non-exclusive license to conduct research internally or in collaboration with third parties to develop recombinant proteins from cell lines created in mammalian cells using the Selexis expression technology, or the Selexis Technology. The original research license had a three-year term, but on October 9, 2014, it was extended for an additional three-year term through October 9, 2017, and then a limited scope license was extended for one more year through October 9, 2018. We may sublicense our rights with Selexis' prior written consent but are prohibited from making commercial use of the Selexis Technology or the resultant recombinant proteins comprising our product candidates in humans, or from filing an investigational new drug, absent a commercial license agreement with Selexis covering the particular product candidate developed under the research license. In connection with the entry into the research license, we paid Selexis an initial fee and agreed to make additional annual license maintenance payments of the same amount for each of the three years that the research license agreement term was extended and for a pro rata amount for the most current one-year license extension that expired on October 9, 2018. As such, we are no longer using the Selexis Technology in our research.

Selexis also granted us a non-transferrable option to obtain a perpetual, non-exclusive, worldwide commercial license under the Selexis Technology to manufacture, or have manufactured, a recombinant protein produced by a cell line developed using the Selexis Technology for clinical testing and commercial sale. We exercised this option in April 2013 and entered into three commercial license agreements with Selexis for our ONS-3010, ONS-1045 (which covers ONS-5010) and ONS-1050 product candidates. We paid an upfront licensing fee to Selexis for each commercial license and also agreed to pay a fixed milestone payment for each licensed product. In addition, we are required to pay a single-digit royalty on a final product-by-final product and country-by-country basis, based on worldwide net sales of such final products by us or any of our affiliates or sub-licensees during the royalty term. At any time during the term, we have the right to terminate our royalty payment obligation by providing written notice to Selexis and paying Selexis a royalty termination fee.

As of March 31, 2019, we have paid Selexis an aggregate of approximately \$0.4 million under the commercial license agreements.

IPCA Laboratories Limited - Humira (ONS-3010), Avastin (ONS-1045) and Herceptin (ONS-1050)

In August 2013, we entered into a strategic license agreement with IPCA Laboratories Limited, or IPCA, under which we granted IPCA and its affiliates a license for the research, development, manufacture, use or sale of ONS-3010 and, by amendment in May 2014, ONS-1045. The license is exclusive with respect to India, Sri Lanka and Myanmar, and non-exclusive with respect to Nepal and Bhutan. Under the terms of the August 2013 agreement, we received an upfront payment from IPCA, and are eligible to earn additional regulatory milestone payments for each of ONS-3010 and ONS-1045. In addition, we are eligible to receive royalties at a low teens percentage rate of annual net sales of products by IPCA and its affiliates in the agreed territory.

In January 2014, we entered into an agreement with IPCA to assist IPCA in establishing its research, development and manufacturing capabilities for mAbs and biologics, including, in part, through collaborative development, manufacture and commercialization of ONS-1050 (our Herceptin biosimilar), in the agreed territory (as specified below). The agreed territory for ONS-1050 includes the Republics of India, Sri Lanka, Myanmar, Nepal and Bhutan, while the agreed territory for any product candidates developed independent of our involvement is global without geographical restriction. We also agreed to assist IPCA with its research and development program. Under the terms of the January 2014 agreement, we are eligible to receive development payments and commercialization fees. In addition, we are eligible to receive royalties from IPCA at a mid-single digit rate on annual net sales of ONS-1050 commercialized by IPCA and its affiliates in the agreed territory.

As of March 31, 2019, we have received an aggregate of \$5.0 million of payments from IPCA under our various agreements.

Liomont - Humira (ONS-3010) and Avastin (ONS-1045)

In June 2014, we entered into a strategic license agreement with Laboratories Liomont, S.A. de C.V., or Liomont, under which we granted Liomont and its affiliates an exclusive, sublicenseable license in Mexico for the research, development, manufacture, use or sale of the ONS-3010 and ONS-1045 biosimilar product candidates in Mexico. Under the terms of the agreement, we received an upfront payment from Liomont, and we are eligible to earn milestone payments for each of ONS-3010 and ONS-1045. In addition, we are eligible to receive tiered royalties at upper single-digit to low teens percentage rates of annual net sales of products by Liomont and its affiliates in Mexico. As of March 31, 2019, we have received an aggregate of \$3.0 million of upfront and milestone payments from Liomont.

Huahai - Humira (ONS-3010) and Avastin (ONS-1045)

In May 2013, we entered into a series of agreements with Zhejiang Huahai Pharmaceutical Co., Ltd., or Huahai, to form an alliance for the purpose of developing and obtaining regulatory approval for, and commercial launch and marketing of licensed products in an agreed territory, as described below. The agreements include a strategic alliance agreement, which sets out the governance framework for the relationship, along with a joint participation agreement regarding joint development and commercialization of ONS-3010, and a co-development and license agreement for each of ONS-3010 and ONS-1045. As of September 30, 2018, we have received an aggregate of \$16.0 million of upfront and milestone payments from Huahai.

As contemplated by the strategic alliance agreement, we entered into a joint participation agreement with Huahai where we agreed to co-fund the development and share the value ownership interest of ONS-3010 in the United States, Canada, European Union, Japan, Australia and New Zealand. Under the agreement as amended, we are responsible for completing a defined “Phase-3 Ready Package” at our expense, for which the portion of the funds received from Huahai to date under this joint participation agreement was used.

In the event Huahai funds its proportionate share of development costs incurred after completion of the “Phase-3 Ready Packages,” Huahai would be entitled to retain its 51% value ownership, with us entitled to retain our 49% value ownership, of ONS-3010 in the agreed territories. Similarly, revenues from commercialization of ONS-3010 in the agreed countries (including major markets such as the United States and the European Union, among others), would also be shared based on such proportional ownership interests. In the event that Huahai does not fund its proportionate share of such development costs, the joint participation agreement provides for a proportionate adjustment to our respective value ownership interests based on our respective investments in such development costs, which would increase our value ownership interest in ONS-3010. Under the joint participation agreement, we could also be required to form a joint venture to further develop and commercialize ONS-3010 with Huahai in the agreed countries, if so requested by Huahai.

In conjunction with the strategic alliance agreement, we also entered into a co-development and license agreement with Huahai, under which we granted Huahai and its affiliates an exclusive license, in the territory (as specified below) for the research, development, manufacture, use or sale of ONS-3010 or ONS-1045 in China, including, the People’s Republic of China, Hong Kong, Macau and Taiwan. We will each bear our respective costs under the development plans. Huahai agreed to carry out all clinical, manufacturing and regulatory requirements necessary for approval of the products in the agreed territory. Under the terms of the agreement, we received an upfront payment from Huahai for ONS-3010, and have received regulatory milestone payments for each of ONS-3010 and ONS-1045.

BioLexis — Humira (ONS-3010) and Avastin (ONS-1045)

On September 7, 2017, in connection with the entry into the BioLexis purchase agreement for shares of our Series A convertible preferred stock and warrants, we also entered into a joint development and license agreement providing for the license of rights to ONS-3010 and ONS-1045 in emerging markets, excluding China, India and Mexico, which superseded and replaced a previous strategic licensing agreement dated July 25, 2017. As of March 31, 2019, we have received an aggregate of \$5.0 million of payments from BioLexis under our joint development and license agreement.

Components of our Results of Operations

Collaboration Revenue

To date, we have derived revenue only from activities pursuant to our collaboration and licensing agreements. We have not generated any revenue from commercial product sales. For the foreseeable future, we expect all of our revenue, if any, will be generated from our collaboration and licensing agreements. If any of our product candidates currently under development are approved for commercial sale, we may generate revenue from product sales, or alternatively, we may choose to select a collaborator to commercialize our product candidates.

On October 1, 2018, we adopted Accounting Standards Update, or ASU, No. 2014-09, *Revenue from Contracts with Customers*, or ASU 2014-09, and changed our revenue recognition policies accordingly. The standard’s stated core principle is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. Our arrangements fall under Accounting Standards Codification, or ASC, 808, *Collaborations*, or ASC 808. ASC 808 does not address recognition or measurement matters but prescribes that entities look to other GAAP by analogy, namely ASU 2014-09. As such, we completed an analysis of existing contracts with our collaboration partners and assessed the differences in accounting for such contracts under ASU 2014-09 compared with current revenue accounting standards. We previously recognized substantive milestones in the period the milestones were achieved, but ASU 2014-09 prescribes that those milestones are a form of variable consideration and should be recognized when the performance obligation is satisfied, which results in such amounts being recognized over the estimated performance period. We adopted the new accounting standard utilizing the modified retrospective method, and recorded the cumulative effect of adopting the standard as an adjustment to increase accumulated deficit by \$3.6 million.

Research and Development Expenses

Research and development expense consists of expenses incurred in connection with the discovery and development of our product candidates. We expense research and development costs as incurred. These expenses include:

- expenses incurred under agreements with contract research organizations, or CROs, as well as investigative sites and consultants that conduct our preclinical studies and clinical trials;
- manufacturing scale-up expenses and the cost of acquiring and manufacturing preclinical and clinical trial materials and commercial materials, including manufacturing validation batches;
- outsourced professional scientific development services;
- employee-related expenses, which include salaries, benefits and stock-based compensation;
- payments made under a third-party assignment agreement, under which we acquired intellectual property;
- expenses relating to regulatory activities, including filing fees paid to regulatory agencies;
- laboratory materials and supplies used to support our research activities; and
- allocated expenses, utilities and other facility-related costs.

The successful development of ONS-5010 and any of our other product candidates is highly uncertain. At this time, we cannot reasonably estimate or know the nature, timing and costs of the efforts that will be necessary to complete the remainder of the development of, or when, if ever, material net cash inflows may commence from ONS-5010 or any of our other product candidates. This uncertainty is due to the numerous risks and uncertainties associated with the duration and cost of clinical trials, which vary significantly over the life of a project as a result of many factors, including:

- the number of clinical sites included in the trials;
- the length of time required to enroll suitable patients;
- the number of patients that ultimately participate in the trials;
- the number of doses patients receive;
- the duration of patient follow-up;
- the results of our clinical trials;
- the establishment of commercial manufacturing capabilities;
- the receipt of marketing approvals; and
- the commercialization of product candidates.

Our expenditures are subject to additional uncertainties, including the terms and timing of regulatory approvals. We may never succeed in achieving regulatory approval for any of ONS-5010 or our other product candidates. We may obtain unexpected results from our clinical trials. We may elect to discontinue, delay or modify clinical trials of some product candidates or focus on others. A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. For example, if the FDA or other regulatory authorities were to require us to conduct clinical trials beyond those that we currently anticipate, or if we experience significant delays in enrollment in any of our clinical trials, we could be required to expend significant additional financial resources and time on the completion of clinical development. Product commercialization will take several years and millions of dollars in development costs.

Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size, complexity and duration of later-stage clinical trials.

General and Administrative Expenses

General and administrative expenses consist principally of salaries and related costs for personnel in executive, administrative, finance and legal functions, including stock-based compensation, travel expenses and recruiting expenses. Other general and administrative expenses include facility related costs, patent filing and prosecution costs and professional fees for business development, legal, auditing and tax services and insurance costs.

We anticipate that our general and administrative expenses will increase if and when we believe a regulatory approval of a product candidate appears likely, and we anticipate an increase in payroll and expense as a result of our preparation for commercial operations, particularly as it relates to the sales and marketing of our product.

Interest Expense

Interest expense consists of cash paid and non-cash interest expense related to our senior secured notes, former bank loans, and notes with current and former stockholders, equipment loans, capital lease and other finance obligations.

Loss on Extinguishment of Debt

We recorded a loss on extinguishment of debt of \$0.2 million during the three and six months ended March 31, 2019 in connection with a forbearance and exchange agreement in March 2019 pursuant to which a third party purchased two stockholder notes previously issued in an aggregate original principal amount of \$1.0 million with an aggregate outstanding balance of \$1.9 million, including accrued interest.

We recorded a loss on the extinguishment of debt of \$1.3 million during the six months ended March 31, 2018 related to the exchange of \$1.5 million aggregate principal amount of our senior secured notes for shares of our Series B Convertible Preferred Stock.

Change in Fair Value of Warrant Liability

Warrants to purchase our common stock that have been issued in conjunction with our senior secured notes are classified as liabilities and recorded at fair value. The warrants are subject to re-measurement at each balance sheet date and we recognize any change in fair value in our statements of operations.

Income Taxes

On November 30, 2018, we received approval from the New Jersey Economic Development Authority's Technology Business Tax Certificate Transfer Program to sell approximately \$3.7 million of our unused New Jersey NOLs and R&D credits. We expect to receive approximately \$3.4 million of proceeds from the sale of the New Jersey NOLs and R&D credits, of which approximately \$0.8 million was received in April 2019. Since inception, we have not recorded any U.S. federal or state income tax benefits (excluding the sale of New Jersey NOLs and R&D credits) for the net losses we have incurred in each year or on our earned R&D credits, due to our uncertainty of realizing a benefit from those items. As of September 30, 2018, we had federal and state NOL carryforwards of \$164.2 million and \$67.6 million, respectively that will begin to expire in 2030 and 2036, respectively. As of September 30, 2018, we had federal foreign tax credit carryforwards of \$2.4 million available to reduce future tax liabilities, which begin to expire starting in 2023. As of September 30, 2018, we also had federal R&D tax credit carryforwards of \$8.5 million that begin to expire in 2032.

In general, under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its NOLs to offset future taxable income. We have not completed a study to assess whether an ownership change has occurred in the past. Our existing NOLs may be subject to limitations arising from previous ownership changes, and if we undergo an ownership change, our ability to utilize NOLs could be further limited by Section 382 of the Code. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Code. Our NOLs are also subject to international regulations, which could restrict our ability to utilize our NOLs.

Furthermore, our ability to utilize NOLs of companies that we may acquire in the future, if any, may be subject to limitations. There is also a risk that due to regulatory changes, such as suspensions on the use of NOLs, or other unforeseen reasons, our existing NOLs could expire or otherwise be unavailable to offset future income tax liabilities.

Results of Operations

Comparison of Three Months Ended March 31, 2019 and 2018

	Three months ended March 31,		Change
	2019	2018	
Collaboration revenues	\$ 641,140	\$ 771,890	\$ (130,750)
Operating expenses:			
Research and development	6,497,619	5,156,386	1,341,233
General and administrative	1,849,158	2,446,505	(597,347)
	<u>8,346,777</u>	<u>7,602,891</u>	<u>743,886</u>
Loss from operations	(7,705,637)	(6,831,001)	(874,636)
Interest expense, net	1,053,877	920,870	133,007
Loss on extinguishment of debt	183,554	-	183,554
Change in fair value of warrant liability	1,301,728	(211,992)	1,513,720
Loss before income taxes	(10,244,796)	(7,539,879)	(2,704,917)
Income tax (benefit) expense	-	-	-
Net loss	<u>\$ (10,244,796)</u>	<u>\$ (7,539,879)</u>	<u>\$ (2,704,917)</u>

Collaboration Revenues

The following table sets forth a summary of revenue recognized from our collaboration and licensing agreements for the three months ended March 31, 2019 and 2018, all of which was from the recognition of deferred revenues under such agreements:

	Three months ended March 31,	
	2019	2018
IPCA Collaboration	\$ 128,007	\$ 65,268
Liomont Collaboration	84,414	59,160
Huahai Collaboration	371,427	178,712
BioLexis Collaboration	57,292	468,750
	<u>\$ 641,140</u>	<u>\$ 771,890</u>

Collaboration revenues decreased by \$0.1 million to \$0.7 million for the three months ended March 31, 2019, as compared to \$0.8 million for the three months ended March 31, 2018. The decrease is primarily due to the adoption of ASU No. 2014-09, effective October 1, 2018, which changed our revenue recognition policies for milestone payments. We previously recognized substantive milestones in the period the milestones were achieved but ASU 2014-09 prescribes that those milestones are a form of variable consideration and should be recognized when the performance obligation is satisfied, which results in such amounts being recognized over the estimated performance period.

Research and Development Expenses

The following table summarizes our research and development expenses by functional area for the three months ended March 31, 2019 and 2018:

	Three months ended March 31,	
	2019	2018
ONS-5010 development	\$ 2,622,113	\$ 1,953,850
Compensation and related benefits	1,511,822	1,676,419
Stock-based compensation	120,763	(403,034)
Loss on disposal of property and equipment	561,735	-
Other research and development	1,681,186	1,929,151
Total research and development expenses	<u>\$ 6,497,619</u>	<u>\$ 5,156,386</u>

Research and development expenses for the three months ended March 31, 2019 increased by \$1.3 million compared to the three months ended March 31, 2018. The increase was primarily due to increased ONS-5010 development costs of \$0.6 million as we progressed into Phase 3 clinical trials near the end of fiscal year 2018 and a \$0.6 million write off of certain construction in progress assets and laboratory equipment resulting from our decision to focus solely on ONS-5010 and to outsource the commercial manufacturing for the program.

General and Administrative Expenses

The following table summarizes our general and administrative expenses by type for the three months ended March 31, 2019 and 2018:

	Three months ended March 31,	
	2019	2018
Professional fees	\$ 649,355	\$ 699,503
Compensation and related benefits	430,126	708,618
Stock-based compensation	146,979	102,823
Facilities, fees and other related costs	622,698	935,561
Total general and administrative expenses	<u>\$ 1,849,158</u>	<u>\$ 2,446,505</u>

General and administrative expenses for the three months ended March 31, 2019 decreased by \$0.6 million compared to the three months ended March 31, 2018. The decrease was due to our ongoing efforts to reduce general and administrative expenses and focus our resources on the development of ONS-5010.

Interest Expense

Interest expense increased by \$0.1 million to \$1.0 million for the three months ended March 31, 2019 as compared to \$0.9 million for the three months ended March 31, 2018. The increase was primarily due to a \$0.1 million net increase in interest expense from equipment loans, and capital lease obligations and amortization of debt discount and interest expense on the senior secured notes issued due to the modification made to the notes during the year.

Change in Fair Value of Warrant Liability

During the three months ended March 31, 2019, we recorded expense of \$1.3 million related to the increase in the fair value of our common stock warrant liability associated with the warrants issued in connection with our senior secured notes, which resulted from an increase in the price of our common stock.

Comparison of Six Months Ended March 31, 2019 and 2018

	Six months ended March 31,		Change
	2019	2018	
Collaboration revenues	\$ 1,708,738	\$ 1,543,780	\$ 164,958
Operating expenses:			
Research and development	14,918,544	5,558,788	9,359,756
General and administrative	4,753,146	5,995,757	(1,242,611)
	<u>19,671,690</u>	<u>11,554,545</u>	<u>8,117,145</u>
Loss from operations	(17,962,952)	(10,010,765)	(7,952,187)
Interest expense, net	2,174,726	1,638,753	535,973
Loss on extinguishment of debt	183,554	1,252,353	(1,068,799)
Change in fair value of warrant liability	(334,592)	(290,775)	(43,817)
Loss before income taxes	(19,986,640)	(12,611,096)	(7,375,544)
Income tax (benefit) expense	-	(3,150,716)	3,150,716
Net loss	<u>\$ (19,986,640)</u>	<u>\$ (9,460,380)</u>	<u>\$ (10,526,260)</u>

Collaboration Revenues

The following table sets forth a summary of revenue recognized from our collaboration and licensing agreements for the six months ended March 31, 2019 and 2018, all of which was from the recognition of deferred revenues under such agreements:

	Six months ended March 31,	
	2019	2018
IPCA Collaboration	\$ 256,014	\$ 130,536
Liomont Collaboration	183,828	118,321
Huahai Collaboration	742,854	357,423
BioLexis Collaboration	526,042	937,500
	<u>\$ 1,708,738</u>	<u>\$ 1,543,780</u>

Collaboration revenues increased \$0.2 million, to \$1.7 million, for the six months ended March 31, 2019, as compared to \$1.5 million for the six months ended March 31, 2018. The increase is primarily due to the adoption of ASU No. 2014-09, effective October 1, 2018, which changed our revenue recognition policies for milestone payments. We previously recognized substantive milestones in the period the milestones were achieved but ASU 2014-09 prescribes that those milestones are a form of variable consideration and should be recognized when the performance obligation is satisfied, which results in such amounts being recognized over the estimated performance period.

Research and Development Expenses

The following table summarizes our research and development expenses by functional area for the six months ended March 31, 2019 and 2018:

	Six months ended March 31,	
	2019	2018
ONS-5010 development	\$ 4,993,082	\$ 1,953,850
Settlement of clinical development contract	-	(3,228,613)
Compensation and related benefits	3,396,471	3,102,821
Stock-based compensation	211,972	(84,793)
Loss on disposal of property and equipment	2,911,138	-
Other research and development	3,405,881	3,815,523
Total research and development expenses	<u>\$ 14,918,544</u>	<u>\$ 5,558,788</u>

Research and development expenses for the six months ended March 31, 2019 increased by \$9.4 million compared to the six months ended March 31, 2018. The increase was primarily due to increased ONS-5010 development costs of \$3.0 million as we progressed into Phase 3 clinical trials near the end of fiscal year 2018. A portion of the increase was also due to a \$2.9 million write off of certain construction in progress assets and laboratory equipment resulting from our decision to focus on ONS-5010 and to outsource the commercial manufacturing for the program. In addition, 2018 reflects a \$3.2 million favorable settlement of a contract related to our inactive biosimilar product candidates in fiscal 2018.

General and Administrative Expenses

The following table summarizes our general and administrative expenses by type for the six months ended March 31, 2019 and 2018:

	Six Months Ended March 31,	
	2019	2018
Professional fees	\$ 2,130,329	\$ 1,427,523
Compensation and related benefits	591,307	1,304,864
Stock-based compensation	928,059	1,674,402
Facilities, fees and other related costs	1,103,451	1,588,968
Total general and administrative expenses	<u>\$ 4,753,146</u>	<u>\$ 5,995,757</u>

General and administrative expenses for the six months ended March 31, 2019 decreased by \$1.2 million compared to the six months ended March 31, 2018. The decrease was primarily due to a reduction in stock-based compensation expense, which decreased because the first quarter of fiscal 2018 reflected the completion of the vesting period for many of our pre-IPO equity grants and a decrease in compensation expense related to the reversal of previously accrued compensation cost. Additionally, our ongoing efforts to reduce expenses to support the ongoing development of ONS-5010 resulted in a reduction in facilities and other costs of approximately \$0.6 million which were offset by an increase in professional fees due to advisory services related to the restructuring of our senior secured notes.

Interest Expense

Interest expense increased by \$0.6 million to \$2.2 million for the six months ended March 31, 2019 as compared to \$1.6 million for the six months ended March 31, 2018. The increase was primarily due to a \$0.3 million net increase in interest expense from equipment loans, and capital lease obligations and \$0.2 million increase in amortization of debt discount and interest expense on the senior secured notes issued due to the modification made to the notes during the six month period.

Change in Fair Value of Warrant Liability

During the six months ended March 31, 2019, we recorded expense of \$0.3 million related to the increase in the fair value of our common stock warrant liability associated with the warrants issued in connection with our senior secured notes, which resulted from an increase in the price of our common stock.

Liquidity and Capital Resources

We have not generated any revenue from product sales. Since inception, we have incurred net losses and negative cash flows from our operations. Through March 31, 2019, we have funded substantially all of our operations through the receipt of \$215.3 million net proceeds from the issuance of our equity securities, debt securities and borrowings under debt facilities. We have also received an aggregate of \$29.0 million pursuant to our collaboration and licensing agreements.

In November and December 2018, we issued 1,608,234 shares of the common stock to BioLexis for aggregate cash proceeds of \$12.0 million pursuant our November 2018 purchase agreement. In January and February 2019, we issued 1,072,156 shares of common stock for the remaining \$8.0 million aggregate cash proceeds thereunder. In November 2018, we also reached an agreement with the holders of our \$13.5 million senior secured notes to extend the maturity of the senior secured notes up to December 22, 2019, among other items, in exchange for making several payments of principal and interest through August 31, 2019, subject to meeting additional capital raising commitments (which capital raising condition was met in April 2019 through the completed underwritten public offering of our common stock and accompanying warrants). In addition, we agreed to make the senior secured notes convertible into common stock at a price of \$8.9539 per share (120% of the price per share paid by BioLexis under the purchase agreement) and reduced the exercise price of the warrants held by such holders to \$12.00 and extended the expiration of these warrants by three years. We paid \$5.9 million of principal and interest on the senior secured notes through March 31, 2019.

In November 2018, we received approval from the New Jersey Economic Development Authority's Technology Business Tax Certificate Transfer Program to sell approximately \$3.7 million of our unused New Jersey NOLs and R&D credits for \$3.4 million, of which approximately \$0.8 million was received in April 2019. We expect to receive the balance of approximately \$2.6 million of proceeds from the sale of the New Jersey NOLs and R&D credits in the third quarter of fiscal 2019.

On April 12, 2019, we completed an underwritten public offering of 10,340,000 shares of our common stock, 15-month warrants to purchase up to an aggregate of 10,340,000 shares of our common stock and five-year warrants to purchase up to an aggregate of 10,340,000 shares of our common stock at a combined public offering price of \$2.75 per share and accompanying warrants. The shares of common stock and the warrants were immediately separable and were issued separately. The warrants were exercisable immediately at an exercise price of \$2.90 per share. We received approximately \$26.2 million in net proceeds from the public offering after payment of fees, expenses and underwriting discounts and commissions.

As of March 31, 2019, we had an accumulated deficit of \$239.9 million and a cash balance of \$0.2 million. In addition, we have \$8.5 million of senior secured notes which may become due in fiscal 2019, \$3.6 million unsecured notes, which are due on demand as of such date, and \$1.0 million of unsecured notes that are due on demand but are subject to a forbearance agreement through March 7, 2020. These matters raise substantial doubt about our ability to continue as a going concern. Our consolidated financial statements do not include any adjustments related to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might result from the outcome of this uncertainty. We anticipate incurring additional losses until such time, if ever, that we can generate significant sales of our product candidates currently in development. We will need substantial additional financing to fund our operations and to commercially develop our product candidates. Management is currently evaluating various strategic opportunities to obtain the required funding for future operations. These strategies may include, but are not limited to payments from potential strategic research and development, licensing and/or marketing arrangements with pharmaceutical companies, private placements and/or public offerings of equity and/or debt securities. There can be no assurance that these future funding efforts will be successful.

Our future operations are highly dependent on a combination of factors, including (i) the timely and successful completion of additional financing discussed above, (ii) our ability to complete revenue-generating partnerships with pharmaceutical companies, (iii) the success of our research and development, (iv) the development of competitive therapies by other biotechnology and pharmaceutical companies, and, ultimately, (v) regulatory approval and market acceptance of our proposed future products.

Funding Requirements

We plan to focus in the near term on advancing ONS-5010 through clinical trials to support the filing of a Biologics License Application with the FDA to support the generation of commercial revenues. We anticipate we will incur net losses and negative cash flow from operations for the foreseeable future. We may not be able to complete the development and initiate commercialization of ONS-5010 if, among other things, our clinical trials are not successful or if the FDA does not approve our application arising out of our current clinical trials when we expect, or at all.

Our primary uses of capital are, and we expect will continue to be, compensation and related expenses, manufacturing and facility costs, external research and development services, laboratory and related supplies, legal and other regulatory expenses, and administrative and overhead costs. Our future funding requirements will be heavily determined by the resources needed to support development of our lead product candidate.

We believe our existing cash as of March 31, 2019, together with the \$26.2 million of net proceeds from the April 2019 public common stock and warrants offering and anticipated proceeds from the sale of New Jersey NOLs and R&D credits will provide adequate financial resources to fund our operations into December 2019, excluding any unscheduled repayment of debt. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we expect. We will need to raise substantial additional capital in order to complete our planned ONS-5010 development program. We plan to finance our future operations with a combination of proceeds from potential strategic collaborations, sale of the development and commercial rights to our drug product candidates, the issuance of equity securities, the issuance of additional debt, and revenues from potential future product sales, if any. If we raise additional capital through the sale of equity or convertible debt securities, your ownership will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a holder of our common stock. There are no assurances that we will be successful in obtaining an adequate level of financing for the development and commercialization of ONS-5010 or any other current or future product candidates. Alternatively, we will be required to, among other things, modify our clinical trial plans for ONS-5010 in additional indications, make reductions in our workforce, scale back our plans and place certain activities on hold, discontinue our development programs, liquidate all or a portion of our assets, and/or seek protection under the provisions of the U.S. Bankruptcy Code.

Cash Flows

The following table summarizes our cash flows for each of the periods presented:

	Six months ended March 31,	
	2019	2018
Net cash used in operating activities	\$ (16,057,443)	\$ (16,110,027)
Net cash used in investing activities	(286,569)	(1,350,329)
Net cash provided by financing activities	14,765,440	20,210,952

Operating Activities.

During the six months ended March 31, 2019, we used \$16.1 million of cash in operating activities resulting from our net loss of \$20.0 million and the change in our operating assets and liabilities of \$2.5 million. This use of cash was partially offset by \$6.4 million of noncash items such as non-cash interest expense, stock-based compensation, change in fair value of warrant liability, loss on disposal of property and equipment, loss on extinguishment of debt and depreciation and amortization expense. The change in our operating assets and liabilities was primarily due to payments of our accrued expenses from September 30, 2018 as well as the amortization of our deferred revenues from collaborations.

During the six months ended March 31, 2018, we used \$16.1 million of cash in operating activities resulting from our net loss of \$9.5 million and the change in our operating assets and liabilities of \$11.6 million. This use of cash was partially offset by \$4.9 million of noncash items such as non-cash interest expense, stock-based compensation, change in fair value of warrant liability, loss on extinguishment of debt and depreciation and amortization expense. The change in our operating assets and liabilities was primarily due to payments of our outstanding accounts payable and accrued expenses from September 30, 2017 as well as the prepayment of certain research and development expenses and the amortization of our deferred revenues from collaborations.

Investing Activities.

During the six months ended March 31, 2019 and 2018, we used cash of \$0.3 million and \$1.4 million, respectively, in investing activities for the purchase of property and equipment.

Financing Activities.

During the six months ended March 31, 2019, net cash provided by financing activities was \$14.8 million, primarily attributable to \$19.8 million in net proceeds from the November 2018 BioLexis private placement. In November 2018 through February 2019, we closed the sale of this private placement for an aggregate of 2,680,390 shares of our common stock for gross cash proceeds of \$20.0 million. We also made \$5.0 million in debt and capital lease obligations payments.

During the six months ended March 31, 2018, net cash provided by financing activities was \$20.2 million, primarily attributable to \$20.6 million in net proceeds from our second closing of our Series A Convertible in October 2017. We also had \$0.4 million in debt payments.

Off-Balance Sheet Arrangements

We did not have any off-balance sheet arrangements as of March 31, 2019.

Contractual Obligations and Commitments

Not applicable.

Critical Accounting Policies and Significant Judgments and Estimates

The Critical Accounting Policies and Significant Judgments and Estimates included in our Form 10-K for the fiscal year ended September 30, 2018, filed with the SEC on December 18, 2018, have not materially changed with the exception of our revenue recognition policies.

On October 1, 2018, we adopted ASU No. 2014-09 and changed our revenue recognition policies accordingly. The standard's stated core principle is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. This guidance also requires an entity to disclose sufficient information to enable users of financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. Qualitative and quantitative information is required about:

- *Contracts with customers* - including revenue and impairments recognized, disaggregation of revenue and information about contract balances and performance obligations (including the transaction price allocated to the remaining performance obligations).
- *Significant judgments and changes in judgments* - determining the timing of satisfaction of performance obligations (over time or at a point in time), and determining the transaction price and amounts allocated to performance obligations.
- *Certain assets* - assets recognized from the costs to obtain or fulfill a contract.

Our arrangements fall under ASC 808. ASC 808 does not address recognition or measurement matters but prescribes that entities look to other GAAP by analogy, namely ASU 2014-09. As such, we completed an analysis of existing contracts with our collaboration partners and assessed the differences in accounting for such contracts under ASU 2014-09 compared with current revenue accounting standards. We previously recognized substantive milestones in the period the milestones were achieved, but ASU 2014-09 prescribes that those milestones are a form of variable consideration which results in such amounts being recognized over the estimated performance period. For the three and six months ended March 31, 2019, we would have recognized \$0.3 million and \$1.1 million, respectively, of collaboration revenues under revenue recognition guidance in effect during fiscal 2018 prior to the adoption of ASU 2014-09.

JOBS Act Accounting Election

The JOBS Act, permits an "emerging growth company" such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. We have irrevocably elected to "opt out" of this provision and, as a result, we will comply with new or revised accounting standards when they are required to be adopted by public companies that are not emerging growth companies.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Not applicable.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act refers to controls and procedures that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Because there are inherent limitations in all control systems, a control system, no matter how well conceived and operated, can provide only reasonable, as opposed to absolute, assurance that the objectives of the control system are met. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. Based on that evaluation, our chief executive officer and chief financial officer concluded that our disclosure controls and procedures were effective, at the reasonable assurance level, as of the end of the period covered by this report.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rules 13a-15(d) and 15d-15(f) under the Exchange Act) that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting during our second fiscal quarter ended March 31, 2019.

Part II. Other Information

Item 1. Legal Proceedings

From time to time, we may become involved in litigation relating to claims arising from the ordinary course of business. Our management believes that there are currently no claims or actions pending against us, the ultimate disposition of which would have a material adverse effect on our results of operations, financial condition or cash flows.

Item 1A. Risk Factors

Not applicable.

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

Not applicable.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits**EXHIBIT INDEX**

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Registrant's current report on Form 8-K filed with the SEC on May 19, 2016).
3.2	Certificate of Designation of Series A-1 Convertible Preferred Stock (incorporated by reference to Exhibit 3.1 to the Registrant's current report on Form 8-K filed with the SEC on July 19, 2018).
3.3	Certificate of Amendment to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Registrant's current report on Form 8-K filed with the SEC on December 6, 2018).
3.4	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to the Registrant's current report on Form 8-K filed with the SEC on May 19, 2016).
3.5	Amendment to the Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to the Registrant's current report on Form 8-K filed with the SEC on November 29, 2016).
10.1	Warrant Agreement, including form of 15-Month Warrant and form of Five-Year Warrant by and between the Registrant and American Stock Transfer & Trust Company, LLC, as Warrant Agent, dated April 12, 2019.
10.2	Amendment #3 to the Warrant Agreement dated May 18, 2016 by and between the Registrant and American Stock Transfer & Trust Company LLC, as Warrant Agent, dated January 22, 2019 (incorporated by reference to Exhibit 10.1 to the Registrant's current report on Form 8-K filed with the SEC on January 22, 2019).
31.1	Certification of Principal Executive and Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Principal Executive and Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

* This certification is being furnished solely to accompany this Quarterly Report pursuant to 18 U.S.C. Section 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the registrant, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

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.

OUTLOOK THERAPEUTICS, INC.

Date: May 15, 2019

By: /s/ Lawrence A. Kenyon

Lawrence A. Kenyon

Chief Executive Officer and Chief Financial Officer

(Principal Executive, Accounting, and Financial Officer)

WARRANT AGREEMENT

THIS WARRANT AGREEMENT made as of April 12, 2019 (the “**Issuance Date**”), between Outlook Therapeutics, Inc., a Delaware corporation (the “**Company**”), and American Stock Transfer & Trust Company, LLC, a New York limited liability trust company (the “**Warrant Agent**”).

WHEREAS, the Company has sold (i) 10,340,000 shares of common stock, par value \$0.01 per share (the “**Common Stock**” and includes any share capital into which such Common Stock shall have been changed or any share capital resulting from a reclassification of such Common Stock), of the Company, (ii) 15-month warrants (each a “**15-Month Warrant**” and, collectively, the “**15-Month Warrants**”) to purchase 10,340,000 shares of Common Stock (collectively, the “**15-Month Warrant Shares**”), subject to adjustment as described therein, and (iii) five-year warrants (each, a “**Five-Year Warrant**,” collectively, the “**Five-Year Warrants**” and, together with the 15-Month Warrants, the “**Warrants**”) to purchase 10,340,000 shares of Common Stock (each, a “**Five-Year Warrant Share**,” collectively, the “**Five-Year Warrant Shares**” and, together with the 15-Month Warrant Shares, the “**Warrant Shares**”), subject to adjustment as described herein, pursuant to an Underwriting Agreement, dated April 10, 2019, between the Company and Oppenheimer & Co. Inc., as representative of the several underwriters named therein (the “**Underwriting Agreement**”);

WHEREAS, the Company has filed with the Securities and Exchange Commission a Registration Statement, No. 333-229761 on Form S-1 (as the same may be amended from time to time), which was declared effective on April 9, 2019 (the “**Initial Registration Statement**”), and has filed an additional registration statement pursuant to Rule 462(b) of the 1933 Act (as defined below), which became effective upon filing (together with the Initial Registration Statement, the “**Registration Statement**”) for the registration, under the Securities Act of 1933, as amended (the “**1933 Act**”) of the Common Stock, the Warrants and the Warrant Shares;

WHEREAS, the Company desires the Warrant Agent to act on behalf of the Company, and the Warrant Agent is willing to so act, in connection with the issuance, registration, transfer, exchange and exercise of the Warrants;

WHEREAS, the Company desires to provide for the form and provisions of the Warrants, the terms upon which they shall be issued and exercised, and the respective rights, limitation of rights, and immunities of the Company, the Warrant Agent, and the holders of the Warrants; and

WHEREAS, all acts and things have been done and performed that are necessary to make the Warrants, when executed on behalf of the Company and countersigned by or on behalf of the Warrant Agent, as provided herein, the valid, binding and legal obligations of the Company, and to authorize the execution and delivery of this Warrant Agreement.

NOW, THEREFORE, in consideration of the mutual agreements herein contained, the parties hereto agree as follows:

1. Appointment of Warrant Agent. The Company hereby appoints the Warrant Agent to act as agent for the Company for the Warrants, and the Warrant Agent hereby accepts such appointment and agrees to perform the same in accordance with the express terms and conditions set forth in this Warrant Agreement.

2. Warrants.

2.1 Form of Warrant. The Warrants shall be registered securities and shall be initially evidenced by global Warrant certificates (each a “**Global Certificate**” and collectively the “**Global Certificates**”) in the form of Exhibit A to this Warrant Agreement in the case of the Five-Year Warrants and in the form of Exhibit B to this Warrant Agreement in the case of the 15-Month Warrants, each of which shall be deposited on behalf of the Company with a custodian for The Depository Trust Company (“**DTC**”) and registered in the name of Cede & Co., a nominee of DTC. If DTC subsequently ceases to make its settlement system available for the Warrants, the Company may instruct the Warrant Agent regarding making arrangements for book-entry settlement. In the event that the Warrants are not eligible for, or it is no longer necessary to have the Warrants available in, registration in the name of Cede & Co., a nominee of DTC, the Company may instruct the Warrant Agent to provide written instructions to DTC to deliver to the Warrant Agent for cancellation the Global Certificates, and the Company shall instruct the Warrant Agent to deliver to each Holder (as defined below) separate certificates evidencing Warrants (“**Definitive Certificates**” and, together with the Global Certificates, “**Warrant Certificates**”), in the form of Exhibit C to this Warrant Agreement in the case of the Five-Year Warrants and Exhibit D to this Warrant Agreement in the case of the 15-Month Warrants. The Warrants represented by the Global Certificates are referred to as “**Global Warrants**”.

2.2 Registration.

2.2.1 Warrant Register. The Warrant Agent shall maintain books (“**Warrant Register**”) for the registration of original issuance and the registration of transfer of the Warrants. Any Person in whose name ownership of a beneficial interest in the Warrants evidenced by a Global Certificate is recorded in the records maintained by DTC or its nominee shall be deemed the “beneficial owner” thereof, *provided* that all such beneficial interests shall be held through a Participant (as defined below), which shall be the registered holder of such Warrants.

2.2.2 Issuance of Warrants. Upon the initial issuance of the Warrants, the Warrant Agent shall issue the Global Certificates and deliver the Warrants in the DTC settlement system in accordance with written instructions delivered to the Warrant Agent by the Company. Ownership of beneficial interests in the Warrants shall be shown on, and the transfer of such ownership shall be effected through, records maintained (i) by DTC and (ii) by institutions that have accounts with DTC (each, a “**Participant**”), subject to a Holder’s right to elect to receive a Warrant in certificated form in the form of Exhibit C to this Warrant Agreement in the case of the Five-Year Warrants and Exhibit D to this Warrant Agreement in the case of the 15-Month Warrants. Any Holder desiring to elect to receive a Warrant in certificated form shall make such request in writing delivered to the Warrant Agent pursuant to Section 2.2.6, and shall surrender to the Warrant Agent the interest of the Holder on the books of the Participant evidencing the Warrants that are to be represented by a Definitive Certificate through the DTC settlement system. Thereupon, the Warrant Agent shall countersign and deliver to the person entitled thereto a Warrant Certificate or Warrant Certificates, as the case may be, as so requested.

2.2.3 Beneficial Owner; Holder. Prior to due presentment for registration of transfer of any Warrant, the Company and the Warrant Agent may deem and treat the person in whose name that Warrant shall be registered on the Warrant Register (the “**Holder**”) as the absolute owner of such Warrant for purposes of any exercise thereof, and for all other purposes, and neither the Company nor the Warrant Agent shall be affected by any notice to the contrary. Notwithstanding the foregoing, nothing herein shall prevent the Company, the Warrant Agent or any agent of the Company or the Warrant Agent from giving effect to any written certification, proxy or other authorization furnished by DTC governing the exercise of the rights of a holder of a beneficial interest in any Warrant. The rights of beneficial owners in a Warrant evidenced by a Global Certificate shall be exercised by the Holder or a Participant through the DTC system, except to the extent set forth herein or in such Global Certificate.

2.2.4 Execution. The Warrant Certificates shall be executed on behalf of the Company by any authorized officer of the Company (an “**Authorized Officer**”), which need not be the same authorized signatory for all of the Warrant Certificates, either manually or by facsimile signature. The Warrant Certificates shall be countersigned by an authorized signatory of the Warrant Agent, which need not be the same signatory for all of the Warrant Certificates, and no Warrant Certificate shall be valid for any purpose unless so countersigned. In case any Authorized Officer of the Company that signed any of the Warrant Certificates ceases to be an Authorized Officer of the Company before countersignature by the Warrant Agent and issuance and delivery by the Company, such Warrant Certificates, nevertheless, may be countersigned by the Warrant Agent, issued and delivered with the same force and effect as though the person who signed such Warrant Certificates had not ceased to be such officer of the Company; and any Warrant Certificate may be signed on behalf of the Company by any person who, at the actual date of the execution of such Warrant Certificate, shall be an Authorized Officer of the Company authorized to sign such Warrant Certificate, although at the date of the execution of this Warrant Agreement any such person was not such an Authorized Officer.

2.2.5 Proxies. The Holder of a Warrant may grant proxies or otherwise authorize any person, including the Participants and beneficial holders that may own interests through the Participants, to take any action that a Holder is entitled to take under this Warrant Agreement or the Warrants; *provided, however*, that at all times that Warrants are evidenced by a Book Entry Warrant Certificate, exercise of those Warrants shall be effected on their behalf by Participants through DTC in accordance the procedures administered by DTC.

2.2.6 Warrant Certificate Request. A Holder has the right to elect at any time or from time to time a Warrant Exchange (as defined below) pursuant to a Warrant Certificate Request Notice (as defined below). Upon written notice by a Holder to the Warrant Agent for the exchange of some or all of such Holder's Warrants for a Definitive Certificate evidencing the same number of Warrants, which request shall be in the form attached hereto as Exhibit E in the case of the Five-Year Warrants and Exhibit F to this Warrant Agreement in the case of the 15-Month Warrants (a "**Warrant Certificate Request Notice**" and the date of delivery of such Warrant Certificate Request Notice by the Holder, the "**Warrant Certificate Request Notice Date**" and the deemed surrender upon delivery by the Holder of a number of Global Warrants for the same number of Warrants evidenced by a Definitive Certificate, a "**Warrant Exchange**"), the Warrant Agent shall, as soon as practicable, effect the Warrant Exchange and shall, as soon as practicable, issue and deliver to the Holder a Definitive Certificate for such number of Warrants in the name set forth in the Warrant Certificate Request Notice. Such Definitive Certificate shall be dated the original issue date of the Warrants, shall be manually executed by an authorized signatory of the Company, shall be in the form attached hereto as Exhibit C in the case of the Five-Year Warrants and in the form attached hereto as Exhibit D in the case of the 15-Month Warrants, and shall be reasonably acceptable in all respects to such Holder. In connection with a Warrant Exchange, the Company agrees to deliver, or to direct the Warrant Agent to deliver, the Definitive Certificate to the Holder within three (3) Business Days of the Warrant Certificate Request Notice pursuant to the delivery instructions in the Warrant Certificate Request Notice ("**Warrant Certificate Delivery Date**"). If the Company or the Warrant Agent fails for any reason to deliver to the Holder the Definitive Certificate subject to the Warrant Certificate Request Notice by the Warrant Certificate Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares evidenced by such Definitive Certificate (based on the Weighted Average Price (as defined in the Warrants) of the Common Stock on the Warrant Certificate Request Notice Date), \$10 per Business Day for each Business Day after such Warrant Certificate Delivery Date until such Definitive Certificate is delivered or, prior to delivery of such Warrant Certificate, the Holder rescinds such Warrant Exchange. The Company covenants and agrees that, upon the date of delivery of the Warrant Certificate Request Notice, the Holder shall be deemed to be the holder of the Definitive Certificate and, notwithstanding anything to the contrary set forth herein, the Definitive Certificate shall be deemed for all purposes to contain all of the terms and conditions of the Warrants evidenced by such Warrant Certificate and the terms of this Warrant Agreement, shall not apply to the Warrants evidenced by the Definitive Certificate. The Warrant Agent shall have no responsibility for any liquidated damages that may be payable or paid to any Person under this paragraph for any failure by the Warrant Agent to deliver to the Holder the Definitive Certificate, on the Company's behalf. In addition, the Company shall indemnify and hold harmless the Warrant Agent against all claims made against the Warrant Agent for any such failure except that the Company shall not be obligated to provide any such indemnification if it is determined by a final, non-appealable judgment of a court of competent jurisdiction that such failure is due to the Warrant Agent's gross negligence, bad faith or willful misconduct.

2.2.7 For purposes of clarity, without limiting the rights and immunities of the Warrant Agent, if there is a conflict between the express terms of this Warrant Agreement and any Definitive Certificate in the form of Exhibit C in the case of the Five-Year Warrants and Exhibit D in the case of the 15-Month Warrants hereto with respect to the terms of the Warrants, the terms of such Definitive Certificate shall govern and control.

2.3 Detachability of Warrants. The Common Stock and the Warrants will be issued separately and will be separately transferable immediately upon issuance.

3. Terms and Exercise of Warrants.

3.1 Exercise Price. The exercise price per whole share of the Common Stock under each Warrant shall be \$2.90, subject to adjustment hereunder (the "**Exercise Price**").

3.2 Duration of Warrants. A Warrant may be exercised only during the period (the “**Exercise Period**”) commencing on the Issuance Date and terminating at 5:00 P.M., Eastern time on the date sixty (60) months after the Issuance Date in the case of the Five-Year Warrants and on the date fifteen (15) months after the Issuance Date in the case of the 15-Month Warrants or, if any such date falls on a day other than a Business Day or on which trading does not take place on the Principal Market (a “**Holiday**”), the next day that is not a Holiday (the “**Expiration Date**”). Each Warrant not exercised on or before the applicable Expiration Date shall become void, and all rights thereunder and all rights in respect thereof under this Warrant Agreement shall cease at the close of business on the applicable Expiration Date.

3.3 Exercise of Warrants.

3.3.1 Exercise and Payment. A registered holder may exercise a Warrant by delivering, not later than 5:00 P.M., Eastern time, on any Business Day during the Exercise Period (the “**Exercise Date**”) to the Warrant Agent at its offices designated for such purpose (i) the Warrant Certificate evidencing the Warrants to be exercised, or, in the case of a Book-Entry Warrant Certificate, the Warrants to be exercised (the “**Book-Entry Warrants**”) free on the records of the Depository to an account of the Warrant Agent at the Depository designated for such purpose in writing by the Warrant Agent to the Depository from time to time, and (ii) an election to purchase the Warrant Shares underlying the Warrants to be exercised (the “**Election to Purchase**” and together with the Warrant Certificates and the Book-Entry Warrants, the “**Warrant Exercise Documents**”), properly completed and duly executed by the registered holder on the reverse of the Warrant Certificate, accompanied by a signature guarantee and such other documentation as the Warrant Agent may reasonably request, or, in the case of a Book-Entry Warrant Certificate, properly delivered by the Participant in accordance with the Depository’s procedures. Within one Trading Day after the Exercise Date, such holder must pay the Warrant Price for each Warrant to be exercised in lawful money of the United States of America by wire, certified or official bank check, or wire transfer, in immediately available funds unless such holder has elected to make a cashless exercise pursuant to Section 3.3.8. The term “**Warrant Price**” as used in this Warrant Agreement refers to price per share of Common Stock at which shares may be purchased at the time the Warrant is exercised.

If any of (A) the Warrant Certificate or the Book-Entry Warrants, (B) the Election to Purchase, or (C) the Warrant Price therefor, is received by the Warrant Agent after 5:00 P.M., Eastern time, on the specified Exercise Date, the Warrants will be deemed to be received on the Business Day next succeeding the Exercise Date. If the date specified as the Exercise Date is not a Business Day, the Warrants will be deemed to be received on the next succeeding day that is a Business Day. If the Warrants are received or deemed to be received after the Expiration Date, the exercise thereof will be null and void and any funds delivered to the Warrant Agent will be returned to the registered holder or Participant, as the case may be, as soon as practicable. In no event will a registered holder or Participant be entitled to interest accrued on funds deposited with the Warrant Agent in respect of an exercise or attempted exercise of Warrants. The Warrant Agent shall not have any responsibility or liability relating to the determination as to the validity of any exercise of Warrants which determination will be made by the Company and the applicable registered holder, and the Warrant Agent may rely upon the instructions of the Company regarding the validity of any exercise of Warrants. The Warrant Agent shall not have any obligation to inform a registered holder of the invalidity of any exercise of Warrants. If the Company believes that an exercise by a registered holder is invalid the Company will promptly notify such registered holder of the such fact and the reasons why it believes the exercise was invalid and will provide a copy of such notice to the Warrant Agent as soon as practicable.

The Warrant Agent shall forward funds received for warrant exercises in a given month by the 5th Business Day of the following month by wire transfer to an account designated by the Company in writing.

All funds received by the Warrant Agent under this Warrant Agreement that are to be distributed or applied by the Warrant Agent in the performance of services (the “**Funds**”) shall be held by the Warrant Agent as agent for the Company and deposited in one or more bank accounts to be maintained by the Warrant Agent in its name as agent for the Company. Until paid pursuant to the terms of this Warrant Agreement, the Warrant Agent will hold the Funds through such accounts in: deposit accounts of commercial banks with Tier 1 capital exceeding \$1 billion or with an average rating above investment grade by Standard and Poor’s Corporation (LT Local Issuer Credit Rating), Moody’s Investors Service, Inc. (Long Term Rating) and Fitch Ratings, Inc. (LT Issuer Default Rating) (each as reported by Bloomberg Finance L.P.). The Warrant Agent shall have no responsibility or liability for any diminution of the Funds that may result from any deposit made by the Warrant Agent in accordance with this paragraph, including any losses resulting from a default by any bank, financial institution or other third party. The Warrant Agent may from time to time receive interest, dividends or other earnings in connection with such deposits. The Warrant Agent shall not be obligated to pay such interest, dividends or earnings to the Company, any holder or any other Person.

3.3.2 Issuance of Certificates. The Warrant Agent shall, within a reasonable time, advise the Company and the Company’s transfer agent and registrar (the “**Transfer Agent**”) in respect of (a) the Warrant Shares issuable upon such exercise as to the number of Warrants exercised in accordance with the terms and conditions of this Warrant Agreement, (b) the instructions of each registered holder or Participant, as the case may be, with respect to delivery of the Warrant Shares issuable upon such exercise, and the delivery of definitive Warrant Certificates, as appropriate, evidencing the balance, if any, of the Warrants remaining after such exercise, (c) in case of a Book-Entry Warrant Certificate, the notation that shall be made to the records maintained by the Depository, its nominee for each Book-Entry Warrant Certificate, or a Participant, as appropriate, evidencing the balance, if any, of the Warrants remaining after such exercise and (d) such other information as the Company, the Warrant Agent or such transfer agent and registrar shall reasonably require. So long as the Holder delivers the Warrant Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Warrant Exercise Documents have been delivered to the Warrant Agent, then on or prior to the earlier of (i) the second (2nd) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period, in each case following the date on which the Warrant Exercise Documents have been delivered to the Company, or, if the Holder does not deliver the Warrant Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Warrant Exercise Documents have been delivered to the Warrant Agent, then on or prior to the first (1st) Trading Day following the date on which the Warrant Price (or notice of a Cashless Exercise) is delivered (such earlier date, or if later, the earliest day on which the Company is required to deliver Warrant Shares pursuant to this Section 1(a), the “**Share Delivery Date**”), the Company shall cause the Warrant Agent to (X) *provided* that the Transfer Agent is participating in the DTC Fast Automated Securities Transfer Program, credit such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system, or (Y) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, issue and dispatch by overnight courier to the address or e-mail address as specified in the Warrant Exercise Documents, evidence of credit of book-entry shares, registered in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise. If the Warrant Agent fails for any reason to deliver to such registered holder or Participant, as the case may be, the Warrant Shares subject to an exercise notice by the Share Delivery Date, the Company shall pay to the registered holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the Weighted Average Price of the Common Stock on the date of the applicable exercise notice), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Share Delivery Date until such Warrant Shares are delivered or the registered holder rescinds such exercise. The Warrant Agent shall have no responsibility for any liquidated damages that may be payable or paid to any registered holder or Participant under this paragraph for any failure by the Warrant Agent to execute, issue and deliver, on the Company’s behalf, the Warrant Shares as required by this paragraph. In addition, the Company shall indemnify and hold harmless the Warrant Agent against all claims made against the Warrant Agent for any such failure except that the Company shall not be obligated to provide any such indemnification if it is determined by a final, non-appealable judgment of a court of competent jurisdiction that such failure is due to the Warrant Agent’s gross negligence, bad faith or willful misconduct.

If the Warrant Agent fails to comply with the preceding paragraphs in this Section 3.3.2 by the Share Delivery Date, then, without limiting the rights and immunities of the Warrant Agent hereunder, in addition to other rights it may have hereunder, the registered holder or Participant will have the right to rescind its exercise.

3.3.3 Valid Issuance. All shares of Common Stock issued upon the proper exercise of a Warrant in conformity with this Warrant Agreement shall be validly issued, fully paid and nonassessable.

3.3.4 Dividends. The accrual of dividends, if any, on the Warrant Shares issued hereunder will be governed by the terms generally applicable to the Common Stock. From and after the issuance of such Warrant Shares, the former holder of the Warrants exercised will be entitled to the benefits generally available to other holders of Common Stock, including the accrual of dividends, if any, on such Warrant Shares even prior to exercise of such Warrant Shares, and such former holder's right to receive payments of dividends and any other amounts payable in respect of the Warrant Shares shall be governed by, and shall be subject to, the terms and provisions generally applicable to the Common Stock.

3.3.5 No Fractional Exercise. A registered holder may exercise a Warrant from time to time only for whole shares of Common Stock. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of a Warrant. As to any fraction of a share that the holder would otherwise be entitled to purchase upon such exercise, the Company shall pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price. If fewer than all of the Warrants evidenced by a Warrant Certificate are exercised, a new Warrant Certificate for the number of unexercised Warrants remaining shall be executed by the Company and countersigned by the Warrant Agent as provided in Section 2 of this Warrant Agreement, and delivered to the holder of the Warrant Certificate at the address specified on the books of the Warrant Agent or as otherwise specified in writing by such registered holder. If fewer than all the Warrants evidenced by a Book-Entry Warrant Certificate are exercised, a notation shall be made to the records maintained by the Depository, its nominee for each Book-Entry Warrant Certificate, or a Participant, as appropriate, evidencing the balance of the Warrants remaining after such exercise. Whenever a payment for fractional shares is to be made by the Warrant Agent under this Warrant Agreement, the Company shall promptly prepare and deliver to the Warrant Agent a certificate setting forth in reasonable detail the facts related to such payments and the prices and formulas utilized in calculating such payments. The Warrant Agent shall be fully protected in relying upon such a certificate and shall have no duty with respect to, and shall not be deemed to have knowledge of, any payment for fractional shares under this Warrant Agreement relating to the payment of fractional shares unless and until the Warrant Agent shall have received such a certificate and sufficient monies. The Company shall provide an initial funding of one thousand dollars (\$1,000) for the purpose of issuing cash in lieu of fractional shares. From time to time thereafter, the Warrant Agent may request additional funding to cover payments for fractional Warrant Shares. The Warrant Agent shall have no obligation to make such payments for fractional Warrant Shares unless the Company shall have provided the necessary funds to pay in full all amounts due and payable with respect thereto. Upon expiration of the term of all Warrants or the earlier exercise of all Warrants any balance remaining of such funds shall be paid to the Company.

3.3.6 No Transfer Taxes. Issuance of Warrant Shares shall be made without charge to a registered holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the registered holder or in such name or names as may be directed by the registered holder; *provided, however*, that in the event Warrant Shares are to be issued in a name other than the name of the registered holder, a Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the registered holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all transfer agent fees required for same-day processing of any exercise notice. The Warrant Agent shall not have any duty or obligation to take any action under any section of this Warrant Agreement that requires the payment of taxes and/or charges unless and until it is satisfied that all such payments have been made.

3.3.7 Date of Issuance. Each person in whose name any book-entry notation for shares of Common Stock is issued shall for all purposes be deemed to have become the holder of record of such shares on the date on which the Warrant was surrendered and payment of the Warrant Price was made, irrespective of the date of such book entry, except that, if the date of such surrender and payment is a date when the stock transfer books of the Company are closed, such person shall be deemed to have become the holder of such shares at the close of business on the next succeeding date on which the stock transfer books are open. Upon receipt by the Company of a duly executed Notice of Exercise (which may be by facsimile or email), a registered holder shall be deemed to have exercised its Warrant as specified in the Notice of Exercise for purposes of Regulation SHO promulgated under the Securities Exchange Act of 1934, as amended (the "**1934 Act**"). A holder whose interest in a Warrant is a beneficial interest in certificate(s) representing a Warrant held in book-entry form through DTC shall be deemed to have exercised its interest in a Warrant upon instructing its broker that is a DTC participant to exercise its interest in a Warrant, for purposes of Regulation SHO promulgated under the 1934 Act.

3.3.8 Optional Cashless Exercise. A Cashless Exercise (as defined below) may occur (i) in the case of the 15-Month Warrants only, in whole or in part for a number of whole 15-Month Warrant Shares, after May 12, 2019 (the “**Cashless Date**”), if the Weighted Average Price of the Common Stock on any single Trading Day on or after the Cashless Date and prior to the date of such Cashless Exercise fails to exceed the Exercise Price in effect as of the date hereof (subject to adjustment for any stock splits, stock dividends, stock combinations, recapitalizations and similar events) in which event, in lieu of the formula below, the aggregate number of 15-Month Warrant Shares issuable in such cashless exercise pursuant to any given Exercise Notice electing to effect a Cashless Exercise shall equal the product of (x) the aggregate number of 15-Month Warrant Shares for which the 15-Month Warrants are exercised as if such exercise were by means of a cash exercise rather than a Cashless Exercise and (y) 0.60; and (ii) if at any time during the term of this Warrant Agreement there is no effective registration statement registering, or no current prospectus available for, the issuance or resale of the Warrant Shares by the registered holder, then the Warrants may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the holder shall be entitled to receive a number of Warrant Shares determined according to the following formula (a “**Cashless Exercise**”):

$$\text{Net Number} = \frac{(A \times B) - (A \times C)}{B}$$

For purposes of the foregoing formula:

A= the total number of shares with respect to which the Warrants are then being exercised.

B= as applicable: (i) the Closing Sale Price of the Common Stock on the Trading Day immediately preceding the date of the applicable Exercise Notice if such Exercise Notice is (1) both executed and delivered pursuant to Section 1(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 1(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(64) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the Weighted Average Price on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock as of the time of the Holder’s execution of the applicable Exercise Notice if such Exercise Notice is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 1(a) hereof or (iii) the Closing Sale Price of the Common Stock on the date of the applicable Exercise Notice if the date of such Exercise Notice is a Trading Day and such Exercise Notice is both executed and delivered pursuant to Section 1(a) hereof after the close of “regular trading hours” on such Trading Day.

C= the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

The Company agrees to make all calculations related to a Cashless Exercise and will provide the Warrant Agent with issuance instructions.

If Warrant Shares are issued in such a cashless exercise, the Company acknowledges and agrees that in accordance with Section 3(a)(9) of the 1933 Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised, and the holding period of the Warrants being exercised may be tacked on to the holding period of the Warrant Shares. The Company agrees not to take any position contrary to this Section 3.3.8.

3.3.9 Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the registered holder the number of Warrant Shares that are not disputed. Without limiting the rights of a Holder to receive Warrant Shares on a “cashless exercise,” and to receive the cash payments contemplated pursuant to Sections 3.3.2, 3.3.5, 3.4 and 4.5, in no event will the Company be required to pay to the Holder any cash or other consideration or otherwise net cash settle a Warrant exercise.

3.3.10 Limitations on Exercise. Notwithstanding anything to the contrary contained herein, the Company shall not effect the exercise of any portion of a Warrant, and the Holder shall not have the right to exercise any portion of a Warrant, pursuant to the terms and conditions of the Warrant and any such exercise shall be null and void and treated as if never made, to the extent that after giving effect to such exercise, the Holder together with the other Attribution Parties collectively would beneficially own in excess of [4.99][9.99%] (the “**Maximum Percentage**”) of the number of shares of Common Stock outstanding immediately after giving effect to such exercise. For purposes of the foregoing sentence, the aggregate number of shares of Common Stock beneficially owned by the Holder and the other Attribution Parties shall include the number of shares of Common Stock held by the Holder and all other Attribution Parties plus the number of shares of Common Stock issuable upon exercise of the Warrants with respect to which the determination of such sentence is being made, but shall exclude the number of shares of Common Stock that would be issuable upon (A) exercise of the remaining, unexercised portion of the Warrants beneficially owned by the Holder or any of the other Attribution Parties and (B) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company (including, without limitation, any convertible notes or convertible preferred stock or warrants, including the other Warrants) beneficially owned by the Holder or any other Attribution Party subject to a limitation on conversion or exercise analogous to the limitation contained in this Section 3.3.10. For purposes of this Section 3.3.10, beneficial ownership shall be calculated in accordance with Section 13(d) of the 1934 Act. For purposes of the Warrants, in determining the number of outstanding shares of Common Stock the Holder may acquire upon the exercise of the Warrants without exceeding the Maximum Percentage, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company’s most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q and Current Reports on Form 8-K or other public filing with the Securities and Exchange Commission (the “**SEC**”), as the case may be, (y) a more recent public announcement by the Company or (z) any other written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding (the “**Reported Outstanding Share Number**”). If the Company receives an Exercise Notice from the Holder at a time when the actual number of outstanding shares of Common Stock is less than the Reported Outstanding Share Number, the Company shall (i) notify the Holder in writing of the number of shares of Common Stock then outstanding and, to the extent that such Exercise Notice would otherwise cause the Holder’s beneficial ownership, as determined pursuant to this Section 3.3.10, to exceed the Maximum Percentage, the Holder must notify the Company of a reduced number of Warrant Shares to be purchased pursuant to such Exercise Notice (the number of shares by which such purchase is reduced, the “**Reduction Shares**”) and (ii) as soon as reasonably practicable, the Company shall return to the Holder any exercise price paid by the Holder for the Reduction Shares. For any reason at any time, upon the written or oral request of the Holder, the Company shall within one (1) Business Day confirm orally and in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including the Warrants, by the Holder and any other Attribution Party since the date as of which the Reported Outstanding Share Number was reported. In the event that the issuance of Common Stock to the Holder upon exercise of the Warrants results in the Holder and the other Attribution Parties being deemed to beneficially own, in the aggregate, more than the Maximum Percentage of the number of outstanding shares of Common Stock (as determined under Section 13(d) of the 1934 Act), the number of shares so issued by which the Holder’s and the other Attribution Parties’ aggregate beneficial ownership exceeds the Maximum Percentage (the “**Excess Shares**”) shall be deemed null and void and shall be cancelled ab initio, and the Holder shall not have the power to vote or to transfer the Excess Shares. As soon as reasonably practicable after the issuance of the Excess Shares has been deemed null and void, the Company shall return to the Holder the exercise price paid by the Holder for the Excess Shares. Upon delivery of a written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 9.99% as specified in such notice; *provided that* (i) any such increase in the Maximum Percentage will not be effective until the sixty-first (61st) day after such notice is delivered to the Company and (ii) any such increase or decrease will apply only to the Holder and the other Attribution Parties and not to any other holder of Warrants that is not an Attribution Party of the Holder. For purposes of clarity, the shares of Common Stock issuable pursuant to the terms of the Warrants in excess of the Maximum Percentage shall not be deemed to be beneficially owned by the Holder for any purpose including for purposes of Section 13(d) or Rule 16a-1(a)(1) of the 1934 Act. No prior inability to exercise the Warrants pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 3.3.10 to the extent necessary to correct this paragraph or any portion of this paragraph which may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 3.3.10 or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of the Warrants.

3.4 Company's Failure to Timely Deliver Securities. If either (I) the Company shall fail for any reason or for no reason on or prior to the applicable Share Delivery Date, if (x) the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, to issue to the Holder by book-entry credit the number of shares of Common Stock to which the Holder is entitled and register such Common Stock on the Company's share register or (y) the Transfer Agent is participating in the DTC Fast Automated Securities Transfer Program, to credit the Holder's balance account with DTC, for such number of shares of Common Stock to which the Holder is entitled upon the Holder's exercise of the Warrants or (II) a registration statement (which may be the Registration Statement) covering the issuance or resale of the Warrant Shares that are the subject of the Exercise Notice (the "**Exercise Notice Warrant Shares**") is not available for the issuance or resale, as applicable, of such Exercise Notice Warrant Shares and (x) the Company fails to promptly, but in no event later than one (1) Business Day after such registration statement becomes unavailable, to so notify the Holder and (y) the Company is unable to deliver the Exercise Notice Warrant Shares electronically without any restrictive legend by crediting such aggregate number of Exercise Notice Warrant Shares to the Holder's or its designee's balance account with DTC through its Deposit / Withdrawal At Custodian system (the event described in the immediately foregoing clause (II) is hereinafter referred to as a "**Notice Failure**" and, together with the event described in clause (I) above, an "**Exercise Failure**"), then, in addition to all other remedies available to the Holder, if on or prior to the applicable Share Delivery Date either (I) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, the Company shall fail to issue by book-entry credit to the Holder and register such shares of Common Stock on the Company's share register or, if the Transfer Agent is participating in the DTC Fast Automated Securities Transfer Program, credit the Holder's balance account with DTC for the number of shares of Common Stock to which the Holder is entitled upon the Holder's exercise hereunder or pursuant to the Company's obligation pursuant to clause (ii) below or (II) a Notice Failure occurs, and if on or after such Trading Day the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares that the Holder anticipated receiving upon such exercise from the Company (a "**Buy-In**"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions and other out-of-pocket expenses, if any) for the shares of Common Stock so purchased exceeds (y) amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity, including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely credit by book entry the Warrant Shares (or to electronically deliver such Warrant Shares) upon the exercise of the Warrants as required pursuant to the terms hereof. While the Warrants are outstanding, the Company shall cause its transfer agent to participate in the DTC Fast Automated Securities Transfer Program. In addition to the foregoing rights, (i) if the Company fails to deliver the applicable number of Warrant Shares upon an exercise pursuant to Section 1 by the applicable Share Delivery Date, then the Holder shall have the right to rescind such exercise in whole or in part and retain and/or have the Company return, as the case may be, any portion of the Warrants that has not been exercised pursuant to such Exercise Notice; *provided* that the rescission of an exercise shall not affect the Company's obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 3.4 or otherwise, and (ii) if a registration statement (which may be the Registration Statement) covering the issuance or resale of the Warrant Shares that are subject to an Exercise Notice is not available for the issuance or resale, as applicable, of such Exercise Notice Warrant Shares and the Holder has submitted an Exercise Notice prior to receiving notice of the non-availability of such registration statement and the Company has not already delivered the Warrant Shares underlying such Exercise Notice electronically without any restrictive legend by crediting such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder's or its designee's balance account with DTC through its Deposit / Withdrawal At Custodian system, the Holder shall have the option, by delivery of notice to the Company, to (x) rescind such Exercise Notice in whole or in part and retain or have returned, as the case may be, any portion of the Warrants that has not been exercised pursuant to such Exercise Notice; *provided* that the rescission of an Exercise Notice shall not affect the Company's obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 3.4 or otherwise, and/or (y) switch some or all of such Exercise Notice from a cash exercise to a Cashless Exercise.

3.5 Cost Basis Information. (a) In the event of a cash exercise, the Company hereby instructs the Warrant Agent to record cost basis for newly issued shares in a manner to be subsequently communicated by the Company in writing to the Warrant Agent.

(b) In the event of a cashless exercise, the Company shall provide cost basis for shares issued pursuant to a cashless exercise at the time the Company confirms the number of Warrant Shares issuable in connection with the cashless exercise to the Warrant Agent pursuant to Section 3.3.3 hereof.

3.6 Rule 144. (a) If the Warrant Shares are issued in a cashless exercise, the Company and the registered holder undertaking such cashless exercise acknowledge and agree that in accordance with Section 3(a)(9) of the 1933 Act, other than a change in law, the Warrant Shares take on the registered characteristics of the Warrants being exercised. For purposes of Rule 144(d) promulgated under the 1933 Act, as in effect on the Issuance Date, it is intended that the Warrant Shares issued in a cashless exercise shall be deemed to have been acquired by the holder of the Warrant Shares, and the holding period for the Warrant Shares shall be deemed to have commenced, on the date the Warrants being exercised were originally issued pursuant to the Underwriting Agreement.

(b) The Company shall, at all times prior to the earlier to occur of (i) the date of sale or other disposition by the holders of a Warrant of or all shares of Common Stock issued on exercise of such Warrant or (ii) the expiration or earlier termination of a Warrant if a Warrant has not been exercised in full or in part on such date, use commercially reasonable efforts to timely file all reports required under the 1934 Act and otherwise timely take all actions necessary to permit the holder of such Warrant and/or the shares of Common Stock issued on exercise thereof to sell or otherwise dispose of such Warrant and shares pursuant to Rule 144 promulgated under the 1933 Act, *provided* that the foregoing shall not apply in the event of a Merger Event following which the successor or surviving entity is not subject to the reporting requirements of the 1934 Act. If the holder of a Warrant proposes to sell Common Stock issuable upon the exercise of such Warrant in compliance with Rule 144, then, upon the holder of the Warrant's written request to the Company, the Company shall furnish to the holder of the Warrant, within five (5) Business Days after receipt of such request, a written statement confirming the Company's compliance with the filing and other requirements of such Rule 144.

4. Adjustments.

4.1 Adjustment Upon Issuance of Common Stock. If and whenever on or after the Subscription Date, the Company issues or sells, or in accordance with this Section 4.1 is deemed to have issued or sold, any shares of Common Stock (including the issuance or sale of shares of Common Stock owned or held by or for the account of the Company, but excluding shares of Common Stock deemed to have been issued or sold by the Company in connection with any Excluded Securities) for a consideration per share (the "**New Issuance Price**") less than a price (the "**Applicable Price**") equal to the Exercise Price in effect immediately prior to such issuance or sale or deemed issuance or sale (the foregoing a "**Dilutive Issuance**"), then immediately after such Dilutive Issuance, the Exercise Price then in effect shall be reduced to an amount equal to the New Issuance Price. For purposes of determining the adjusted Exercise Price under this Section 4.1, the following shall be applicable:

(i) Issuance of Options. If the Company in any manner grants or sells any Options and the lowest price per share for which one share of Common Stock is issuable upon the exercise of any such Options or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Options is less than the Applicable Price, then such share of Common Stock shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the granting or sale of such Options for such price per share. For purposes of this Section 4.1(i), the "lowest price per share for which one share of Common Stock is issuable upon the exercise of any such Options or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Options" shall be equal to the sum of the lowest amounts of consideration (if any) received or receivable by the Company with respect to any one share of Common Stock upon the granting or sale of the Options, upon exercise of the Options and upon conversion, exercise or exchange of any Convertible Security issuable upon exercise of such Options less any consideration paid or payable by the Company with respect to such one share of Common Stock upon the granting or sale of such Options, upon exercise of such Options and upon conversion exercise or exchange of any Convertible Security issuable upon exercise of such Options. No further adjustment of the Exercise Price shall be made upon the actual issuance of such shares of Common Stock or of such Convertible Securities upon the exercise of such Options or upon the actual issuance of such shares of Common Stock upon conversion, exercise or exchange of such Convertible Securities.

(ii) Issuance of Convertible Securities. If the Company in any manner issues or sells any Convertible Securities and the lowest price per share for which one share of Common Stock is issuable upon the conversion, exercise or exchange thereof is less than the Applicable Price, then such share of Common Stock shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the issuance or sale of such Convertible Securities for such price per share. For the purposes of this Section 4.1(ii), the “lowest price per share for which one share of Common Stock is issuable upon the conversion, exercise or exchange thereof” shall be equal to the sum of the lowest amounts of consideration (if any) received or receivable by the Company with respect to any one share of Common Stock upon the issuance or sale of the Convertible Security and upon conversion, exercise or exchange of such Convertible Security less any consideration paid or payable by the Company with respect to such one share of Common Stock upon the issuance or sale of such Convertible Security and upon conversion, exercise or exchange of such Convertible Security. No further adjustment of the Exercise Price shall be made upon the actual issuance of such shares of Common Stock upon conversion, exercise or exchange of such Convertible Securities, and if any such issuance or sale of such Convertible Securities is made upon exercise of any Options for which adjustment of the Exercise Price has been or is to be made pursuant to other provisions of this Section 4.1, no further adjustment of the Exercise Price shall be made by reason of such issuance or sale.

(iii) Change in Option Price or Rate of Conversion. If the purchase price provided for in any Options, the additional consideration, if any, payable upon the issue, conversion, exercise or exchange of any Convertible Securities, or the rate at which any Convertible Securities are convertible into or exercisable or exchangeable for shares of Common Stock increases or decreases at any time pursuant to the terms of such Options or Convertible Securities, the Exercise Price in effect at the time of such increase or decrease shall be adjusted to the Exercise Price that would have been in effect at such time had such Options or Convertible Securities provided for such increased or decreased purchase price, additional consideration or increased or decreased conversion rate, as the case may be, at the time initially granted, issued or sold. For purposes of this Section 4.1(iii), if the terms of any Option or Convertible Security that was outstanding as of the Subscription Date are increased or decreased in the manner described in the immediately preceding sentence, then such Option or Convertible Security and the shares of Common Stock deemed issuable upon exercise, conversion or exchange thereof shall be deemed to have been issued as of the date of such increase or decrease. No adjustment pursuant to this Section 4.1(a) shall be made if such adjustment would result in an increase of the Exercise Price then in effect. For the avoidance of doubt, no adjustment in the Exercise Price shall be made pursuant to this Section 4.1(iii) as a result of any modification of the terms of any Options or Convertible Securities after their date of issuance.

(iv) Calculation of Consideration Received. In case any Option is issued in connection with the issuance or sale of other securities of the Company, together comprising one integrated transaction, (x) the Options will be deemed to have been issued for the Option Value of such Options and (y) the other securities issued or sold in such integrated transaction shall be deemed to have been issued or sold for the difference of (I) the aggregate consideration received by the Company less any consideration paid or payable by the Company pursuant to the terms of such other securities of the Company, less (II) the Option Value of such Options; *provided*, that if the value determined pursuant to clause (y) above would result in a value less than the par value of the Common Stock, then the other securities issued or sold in such integrated transaction shall be deemed to have been issued or sold for the par value of the Common Stock. If any shares of Common Stock, Options or Convertible Securities are issued or sold or deemed to have been issued or sold for cash, the consideration received therefor will be deemed to be the net amount received by the Company therefor. If any shares of Common Stock, Options or Convertible Securities are issued or sold for a consideration other than cash, the amount of such consideration received by the Company will be the fair value of such consideration, except where such consideration consists of publicly traded securities, in which case the amount of consideration received by the Company will be the Closing Sale Price of such publicly traded securities on the date of receipt of such publicly traded securities. If any shares of Common Stock, Options or Convertible Securities are issued to the owners of the non-surviving entity in connection with any merger in which the Company is the surviving entity, the amount of consideration therefor will be deemed to be the fair value of such portion of the net assets and business of the non-surviving entity as is attributable to such shares of Common Stock, Options or Convertible Securities, as the case may be. The fair value of any consideration other than cash or publicly traded securities will be determined jointly by the Company and the Required Holders. If such parties are unable to reach agreement within ten (10) days after the occurrence of an event requiring valuation (the “**Valuation Event**”), the fair value of such consideration will be determined within five (5) Business Days after the tenth (10th) day following the Valuation Event by an independent, reputable appraiser jointly selected by the Company and the Required Holders. The determination of such appraiser shall be final and binding upon all parties absent manifest error and the fees and expenses of such appraiser shall be borne by the Company.

(v) Record Date. If the Company takes a record of the holders of Common Stock for the purpose of entitling them (A) to receive a dividend or other distribution payable in shares of Common Stock, Options or in Convertible Securities or (B) to subscribe for or purchase shares of Common Stock, Options or Convertible Securities, then such record date will be deemed to be the date of the issuance or sale of the shares of Common Stock deemed to have been issued or sold upon the declaration of such dividend or the making of such other distribution or the date of the granting of such right of subscription or purchase, as the case may be.

(vi) No Modification. So long as any of the Warrants are outstanding, the Company shall not amend, modify or change the terms of any Options or Convertible Securities (whether issued on, prior or after the Subscription Date) to lower the exercise price or conversion price thereof.

4.2 Adjustment upon Subdivision or Combination of Common Stock. If the Company at any time on or after the Issuance Date subdivides (by any stock split, stock dividend, recapitalization or otherwise) one or more classes of its outstanding shares of Common Stock into a greater number of shares, the Exercise Price in effect immediately prior to such subdivision will be proportionately reduced and the number of Warrant Shares will be proportionately increased. If the Company at any time on or after the Issuance Date combines (by combination, reverse stock split or otherwise) one or more classes of its outstanding shares of Common Stock into a smaller number of shares, the Exercise Price in effect immediately prior to such combination will be proportionately increased and the number of Warrant Shares will be proportionately decreased. Any adjustment under this Section 4.2 shall become effective at the close of business on the date the subdivision or combination becomes effective.

4.3 Purchase Rights. In addition to any adjustments pursuant to Section 4.1 above, if at any time on or after the Issuance Date and on or prior to the Expiration Date the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights that the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of the Warrants (without regard to any limitations or restrictions on exercise of the Warrants, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the grant, issuance or sale of such Purchase Rights (*provided, however*, that to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Purchase Right to such extent (and shall not be entitled to beneficial ownership of such Common Stock as a result of such Purchase Right (and beneficial ownership) to such extent) and such Purchase Right to such extent shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right to be held similarly in abeyance) to the same extent as if there had been no such limitation).

4.4 Rights upon Distribution of Assets. In addition to any adjustments pursuant to Section 4.1 above, if, on or after the Issuance Date and on or prior to the Expiration Date, the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property, options, evidence of indebtedness or any other assets by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "**Distribution**"), at any time after the issuance of the Warrants, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of the Warrants (without regard to any limitations or restrictions on exercise of the Warrants, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (*provided, however*, that to the extent that the Holder's right to participate in any such Distribution would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Distribution to such extent (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

4.5 **Fundamental Transaction.** The Company shall not enter into or be party to a Fundamental Transaction unless the Successor Entity assumes in writing all of the obligations of the Company under the Warrants in accordance with the provisions of this Section 4.5, including agreements to deliver to the Holder in exchange for the Warrants a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to the Warrants, including, without limitation, that is exercisable for a corresponding number of shares of capital stock equivalent to the shares of Common Stock acquirable and receivable upon exercise of the Warrants (without regard to any limitations on the exercise of the Warrants) prior to such Fundamental Transaction, and with an exercise price that applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such adjustments to the number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of the Warrants immediately prior to the consummation of such Fundamental Transaction). Upon the consummation of each Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for the Company (so that from and after the date of the applicable Fundamental Transaction, the provisions of the Warrants and the other Transaction Documents referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under the Warrants with the same effect as if such Successor Entity had been named as the Company herein. Upon consummation of each Fundamental Transaction, the Successor Entity shall deliver to the Holder confirmation that there shall be issued upon exercise of the Warrants at any time after the consummation of the applicable Fundamental Transaction, in lieu of the shares of Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 4.3 and 4.4 above, which shall continue to be receivable thereafter)) issuable upon the exercise of the Warrants prior to the applicable Fundamental Transaction, such shares of common stock (or its equivalent) of the Successor Entity (including its Parent Entity) that the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had the Warrants been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of the Warrants), as adjusted in accordance with the provisions of the Warrants. Notwithstanding the foregoing, and without limiting Section 3.3.10 hereof, the Holder may elect, at its sole option, by delivery of written notice to the Company to waive this Section 4.4 to permit the Fundamental Transaction without the assumption of the Warrants. In addition to and not in substitution for any other rights hereunder, prior to the consummation of each Fundamental Transaction pursuant to which holders of shares of Common Stock are entitled to receive securities or other assets with respect to or in exchange for shares of Common Stock (a “**Corporate Event**”), the Company shall make appropriate provision to insure that the Holder will thereafter have the right to receive upon an exercise of the Warrants at any time after the consummation of the applicable Fundamental Transaction but prior to the Expiration Date, in lieu of the shares of the Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 4.3 and 4.4 above, which shall continue to be receivable thereafter)) issuable upon the exercise of the Warrant prior to such Fundamental Transaction, such shares of stock, securities, cash, assets or any other property whatsoever (including warrants or other purchase or subscription rights) (collectively, the “**Corporate Event Consideration**”) that the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had the Warrants been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of the Warrants). The provision made pursuant to the preceding sentence shall be in a form and substance reasonably satisfactory to the Holder. The provisions of this Section 4.5 shall apply similarly and equally to successive Fundamental Transactions and Corporate Events. Notwithstanding the foregoing, in the event of a Change of Control at the request of the Holder delivered before the 30th day after such Change of Control, the Company (or the Successor Entity) shall purchase this Warrant from the Holder by paying to the Holder, within five (5) Business Days after such request (or, if later, on the effective date of the Change of Control), an amount equal to the Black Scholes Value of the remaining unexercised portion of this Warrant on the effective date of such Change of Control, payable in cash; *provided, however*, that, if the Change of Control is not within the Company’s control, including not approved by the Company’s Board of Directors, the Holder shall only be entitled to receive from the Company or any Successor Entity, as of the date of consummation of such Change of Control, the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of the Warrants, that is being offered and paid to the holders of Common Stock of the Company in connection with the Change of Control, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Change of Control.

4.6 Voluntary Adjustment by the Company. The Company may at any time during the term of the Warrants reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the Board of Directors of the Company.

4.7 Notices.

4.7.1 Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 4, the Company shall give prompt written notice thereof to the Warrant Agent, which notice shall set forth the Exercise Price after such adjustment and set forth a brief statement of the facts requiring such adjustment. The Company agrees that it will provide the Warrant Agent with any new or amended exercise terms. The Warrant Agent shall have no obligation under any Section of this Warrant Agreement to determine whether an adjustment made hereunder has occurred or are scheduled or contemplated to occur or to calculate any of the adjustments set forth in this Warrant Agreement.

4.7.2 Notices of Certain Events to Allow Exercise. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be mailed to each registered holder at its last address as it shall appear upon the Warrant Register of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; *provided* that the failure to mail such notice or any defect therein or in the mailing thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any of the subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The registered holder shall remain entitled to exercise a Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

4.8 Form of Warrant. The respective forms of the Five-Year Warrant and the 15-Month Warrant need not be changed because of any adjustment pursuant to this Section 4, and Warrants issued after such adjustment may state the same Warrant Price and the same number of shares as is stated in the applicable Warrants initially issued pursuant to this Warrant Agreement.

4.9 Calculations. All calculations under this Section 4 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 4, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

5. Transfer and Exchange of Warrants.

5.1 Registration of Transfer. The Warrant Agent shall register the transfer, from time to time, of any outstanding Warrant upon the Warrant Register, upon surrender of such Warrant for transfer, duly endorsed with signatures properly guaranteed and accompanied by appropriate instructions for transfer. Upon any such transfer, a new Warrant of the same class representing an equal aggregate number of Warrants shall be issued and the old Warrant shall be cancelled by the Warrant Agent. The Warrants so cancelled shall be delivered by the Warrant Agent to the Company from time to time upon the request and at the expense of the Company.

5.2 Procedure for Surrender of Warrants. Warrants may be surrendered to the Warrant Agent, together with a written request for exchange or transfer, and thereupon the Warrant Agent shall issue in exchange therefor one or more new Warrants of the same class as requested by the registered holder of the Warrants so surrendered, representing an equal aggregate number of Warrants; *provided, however*, that except as otherwise provided herein or in any Book-Entry Warrant Certificate, each Book-Entry Warrant Certificate may be transferred only in whole and only to the Depository, to another nominee of the Depository, to a successor depository, or to a nominee of a successor depository; *provided further, however*, that in the event that a Warrant surrendered for transfer bears a restrictive legend, the Warrant Agent shall not cancel such Warrant and issue new Warrants in exchange therefor until the Warrant Agent has received an opinion of counsel for the Company stating that such transfer may be made and indicating whether the new Warrants or Warrant Shares must also bear a restrictive legend. Upon any such registration of transfer, the Company shall execute, and the Warrant Agent shall countersign and deliver, in the name of the designated transferee a new Warrant Certificate or Warrant Certificates of any authorized denomination evidencing in the aggregate a like number of unexercised Warrants.

A party requesting transfer of Warrants must provide any evidence of authority that may be required by the Warrant Agent, including but not limited to, a signature guarantee from an eligible guarantor institution participating in a signature guarantee program approved by the Securities Transfer Association.

5.3 Fractional Warrants. The Warrant Agent shall not be required to effect any registration of transfer or exchange that will result in the issuance of a warrant certificate for a fraction of a warrant.

5.4 Service Charges. A registered holder shall not incur any service charge for any exchange or registration of transfer of Warrants.

5.5 Warrant Execution and Countersignature. The Warrant Agent is hereby authorized to countersign and to deliver, in accordance with the terms of this Warrant Agreement, the Warrants required to be issued pursuant to the provisions of this Section 5, and the Company, whenever required by the Warrant Agent, will supply the Warrant Agent with Warrants duly executed on behalf of the Company for such purpose.

6. Other Provisions Relating to Rights of Registered Holders of Warrants.

6.1 No Rights as Stockholder. Except as otherwise specifically provided herein, a registered holder, solely in its capacity as a holder of a Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of share capital of the Company for any purpose, nor shall anything contained in this Warrant Agreement be construed to confer upon a registered holder, solely in its capacity as the registered holder of a Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the registered holder of the Warrant Shares that it is then entitled to receive upon the due exercise of a Warrant. In addition, nothing contained in this Warrant Agreement shall be construed as imposing any liabilities on a registered holder to purchase any securities (upon exercise of a Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company. A Warrant does not entitle the registered holder thereof to any of the rights of a stockholder.

6.2 **Lost, Stolen or Destroyed Warrants.** The Warrant Agent shall issue replacement Warrants in a form mutually agreed to by Warrant Agent and the Company for those certificates alleged to have been lost, stolen or destroyed, upon receipt by Warrant Agent of an open penalty surety bond satisfactory to it and holding it and Company harmless and, at the Company's or the Rights Agent's request, reimbursement to the Company and the Warrant Agent of all reasonable expenses incidental thereto, absent notice to Warrant Agent that such certificates have been acquired by a bona fide purchaser. Warrant Agent may, at its option, issue replacement Warrants for mutilated certificates upon presentation thereof without such indemnity.

6.3 **Authorized Shares.** The Company covenants that, during the period the Warrants are outstanding, the Company shall at all times keep reserved for issuance under the Warrants a number of shares of Common Stock at least equal to 100% of the maximum number of shares of Common Stock as shall be necessary to satisfy the Company's obligation to issue shares of Common Stock under the Warrants then outstanding (without regard to any limitations on exercise) (the "**Required Reserve Amount**"); *provided* that at no time shall the number of shares of Common Stock reserved pursuant to this Section 6.3 be reduced other than in connection with any exercise of Warrants or such other event covered by Section 4.2. The Required Reserve Amount (including, without limitation, each increase in the number of shares so reserved) shall be allocated pro rata among the holders of the Warrants based on the number of shares of Common Stock issuable upon exercise of Warrants held by each holder thereof on the Issuance Date (without regard to any limitations on exercise) (the "**Authorized Share Allocation**"). In the event that a holder shall sell or otherwise transfer any of such holder's Warrants, each transferee shall be allocated a pro rata portion of such holder's Authorized Share Allocation. Any shares of Common Stock reserved and allocated to any Person that ceases to hold any Warrants shall be allocated to the remaining holders of Warrants, pro rata based on the number of shares of Common Stock issuable upon exercise of the Warrants then held by such holders thereof (without regard to any limitations on exercise). If at any time while the Warrants remains outstanding the Company does not have a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance the Required Reserve Amount (an "**Authorized Share Failure**"), then the Company shall promptly take all action reasonably necessary to increase the Company's authorized shares of Common Stock to an amount sufficient to allow the Company to reserve the Required Reserve Amount for the Warrants then outstanding. Without limiting the generality of the foregoing sentence, as soon as practicable after the date of the occurrence of an Authorized Share Failure, but in no event later than ninety (90) days after the occurrence of such Authorized Share Failure, the Company shall hold a meeting of its stockholders for the approval of an increase in the number of authorized shares of Common Stock. In connection with such meeting, the Company shall provide each stockholder with a proxy statement and shall use its reasonable best efforts to solicit its stockholders' approval of such increase in authorized shares of Common Stock and to cause its board of directors to recommend to the stockholders that they approve such proposal. Notwithstanding the foregoing, if any such time of an Authorized Share Failure, the Company is able to obtain the written consent of a majority of the shares of its issued and outstanding shares of Common Stock to approve the increase in the number of authorized shares of Common Stock, the Company may satisfy this obligation by obtaining such consent and submitting for filing with the SEC an Information Statement on Schedule 14C.

6.4 Noncircumvention. The Company hereby covenants and agrees that the Company will not, by amendment of its Certificate of Incorporation or Bylaws, or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issuance or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of the Warrants, and will at all times in good faith carry out all of the provisions of the Warrants and take all action as may be required to protect the rights of the Holder. Without limiting the generality of the foregoing, the Company (i) shall not increase the par value of any shares of Common Stock receivable upon the exercise of the Warrants above the Exercise Price then in effect, (ii) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable shares of Common Stock upon the exercise of the Warrants, and (iii) shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of the Warrants then outstanding (without regard to any limitations on exercise).

7. Concerning the Warrant Agent and Other Matters.

7.1 Payment of Taxes. The Company will from time to time promptly pay all taxes and charges that may be imposed upon the Company or the Warrant Agent in respect of the issuance, transfer or delivery of shares of Common Stock upon the exercise of Warrants, but the Company or the Warrant Agent shall not be obligated to pay any transfer taxes or charges in respect of the Warrants or such shares in connection with a transfer to a different holder. The Warrant Agent shall not register any transfer or issue or deliver any Warrant Certificate(s) unless or until the persons requesting the registration or issuance shall have paid to the Warrant Agent for the account of the Company the amount of such transfer tax and charges, if any, or shall have established to the reasonable satisfaction of the Company and the Warrant Agent that such transfer tax and charges, if any, have been paid.

7.2 Resignation, Consolidation, or Merger of Warrant Agent.

7.2.1 Appointment of Successor Warrant Agent. The Warrant Agent, or any successor to it hereafter appointed, may resign its duties and be discharged from all further duties and liabilities hereunder after giving thirty (30) days' notice in writing to the Company pursuant to the notice provisions in Section 8.2 hereof. In the event the transfer agency relationship, if any, in effect between the Company and the Warrant Agent terminates, the Warrant Agent will be deemed to have resigned automatically and be discharged from its duties under this Warrant Agreement as of the effective date of such termination. If the office of the Warrant Agent becomes vacant by resignation or incapacity to act or otherwise, the Company shall appoint in writing a successor Warrant Agent in place of the Warrant Agent. If the Company shall fail to make such appointment within a period of 30 days after it has been notified in writing of such resignation or incapacity by the Warrant Agent or by the holder of the Warrant (who shall, with such notice, submit his Warrant for inspection by the Company), then the holder of any Warrant may apply to the Supreme Court of the State of New York for the County of New York for the appointment of a successor Warrant Agent at the Company's cost. Any successor Warrant Agent, whether appointed by the Company or by such court, shall be authorized under applicable laws to exercise the powers of a transfer agent and subject to supervision or examination by federal or state authorities. After appointment, any successor Warrant Agent shall be vested with all the authority, powers, rights, immunities, duties, and obligations of its predecessor Warrant Agent with like effect as if originally named as Warrant Agent hereunder, without any further act or deed; but if for any reason it becomes necessary or appropriate, the predecessor Warrant Agent shall execute and deliver, at the expense of the Company, an instrument transferring to such successor Warrant Agent all the authority, powers, and rights of such predecessor Warrant Agent hereunder; and upon request of any successor Warrant Agent the Company shall make, execute, acknowledge, and deliver any and all instruments in writing for more fully and effectually vesting in and confirming to such successor Warrant Agent all such authority, powers, rights, immunities, duties, and obligations.

7.2.2 Notice of Successor Warrant Agent. In the event a successor Warrant Agent shall be appointed, the Company shall give notice thereof to the predecessor Warrant Agent and the transfer agent for the Common Stock not later than the effective date of any such appointment.

7.2.3 Merger or Consolidation of Warrant Agent. Any Person into which the Warrant Agent may be merged or converted or with which it may be consolidated or any Person resulting from any merger, conversion, or consolidation to which the Warrant Agent shall be a party, or any Person succeeding to the business of the Warrant Agent, shall be the successor Warrant Agent under this Warrant Agreement without any further act by the parties.

7.3 Fees and Expenses of Warrant Agent.

7.3.1 Remuneration. The Company agrees to pay the Warrant Agent reasonable remuneration for its services as such Warrant Agent hereunder in accordance with a fee schedule to be mutually agreed upon and will reimburse the Warrant Agent upon demand for all expenditures (including the reasonable expenses and fees of counsel) and disbursements that the Warrant Agent may reasonably incur in the preparation, delivery, negotiation, amendment, administration and execution of this Warrant Agreement and the exercise and performance of its duties hereunder.

7.3.2 Further Assurances. The Company shall perform, acknowledge and deliver or cause to be performed, acknowledged and delivered all such further and other acts, documents, instruments and assurances as may be reasonably required by the Warrant Agent for the carrying out or performing by the Warrant Agent of the provisions of this Warrant Agreement.

7.4 Liability of Warrant Agent.

7.4.1 Reliance on Company Statement. Whenever in the performance of its duties under this Warrant Agreement, the Warrant Agent shall deem it necessary or desirable that any fact or matter be proved or established by the Company prior to taking or suffering any action hereunder, such fact or matter (unless other evidence in respect thereof be herein specifically prescribed) may be deemed to be conclusively proved and established by a statement signed by the Chief Executive Officer, Chief Financial Officer, President or Chairman of the Board of Directors of the Company and delivered to the Warrant Agent. The Warrant Agent may rely upon, and be held harmless for such reliance, such statement for any action taken or suffered by it pursuant to the provisions of this Warrant Agreement, and shall not be held liable in connection with any delay in receiving such statement.

7.4.2 Indemnification. The Company covenants and agrees to indemnify and to hold the Warrant Agent harmless against any costs, expenses (including reasonable fees of its legal counsel), losses or damages, which may be paid, incurred or suffered by or to which it may become subject, arising from or out of, directly or indirectly, any claims or liability resulting from its actions or omissions as Warrant Agent pursuant hereto; *provided*, that such covenant and agreement does not extend to, and the Warrant Agent shall not be indemnified with respect to, such costs, expenses, losses and damages incurred or suffered by the Warrant Agent as a result of, or arising out of, its gross negligence, bad faith, or willful misconduct (each as determined in a final, non-appealable judgment of a court of competent jurisdiction).

7.4.3 Instructions. From time to time, the Company may provide the Warrant Agent with instructions concerning the services performed by the Warrant Agent hereunder. In addition, at any time the Warrant Agent may apply to any officer of the Company for instruction, and may consult with legal counsel for Warrant Agent or the Company with respect to any matter arising in connection with the services to be performed by the Warrant Agent under this Warrant Agreement. The Warrant Agent and its agents and subcontractors shall not be liable and shall be indemnified by the Company for any action taken or omitted by the Warrant Agent in reliance upon any Company instructions or upon the advice or opinion of such counsel. The Warrant Agent shall not be held to have notice of any change of authority of any person, until receipt of written notice thereof from the Company.

7.4.4 Exclusions. The Warrant Agent shall have no responsibility with respect to the validity of this Warrant Agreement or with respect to the validity or execution of any Warrant (except its countersignature thereof); nor shall it be responsible for any breach by the Company of any covenant or condition contained in this Warrant Agreement or in any Warrant; nor shall it be responsible to make calculations under Section 3.3.8 or any adjustments required under the provisions of Section 4 hereof or responsible for the manner, method, or amount of any such adjustment or the ascertaining of the existence of facts that would require any such adjustment; nor shall it by any act hereunder be deemed to make any representation or warranty as to the authorization or reservation of any shares of Common Stock to be issued pursuant to this Warrant Agreement or any Warrant or as to whether any shares of Common Stock will when issued be valid and fully paid and nonassessable.

7.4.5 Rights and Duties of Warrant Agent. (a) The Warrant Agent may consult with legal counsel (who may be legal counsel for the Company), and the opinion or advice of such counsel shall be full and complete authorization and protection to the Warrant Agent as to any action taken or omitted by it in accordance with such opinion or advice.

(b) The Warrant Agent shall not be liable for or by reason of any of the statements of fact or recitals contained in this Warrant Agreement or in the Warrant Certificates (except its countersignature thereof) or be required to verify the same, and all such statements and recitals are and shall be deemed to have been made by the Company only.

(c) The Warrant Agent shall not have any duty or responsibility in the case of the receipt of any written demand from any holder of Warrants with respect to any action or default by the Company, including, without limiting the generality of the foregoing, any duty or responsibility to initiate or attempt to initiate any proceedings at law or otherwise or to make any demand upon the Company.

(d) The Warrant Agent and any stockholder, director, officer or employee of the Warrant Agent may buy, sell or deal in any of the Warrants or other securities of the Company or become pecuniarily interested in any transaction in which the Company may be interested, or contract with or lend money to the Company or otherwise act as fully and freely as though it were not Warrant Agent under this Warrant Agreement. Nothing herein shall preclude the Warrant Agent from acting in any other capacity for the Company or for any other legal entity.

(e) The Warrant Agent may execute and exercise any of the rights or powers hereby vested in it or perform any duty hereunder either itself or by or through its attorney or agents, and the Warrant Agent shall not be answerable or accountable for any act, default, neglect or misconduct of any such attorney or agents or for any loss to the Company resulting from any such act, default, neglect or misconduct, absent gross negligence, bad faith or willful misconduct (each as determined by a final judgment of a court of competent jurisdiction) in the selection and continued employment thereof.

(f) The Warrant Agent may rely on and shall be held harmless and protected and shall incur no liability for or in respect of any action taken, suffered or omitted to be taken by it in reliance upon any certificate, statement, instrument, opinion, notice, letter, facsimile transmission, telegram or other document, or any security delivered to it, and believed by it to be genuine and to have been made or signed by the proper party or parties, or upon any written or oral instructions or statements from the Company with respect to any matter relating to its acting as Warrant Agent hereunder.

(g) The Warrant Agent shall not be obligated to expend or risk its own funds or to take any action that it believes would expose or subject it to expense or liability or to a risk of incurring expense or liability, unless it has been furnished with assurances of repayment or indemnity satisfactory to it.

(h) The Warrant Agent shall not be liable or responsible for any failure of the Company to comply with any of its obligations relating to any registration statement filed with the Commission or this Warrant Agreement, including without limitation obligations under applicable regulation or law.

(i) The Warrant Agent shall not be accountable or under any duty or responsibility for the use by the Company of any Warrants authenticated by the Warrant Agent and delivered by it to the Company pursuant to this Warrant Agreement or for the application by the Company of the proceeds of the issue and sale, or exercise, of the Warrants.

(j) The Warrant Agent shall act hereunder solely as agent for the Company, and its duties shall be determined solely by the express provisions hereof (and no duties or obligations shall be inferred or implied). The Warrant Agent shall not assume any obligations or relationship of agency or trust with any of the owners or holders of the Warrants.

(k) The Warrant Agent may rely on and be fully authorized and protected in acting or failing to act upon (a) any guaranty of signature by an “eligible guarantor institution” that is a member or participant in the Securities Transfer Agents Medallion Program or other comparable “signature guarantee program” or insurance program in addition to, or in substitution for, the foregoing; or (b) any law, act, regulation or any interpretation of the same even though such law, act, or regulation may thereafter have been altered, changed, amended or repealed.

(l) In the event the Warrant Agent believes any ambiguity or uncertainty exists hereunder or in any notice, instruction, direction, request or other communication, paper or document received by the Warrant Agent hereunder, the Warrant Agent, may, in its sole discretion, refrain from taking any action, and shall be fully protected and shall not be liable in any way to Company, the holder of any Warrant Certificate or Book-Entry Warrant Certificate or any other person or entity for refraining from taking such action, unless the Warrant Agent receives written instructions signed by the Company that eliminates such ambiguity or uncertainty to the satisfaction of Warrant Agent. The foregoing shall not eliminate any liability that the Company may have to any registered holder or holder of any Warrant Certificate or Book-Entry Warrant Certificate.

7.5 Limitation on Liability of Warrant Agent. Notwithstanding anything contained herein to the contrary, the Warrant Agent’s aggregate liability during any term of this Warrant Agreement with respect to, arising from, or arising in connection with this Warrant Agreement, or from all services provided or omitted to be provided under this Warrant Agreement, whether in contract, or in tort, or otherwise, is limited to, and shall not exceed, the amounts paid hereunder by the Company to Warrant Agent as fees and charges, but not including reimbursable expenses, during the twelve (12) months immediately preceding the event for which recovery from Warrant Agent is being sought. Sections 7.1, 7.3, 7.4, 7.5 and 8.15 shall survive the expiration of the Warrants, the termination of this Warrant Agreement and the resignation, replacement or removal of the Warrant Agent. The costs and expenses incurred in enforcing this right of indemnification shall be paid by the Company.

7.6 Acceptance of Agency. The Warrant Agent hereby accepts the agency established by this Warrant Agreement and agrees to perform the same upon the terms and conditions herein set forth and among other things, shall account promptly to the Company with respect to Warrants exercised and concurrently account for, and pay to the Company, all moneys received by the Warrant Agent for the purchase of shares of Common Stock through the exercise of Warrants.

7.7 Opinion of Counsel. The Company shall provide an opinion of counsel prior to the Issuance Date to set up a reserve of Warrants and related Common Stock. The opinion shall state that all Warrants or Common Stock, as applicable, are:

(1) registered under the 1933 Act, or are exempt from such registration, and all appropriate state securities law filings have been made with respect to the warrants or shares; and

(2) validly issued, fully paid and non-assessable.

8. Miscellaneous Provisions.

8.1 Successors. Subject to applicable securities laws, this Warrant Agreement and the Warrants and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of each registered holder. The provisions of this Warrant Agreement are intended to be for the benefit of any holder from time to time of this Warrant Agreement and shall be enforceable by the holder or holder of Warrant Shares.

8.2 Notices. Any notice, statement or demand authorized by this Warrant Agreement to be given or made by the Warrant Agent or by the holder of any Warrant to or on the Company shall be in writing and delivered by hand or sent by registered or certified mail or overnight courier service addressed (until another address is filed in writing by the Company with the Warrant Agent), or by facsimile transmission (as long as the sender maintains a fax delivery report confirming receipt by the recipient and is considered delivered when sent or if after normal business hours the next Business Day) or by email (as long as no bounce back is received by the sender), as follows:

Outlook Therapeutics, Inc.
7 Clarke Drive
Cranbury, NJ 08512
Attn: Lawrence A. Kenyon

Any notice, statement or demand authorized by this Warrant Agreement to be given or made by the holder of any Warrant or by the Company to or on the Warrant Agent shall be in writing and delivered by hand or overnight courier service addressed (until another address is filed in writing by the Warrant Agent with the Company) as follows:

American Stock Transfer & Trust Company, LLC
6201 15th Avenue
Brooklyn, NY 11219
Attn: Reorg Department

8.3 Jurisdiction. The validity, interpretation, and performance of this Warrant Agreement and of the Warrants shall be governed in all respects by the laws of the State of New York, without giving effect to conflicts of law principles that would result in the application of the substantive laws of another jurisdiction. The Company hereby agrees that any action, proceeding or claim against it arising out of or relating in any way to this Warrant Agreement shall be brought and enforced in the courts of the State of New York or the United States District Court for the Southern District of New York, and irrevocably submits to such jurisdiction, which jurisdiction shall be exclusive. The Company hereby waives any objection to such exclusive jurisdiction and that such courts represent an inconvenience forum. Any such process or summons to be served upon the Company may be served by transmitting a copy thereof by registered or certified mail, return receipt requested, postage prepaid, addressed to it at the address set forth in Section 8.2 hereof. Such mailing shall be deemed personal service and shall be legal and binding upon the Company in any action, proceeding or claim.

8.4 Persons Having Rights under this Warrant Agreement. Nothing in this Warrant Agreement expressed and nothing that may be implied from any of the provisions hereof is intended, or shall be construed, to confer upon, or give to, any person or corporation other than the parties hereto and the registered holders of the Warrants, any right, remedy, or claim under or by reason of this Warrant Agreement or of any covenant, condition, stipulation, promise, or agreement hereof. All covenants, conditions, stipulations, promises, and agreements contained in this Warrant Agreement shall be for the sole and exclusive benefit of the parties hereto and their successors and assigns and of the registered holders of the Warrants.

8.5 Examination of the Warrant Agreement. A copy of this Warrant Agreement shall be available at all reasonable times at the office of the Warrant Agent, for inspection by the registered holder of any Warrant. The Warrant Agent may require any such holder to submit his Warrant for inspection by it.

8.6 Counterparts. This Warrant Agreement may be executed in any number of original or facsimile counterparts and each of such counterparts shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same instrument. A signature to this Warrant Agreement transmitted electronically shall have the same authority, effect, and enforceability as an original signature.

8.7 Effect of Headings. The Section headings herein are for convenience only and are not part of this Warrant Agreement and shall not affect the interpretation thereof.

8.8 Amendments. All modifications or amendments, including any amendment to increase the Warrant Price or shorten the applicable Exercise Period, shall require the written consent of the registered holders of Warrants equal to at least 67% of the Warrant Shares issuable upon exercise of all then outstanding Warrants; *provided, however*, that any modification or amendment that applies only to the Five-Year Warrants or the 15-Month Warrants, as the case may be, shall require only the written consent of the registered holders of the applicable Warrants equal to at least 67% of the Warrant Shares issuable upon exercise of all then outstanding Warrants of the applicable class. As a condition precedent to the Warrant Agent's execution of any amendment, the Company shall deliver to the Warrant Agent a certificate from an Authorized Officer that states that the proposed amendment is in compliance with the terms of this Section 8.8. No consideration shall be offered or paid to any person to amend or consent to a waiver or modification of any provision of this Warrant Agreement unless the same consideration is also offered to all holders of the Warrants or, in the case of an amendment, waiver or modification that applies only to the Five-Year Warrants or the 15-Month Warrants, as the case may be, all holders of such Warrants. Notwithstanding anything in this Warrant Agreement to the contrary, the Warrant Agent shall not be required to execute any supplement or amendment to this Warrant Agreement that it has determined would adversely affect its own rights, duties, obligations or immunities under this Warrant Agreement. No supplement or amendment to this Warrant Agreement shall be effective unless duly executed by the Warrant Agent.

8.9 Severability. Wherever possible, each provision of this Warrant Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant Agreement shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant Agreement; *provided, however*, that if such prohibited and invalid provision shall adversely affect the rights, immunities, liabilities, duties or obligations of the Warrant Agent, the Warrant Agent shall be entitled to resign immediately upon written notice to the Company.

8.10 Restrictions. Each registered holder acknowledges that the Warrant Shares acquired upon the exercise of a Warrant, if not registered, and the registered holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

8.11 Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of a registered holder shall operate as a waiver of such right or otherwise prejudice such a registered holder's rights, powers or remedies. Without limiting any other provision of this Warrant Agreement or the Underwriting Agreement, if the Company willfully and knowingly fails to comply with any provision of this Warrant Agreement or the Warrants, which results in any material damages to a registered holder, the Company shall pay such registered holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the registered holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

8.12 Limitation of Liability. No provision hereof, in the absence of any affirmative action by the registered holder to exercise a Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of a registered holder, shall give rise to any liability of each registered holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

8.13 Remedies. The registered holders, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant Agreement. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant Agreement and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

8.14 Confidentiality. The Warrant Agent and the Company agree that all books, records, information and data pertaining to the business of the other party, including inter alia, personal, non-public warrant holder information, which are exchanged or received pursuant to the negotiation or the carrying out of this Warrant Agreement including the fees for services set forth in a mutually agreed upon schedule shall remain confidential, and shall not be voluntarily disclosed to any other person, except as may be required by law, including, without limitation, pursuant to subpoenas from state or federal government authorities (e.g., in divorce and criminal actions).

8.15 Consequential Damages. Neither party to this Warrant Agreement shall be liable to the other party for any consequential, indirect, special or incidental damages under any provisions of this Warrant Agreement or for any consequential, indirect, punitive, special or incidental damages arising out of any act or failure to act hereunder even if that party has been advised of or has foreseen the possibility of such damages.

8.16 Force Majeure. Notwithstanding anything to the contrary contained herein, the Warrant Agent will not be liable for any delays or failures in performance resulting from acts beyond its reasonable control including, without limitation, acts of God, terrorist acts, shortage of supply, breakdowns or malfunctions, interruptions or malfunction of computer facilities, or loss of data due to power failures or mechanical difficulties with information storage or retrieval systems, labor difficulties, war, or civil unrest.

9. Certain Definitions. For purposes of this Warrant Agreement, the following terms shall have the following meanings:

9.1 "Affiliate" means, with respect to any Person, any other Person that directly or indirectly controls, is controlled by, or is under common control with, such Person, it being understood for purposes of this definition that "control" of a Person means the power directly or indirectly either to vote 10% or more of the stock having ordinary voting power for the election of directors of such Person or direct or cause the direction of the management and policies of such Person whether by contract or otherwise.

9.2 "Approved Stock Plan" means any employee benefit plan that has been approved by a majority of the disinterested members of the Board of Directors of the Company, pursuant to which the Company's securities may be issued to any employee, officer or director for services provided to the Company.

9.3 "Attribution Parties" means, collectively, the following Persons and entities: (i) any investment vehicle, including, any funds, feeder funds or managed accounts, currently, or from time to time after the Issuance Date, directly or indirectly managed or advised by the Holder's investment manager or any of its Affiliates or principals, (ii) any direct or indirect Affiliates of the Holder or any of the foregoing, (iii) any Person acting or who could be deemed to be acting as a Group together with the Holder or any of the foregoing and (iv) any other Persons whose beneficial ownership of the Company's Common Stock would or could be aggregated with the Holder's and the other Attribution Parties for purposes of Section 13(d) of the 1934 Act. For clarity, the purpose of the foregoing is to subject collectively the Holder and all other Attribution Parties to the Maximum Percentage.

9.4 “Bid Price” means, for any security as of the particular time of determination, the bid price for such security on the Principal Market as reported by Bloomberg as of such time of determination, or, if the Principal Market is not the principal securities exchange or trading market for such security, the bid price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg as of such time of determination, or if the foregoing does not apply, the bid price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg as of such time of determination, or, if no bid price is reported for such security by Bloomberg as of such time of determination, the average of the bid prices of any market makers for such security as reported in the “pink sheets” by OTC Markets Group Inc. (formerly Pink Sheets LLC) as of such time of determination. If the Bid Price cannot be calculated for a security as of the particular time of determination on any of the foregoing bases, the Bid Price of such security as of such time of determination shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 11. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during such period.

9.5 “Black Scholes Value” means the value of the Warrants based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg determined as of the day immediately following the first public announcement of the applicable Change of Control, or, if the Change of Control is not publicly announced, the date the Change of Control is consummated, for pricing purposes and reflecting (i) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of the Warrants as of such date of request, (ii) an expected volatility equal to 100%, (iii) the underlying price per share used in such calculation shall be the greater of (a) the highest Weighted Average Price during the five (5) Trading Days prior to the closing of the Change of Control and (b) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Change of Control, (iv) a zero cost of borrow and (v) a 360 day annualization factor.

9.6 “Bloomberg” means Bloomberg Financial Markets.

9.7 “Business Day” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law or executive order to remain closed.

9.8 “Change of Control” means any Fundamental Transaction other than (i) any reorganization, recapitalization or reclassification of the Common Stock in which holders of the Company’s voting power immediately prior to such reorganization, recapitalization or reclassification continue after such reorganization, recapitalization or reclassification to hold publicly traded securities and, directly or indirectly, are, in all material respect, the holders of the voting power of the surviving entity (or entities with the authority or voting power to elect the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities) after such reorganization, recapitalization or reclassification, (ii) pursuant to a migratory merger effected solely for the purpose of changing the jurisdiction of incorporation of the Company or (iii) a merger in connection with a bona fide acquisition by the Company of any Person in which (x) the gross consideration paid, directly or indirectly, by the Company in such acquisition is not greater than 40% of the Company’s market capitalization as calculated on the date of the consummation of such merger and (y) such merger does not contemplate a change to the identity of a majority of the board of directors of the Company. Notwithstanding anything herein to the contrary, any transaction or series of transaction that, directly or indirectly, results in the Company or the Successor Entity not having Common Stock or common stock, as applicable, registered under the 1934 Act and listed on an Eligible Market shall be deemed a Change of Control.

9.9 “Closing Bid Price” and “Closing Sale Price” means, for any security as of any date, the last closing bid price and last closing trade price, respectively, for such security on the Principal Market, as reported by Bloomberg, or, if the Principal Market begins to operate on an extended hours basis and does not designate the closing bid price or the closing trade price, as the case may be, then the last bid price or the last trade price, respectively, of such security prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Principal Market is not the principal securities exchange or trading market for such security, the last closing bid price or last trade price, respectively, of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the last closing bid price or last trade price, respectively, of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no closing bid price or last trade price, respectively, is reported for such security by Bloomberg, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. (formerly Pink OTC Markets Inc.). If the Closing Bid Price or the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price or the Closing Sale Price, as the case may be, of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11. All such determinations to be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

9.10 “Common Stock” means (i) the Company’s shares of Common Stock and (ii) any share capital into which such Common Stock shall have been changed or any share capital resulting from a reclassification of such Common Stock.

9.11 “Control” (including the terms “controlling”, “controlled by” or “under common control with”) means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

9.12 “Convertible Securities” means any stock or securities (other than Options) directly or indirectly convertible into or exercisable or exchangeable for shares of Common Stock.

9.13 “Eligible Market” means The NASDAQ Capital Market, the NYSE American LLC, The NASDAQ Global Select Market, The NASDAQ Global Market or The New York Stock Exchange, Inc.

9.14 “Excluded Securities” means any shares of Common Stock issued or issuable, or deemed issued or issuable pursuant to Section 4.1: (i) in connection with any Approved Stock Plan, including, for the avoidance of doubt, the issuance of equity awards (including Options or Convertible Securities) pursuant to any such Approved Stock Plan after the Subscription Date, (ii) upon exercise of the Warrants, (iii) upon conversion, exercise, exchange or settlement of any Options or Convertible Securities that are outstanding on the day immediately preceding the Subscription Date, (iv) upon the issuance of “payment-in-kind” dividends of additional shares of the Company’s Series A-1 Convertible Preferred Stock, as contemplated by the terms thereof, and (v) pursuant to acquisitions, divestitures, licenses, partnerships, collaborations or strategic transactions approved by the Board of Directors or a majority of the members of a committee of directors established for such purposes; *provided* that any such issuance shall only be to a Person (or to the equity holders of a Person) that is, itself or through its subsidiaries, an operating company or an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities.

9.15 “Expiration Date” means the date that is sixty (60) months after the Issuance Date in the case of the Five-Year Warrants and on the date that is fifteen (15) months after the Issuance Date in the case of the 15-Month Warrants or, if any such date falls on a day other than a Business Day or on which trading does not take place on the Principal Market (a “Holiday”), the next date that is not a Holiday, as the same may be extended pursuant to Section 3.3.7.

9.16 “Fundamental Transaction” means (A) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Subject Entity, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company or any of its “significant subsidiaries” (as defined in Rule 1-02 of Regulation S-X) to one or more Subject Entities, or (iii) make, or allow one or more Subject Entities to make, or allow the Company to be subject to or have its shares of Common Stock be subject to or party to one or more Subject Entities making, a purchase, tender or exchange offer that is accepted by the holders of at least either (x) 50% of the outstanding shares of Common Stock, (y) 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all Subject Entities making or party to, or Affiliated with any Subject Entities making or party to, such purchase, tender or exchange offer were not outstanding; or (z) such number of shares of Common Stock such that all Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such purchase, tender or exchange offer, become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (iv) consummate a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with one or more Subject Entities whereby all such Subject Entities, individually or in the aggregate, acquire, either (x) at least 50% of the outstanding shares of Common Stock, (y) at least 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all the Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such stock purchase agreement or other business combination were not outstanding; or (z) such number of shares of Common Stock such that the Subject Entities become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (v) reorganize, recapitalize or reclassify its shares of Common Stock, (B) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, allow any Subject Entity individually or the Subject Entities in the aggregate to be or become the “beneficial owner” (as defined in Rule 13d-3 under the 1934 Act), directly or indirectly, whether through acquisition, purchase, assignment, conveyance, tender, tender offer, exchange, reduction in outstanding shares of Common Stock, merger, consolidation, business combination, reorganization, recapitalization, spin-off, scheme of arrangement, reorganization, recapitalization or reclassification or otherwise in any manner whatsoever, of either (x) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock, (y) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock not held by all such Subject Entities as of the Issuance Date calculated as if any shares of Common Stock held by all such Subject Entities were not outstanding, or (z) a percentage of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock or other equity securities of the Company sufficient to allow such Subject Entities to effect a statutory short form merger or other transaction requiring other stockholders of the Company to surrender their Common Stock without approval of the stockholders of the Company or (C) directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, the issuance of or the entering into any other instrument or transaction structured in a manner to circumvent, or that circumvents, the intent of this definition in which case this definition shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this definition to the extent necessary to correct this definition or any portion of this definition that may be defective or inconsistent with the intended treatment of such instrument or transaction.

9.17 “Group” means a “group” as that term is used in Section 13(d) of the 1934 Act and as defined in Rule 13d-5 thereunder.

9.18 “Merger Event” means any of the following: (i) a sale, lease or other transfer of all or substantially all assets of the Company, (ii) any merger or consolidation involving the Company in which the Company is not the surviving entity or in which the outstanding shares of the Company’s capital stock are otherwise converted into or exchanged for shares of capital stock or other securities or property of another entity, or (iii) any sale by holders of the outstanding voting equity securities of the Company in a single transaction or series of related transactions of shares constituting a majority of the outstanding combined voting power of the Company.

9.19 “Option Value” means the value of an Option based on the Black-Scholes Option Pricing model obtained from the “OV” function on Bloomberg determined as of the day of the most recent Closing Sale Price of the Common Stock prior to the public announcement of the pricing of the applicable Option (or, if the pricing is not publicly announced, on the most recent Closing Sale Price of the Common Stock prior to the pricing of the applicable Option) and reflecting (i) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of the applicable Option as of the applicable date of determination, (ii) an expected volatility equal to 50%, (iii) an underlying price per share equal to the most recent Closing Sale Price of the Common Stock prior to the public announcement of the pricing of the applicable Option (or, if the pricing is not publicly announced, on the most recent Closing Sale Price of the Common Stock prior to the pricing of the applicable Option), (iv) a zero cost of borrow and (v) a 360-day annualization factor.

9.20 “Options” means any rights, warrants or options to subscribe for or purchase shares of Common Stock or Convertible Securities.

9.21 “Parent Entity” of a Person means an entity that, directly or indirectly, controls the applicable Person, including such entity whose common stock or equivalent equity security is quoted or listed on an Eligible Market (or, if so elected by the Holder, any other market, exchange or quotation system), or, if there is more than one such Person or such entity, the Person or such entity designated by the Holder or in the absence of such designation, such Person or entity with the largest public market capitalization as of the date of consummation of the Fundamental Transaction or Change of Control.

9.22 “Person” means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity and a government or any department or agency thereof.

9.23 “Principal Market” means the principal securities exchange or securities market on which the Common Stock is then traded.

9.24 “Standard Settlement Period” means the standard settlement period, expressed in a number of Trading Days, on the Company’s primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise.

9.25 “Subject Entity” means any Person, Persons or Group or any Affiliate or associate of any such Person, Persons or Group.

9.26 “Successor Entity” means one or more Person or Persons (or, if so elected by the Holder, the Company or Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or Change of Control or one or more Person or Persons (or, if so elected by the Holder, the Company or the Parent Entity) with which such Fundamental Transaction or Change of Control shall have been entered into.

9.27 “Trading Day” means any day on which the Common Stock is traded on the Principal Market, or, if the Principal Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market on which the Common Stock is then traded.

9.28 “Transaction Documents” means any agreement entered into by and between the Company and the Holder, as applicable.

9.29 “Weighted Average Price” means, for any security as of any date, the dollar volume-weighted average price for such security on the Principal Market during the period beginning at 9:30:01 a.m., New York time (or such other time as the Principal Market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as the Principal Market publicly announces is the official close of trading), as reported by Bloomberg through its “Volume at Price” function or, if the foregoing does not apply, the dollar volume-weighted average price of such security in the over-the-counter market on the electronic bulletin board for such security during the period beginning at 9:30:01 a.m., New York time (or such other time as such market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as such market publicly announces is the official close of trading), as reported by Bloomberg, or, if no dollar volume-weighted average price is reported for such security by Bloomberg for such hours, the average of the highest Closing Bid Price and the lowest closing ask price of any of the market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. (formerly Pink OTC Markets Inc.). If the Weighted Average Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Weighted Average Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11 with the term “Weighted Average Price” being substituted for the term “Exercise Price.” All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

[Remainder of page intentionally left blank. Signature page follows.]

IN WITNESS WHEREOF, this Warrant Agreement has been duly executed by the parties hereto as of the day and year first above written.

OUTLOOK THERAPEUTICS, INC.

By: /s/ Lawrence A. Kenyon

Name: Lawrence A. Kenyon

Title: President, CEO & CFO

AMERICAN STOCK TRANSFER & TRUST COMPANY, LLC

By: /s/ Michael Legregin

Name: Michael Legregin

Title: Senior Vice President

[Signature Page to Warrant Agreement]

EXHIBIT A

[FORM OF FIVE-YEAR WARRANT GLOBAL CERTIFICATE]

OUTLOOK THERAPEUTICS, INC.

FIVE-YEAR WARRANT CERTIFICATE

THIS CERTIFIES THAT, for value received is the registered holder of a Warrant or Warrants (the “**Warrant**”) expiring the date sixty (60) months after the Initial Exercisability Date or, if such date falls on a day other than a Business Day or on which trading does not take place on the Principal Market (a “**Holiday**”), the next day that is not a Holiday, subject to extension in certain events (“**Expiration Date**”), to purchase 10,340,000 fully paid and non-assessable shares (“**Shares**”) of Common Stock, par value \$0.01 per share (“**Common Stock**”), of Outlook Therapeutics, Inc., a Delaware corporation (the “**Company**”). The Warrant entitles the holder thereof to purchase from the Company such number of shares of Common Stock at the price of \$2.90 per share (subject to adjustment), upon surrender of this Warrant Certificate and payment of the Warrant Price to American Stock Transfer & Trust Company, LLC (the “**Warrant Agent**”), at its offices designated for such purpose, but only subject to the conditions set forth herein and in the Warrant Agreement between the Company and the Warrant Agent (as may be amended from time to time, the “**Warrant Agreement**”). The Warrant Agreement provides that upon the occurrence of certain events, the Warrant Price and the number of Shares purchasable hereunder, set forth on the face hereof, may, subject to certain conditions, be adjusted. The term “**Warrant Price**” as used in this Warrant Certificate refers to the price per share of Common Stock at which Shares may be purchased at the time the Warrant is exercised. Capitalized terms used and not defined herein shall have the meanings set forth in the Warrant Agreement.

No fraction of a Share will be issued upon any exercise of a Warrant. If the holder of a Warrant would be entitled to receive a fraction of a Share upon any exercise of a Warrant, the Company shall pay a cash adjustment in respect of such fraction in an amount equal to such fraction multiplied by the Exercise Price.

Upon any exercise of the Warrant for less than the total number of full Shares provided for herein, there shall be issued to the registered holder hereof or the registered holder’s assignee a new Warrant Certificate covering the number of Shares for which the Warrant has not been exercised, *provided* that such holder has previously surrendered this Warrant to the Warrant Agent.

Upon surrender of the Warrant Certificate for transfer, properly endorsed with signatures properly guaranteed and accompanied by appropriate instructions for transfer, the Warrant Agent shall register the transfer. A new Warrant Certificate or Warrant Certificates evidencing in the aggregate a like number of Warrants shall be issued and the old Warrant Certificate shall be canceled.

Warrant Certificates, when surrendered to the Warrant Agent, may be transferred or exchanged in the manner and subject to the limitations provided in the Warrant Agreement, but without payment of any service charge, for another Warrant Certificate or Warrant Certificates evidencing in the aggregate a like number of Warrants.

The Company and the Warrant Agent may deem and treat the registered holder as the absolute owner of this Warrant Certificate (notwithstanding any notation of ownership or other writing hereon made by anyone), for the purpose of any exercise hereof, and for all other purposes, and neither the Company nor the Warrant Agent shall be affected by any notice to the contrary.

This Warrant Certificate does not entitle the registered holder to any of the rights of a stockholder of the Company.

OUTLOOK THERAPEUTICS, INC.

By: _____
Name:
Title:

COUNTERSIGNED:

AMERICAN STOCK TRANSFER & TRUST COMPANY, LLC
as Warrant Agent

By: _____
Authorized Officer

[Signature page to Warrant Certificate]

ELECTION TO PURCHASE FORM

(to be executed by the registered holder in order to exercise Warrants)

The undersigned registered holder irrevocably elects to exercise Warrants to purchase _____ shares of Common Stock represented by this Warrant Certificate and to purchase such shares of Common Stock issuable upon the exercise of such Warrants, and requests that such shares shall be issued in the name of

(PLEASE TYPE OR PRINT NAME AND ADDRESS)

(SOCIAL SECURITY OR TAX IDENTIFICATION NUMBER)

and be delivered to:

(PLEASE PRINT OR TYPE NAME AND ADDRESS)

and, at the sole election of the registered holder, if such number of Warrants shall not be all the Warrants evidenced by this Warrant Certificate, that a new Warrant Certificate for the balance of such Warrants be registered in the name of, and delivered to, the registered holder at the address stated below:

Dated: _____

(SIGNATURE)

(ADDRESS)

(TAX IDENTIFICATION NUMBER)

ASSIGNMENT

(to be executed by the registered holder in order to assign Warrants)

For Value Received, hereby sells, assigns, and transfers unto

(PLEASE TYPE OR PRINT NAME AND ADDRESS)

(SOCIAL SECURITY OR TAX IDENTIFICATION NUMBER)
and be delivered to:

(PLEASE PRINT OR TYPE NAME AND ADDRESS)

Warrants to purchase _____ shares of Common Stock represented by this Warrant Certificate, and hereby irrevocably constitutes and appoints
Attorney to transfer this Warrant Certificate on the books of the Company, with full power of substitution in the premises.

Dated: _____

(SIGNATURE)

The signature to the assignment of the Subscription Form must correspond to the name written upon the face of this Warrant Certificate in every particular, without alteration or enlargement or any change whatsoever, and must be guaranteed by a commercial bank or trust company or a member firm of the American Stock Exchange, New York Stock Exchange, Pacific Stock Exchange or Chicago Stock Exchange.

[Signature page to Warrant Certificate]

EXHIBIT B

[FORM OF 15-MONTH WARRANT GLOBAL CERTIFICATE]

OUTLOOK THERAPEUTICS, INC.

15-MONTH WARRANT CERTIFICATE

THIS CERTIFIES THAT, for value received is the registered holder of a Warrant or Warrants (the "**Warrant** ") expiring the date fifteen (15) months after the Initial Exercisability Date or, if such date falls on a day other than a Business Day or on which trading does not take place on the Principal Market (a "**Holiday**"), the next day that is not a Holiday, subject to extension in certain events ("**Expiration Date**"), to purchase 10,340,000 fully paid and non-assessable shares ("**Shares**") of Common Stock, par value \$0.01 per share ("**Common Stock**"), of Outlook Therapeutics, Inc., a Delaware corporation (the "**Company**"). The Warrant entitles the holder thereof to purchase from the Company such number of shares of Common Stock at the price of \$2.90 per share (subject to adjustment), upon surrender of this Warrant Certificate and payment of the Warrant Price to American Stock Transfer & Trust Company, LLC (the "**Warrant Agent**"), at its offices designated for such purpose, but only subject to the conditions set forth herein and in the Warrant Agreement between the Company and the Warrant Agent (as may be amended from time to time, the "**Warrant Agreement**"). The Warrant Agreement provides that upon the occurrence of certain events, the Warrant Price and the number of Shares purchasable hereunder, set forth on the face hereof, may, subject to certain conditions, be adjusted. The term "**Warrant Price**" as used in this Warrant Certificate refers to the price per share of Common Stock at which Shares may be purchased at the time the Warrant is exercised. Capitalized terms used and not defined herein shall have the meanings set forth in the Warrant Agreement.

No fraction of a Share will be issued upon any exercise of a Warrant. If the holder of a Warrant would be entitled to receive a fraction of a Share upon any exercise of a Warrant, the Company shall pay a cash adjustment in respect of such fraction in an amount equal to such fraction multiplied by the Exercise Price.

Upon any exercise of the Warrant for less than the total number of full Shares provided for herein, there shall be issued to the registered holder hereof or the registered holder's assignee a new Warrant Certificate covering the number of Shares for which the Warrant has not been exercised, *provided* that such holder has previously surrendered this Warrant to the Warrant Agent.

Upon surrender of the Warrant Certificate for transfer, properly endorsed with signatures properly guaranteed and accompanied by appropriate instructions for transfer, the Warrant Agent shall register the transfer. A new Warrant Certificate or Warrant Certificates evidencing in the aggregate a like number of Warrants shall be issued and the old Warrant Certificate shall be canceled.

Warrant Certificates, when surrendered to the Warrant Agent, may be transferred or exchanged in the manner and subject to the limitations provided in the Warrant Agreement, but without payment of any service charge, for another Warrant Certificate or Warrant Certificates evidencing in the aggregate a like number of Warrants.

[Signature page to Warrant Certificate]

The Company and the Warrant Agent may deem and treat the registered holder as the absolute owner of this Warrant Certificate (notwithstanding any notation of ownership or other writing hereon made by anyone), for the purpose of any exercise hereof, and for all other purposes, and neither the Company nor the Warrant Agent shall be affected by any notice to the contrary.

This Warrant Certificate does not entitle the registered holder to any of the rights of a stockholder of the Company.

OUTLOOK THERAPEUTICS, INC.

By: _____
Name:
Title:

COUNTERSIGNED:

AMERICAN STOCK TRANSFER & TRUST COMPANY, LLC
as Warrant Agent

By: _____
Authorized Officer

[Signature page to Warrant Certificate]

ELECTION TO PURCHASE FORM

(to be executed by the registered holder in order to exercise Warrants)

The undersigned registered holder irrevocably elects to exercise Warrants to purchase _____ shares of Common Stock represented by this Warrant Certificate and to purchase such shares of Common Stock issuable upon the exercise of such Warrants, and requests that such shares shall be issued in the name of

(PLEASE TYPE OR PRINT NAME AND ADDRESS)

(SOCIAL SECURITY OR TAX IDENTIFICATION NUMBER)

and be delivered to:

(PLEASE PRINT OR TYPE NAME AND ADDRESS)

and, at the sole election of the registered holder, if such number of Warrants shall not be all the Warrants evidenced by this Warrant Certificate, that a new Warrant Certificate for the balance of such Warrants be registered in the name of, and delivered to, the registered holder at the address stated below:

Dated: _____

(SIGNATURE)

(ADDRESS)

(TAX IDENTIFICATION NUMBER)

ASSIGNMENT

(to be executed by the registered holder in order to assign Warrants)

For Value Received, hereby sells, assigns, and transfers unto

(PLEASE TYPE OR PRINT NAME AND ADDRESS)

(SOCIAL SECURITY OR TAX IDENTIFICATION NUMBER)
and be delivered to:

(PLEASE PRINT OR TYPE NAME AND ADDRESS)

Warrants to purchase _____ shares of Common Stock represented by this Warrant Certificate, and hereby irrevocably constitutes and appoints
Attorney to transfer this Warrant Certificate on the books of the Company, with full power of substitution in the premises.

Dated: _____

(SIGNATURE)

The signature to the assignment of the Subscription Form must correspond to the name written upon the face of this Warrant Certificate in every particular, without alteration or enlargement or any change whatsoever, and must be guaranteed by a commercial bank or trust company or a member firm of the American Stock Exchange, New York Stock Exchange, Pacific Stock Exchange or Chicago Stock Exchange.

Exhibit C

[FORM OF CERTIFICATED FIVE-YEAR WARRANT]

OUTLOOK THERAPEUTICS, INC

FIVE-YEAR WARRANT TO PURCHASE COMMON STOCK

Warrant No.: _____

Number of Shares of Common Stock: _____

Date of Issuance: April 12, 2019 (“**Issuance Date**”)

Outlook Therapeutics, Inc., a company organized under the laws of Delaware (the “**Company**”), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [HOLDER], the registered holder hereof or its permitted assigns (the “**Holder**”), is entitled, subject to the terms set forth below, to purchase from the Company, at the Exercise Price (as defined below) then in effect, at any time or times on or after April 12, 2019 (the “**Initial Exercisability Date**”), but not after 11:59 p.m., New York time, on the Expiration Date, (as defined below), _____(_____) fully paid non-assessable shares of Common Stock (as defined below), subject to adjustment as provided herein (the “**Warrant Shares**”). Except as otherwise defined herein, capitalized terms in this Warrant to Purchase Common Stock (including any Warrants to Purchase Common Stock issued in exchange, transfer or replacement hereof, this “**Warrant**”), shall have the meanings set forth in Section 16. This Warrant is one of the Five-Year Warrants to Purchase Common Stock (the “**Warrants**”) issued pursuant to (i) that certain Underwriting Agreement, dated as of April 10, 2019 (the “**Subscription Date**”) by and between the Company and Oppenheimer & Co. Inc. as representative of the several underwriters named therein, (ii) the Company’s Registration Statement on Form S-1 (File number 333-229761) (together with the additional registration statement filed by the Company pursuant to Rule 462(b) of the 1933 Act (as defined below) the “**Registration Statement**”). This Warrant shall initially be issued and maintained in the form of a security held in book-entry form and the Depository Trust Company or its nominee (“**DTC**”) shall initially be the sole registered holder of this Warrant, subject to a Holder’s right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agent Agreement, in which case this sentence shall not apply.

1. EXERCISE OF WARRANT.

(a) Mechanics of Exercise. Subject to the terms and conditions hereof (including, without limitation, the limitations set forth in Section 1(f)), this Warrant may be exercised by the Holder at any time or times on or after the Initial Exercisability Date, in whole or in part, by delivery (whether via facsimile, electronic mail or otherwise) of a written notice, in the form attached hereto as Exhibit A (the “**Exercise Notice**”), of the Holder’s election to exercise this Warrant. Within one (1) Trading Day following the delivery of the Exercise Notice, the Holder shall make payment to the Company of an amount equal to the Exercise Price in effect on the date of such exercise multiplied by the number of Warrant Shares as to which this Warrant is being exercised (the “**Aggregate Exercise Price**”) in cash by wire transfer of immediately available funds or, if the provisions of Section 1(d) are applicable, by notifying the Company that this Warrant is being exercised pursuant to a Cashless Exercise (as defined in Section 1(d)). The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder, nor shall any ink-original signature or medallion guarantee (or other type of guarantee or notarization) with respect to any Exercise Notice be required. Execution and delivery of the Exercise Notice with respect to less than all of the Warrant Shares shall have the same effect as cancellation of the original Warrant and issuance of a new Warrant evidencing the right to purchase the remaining number of Warrant Shares and the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Exercise Notice is delivered to the Company. On or before the first (1st) Trading Day following the date on which the Holder has delivered the applicable Exercise Notice, the Company shall transmit by facsimile or electronic mail an acknowledgment of confirmation of receipt of the Exercise Notice, in the form attached to the Exercise Notice, to the Holder and the Company’s transfer agent (the “**Transfer Agent**”). So long as the Holder delivers the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the earlier of (i) the second (2nd) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period, in each case following the date on which the Exercise Notice has been delivered to the Company, or, if the Holder does not deliver the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the first (1st) Trading Day following the date on which the Aggregate Exercise Price (or notice of a Cashless Exercise) is delivered (such earlier date, or if later, the earliest day on which the Company is required to deliver Warrant Shares pursuant to this Section 1(a), the “**Share Delivery Date**”), the Company shall (X) *provided* that the Transfer Agent is participating in The Depository Trust Company (“**DTC**”) Fast Automated Securities Transfer Program, credit such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system, or (Y) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, issue and dispatch by overnight courier to the address or e-mail address as specified in the Exercise Notice, evidence of credit of book-entry shares, registered in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise. If the Company fails for any reason to deliver to such registered holder or Participant, as the case may be, the Warrant Shares subject to an exercise notice by the Share Delivery Date, the Company shall pay to the registered holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the Weighted Average Price of the Common Stock on the date of the applicable exercise notice), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Share Delivery Date until such Warrant Shares are delivered or the registered holder rescinds such exercise. The Company shall be responsible for all fees and expenses of the Transfer Agent and all fees and expenses with respect to the issuance of Warrant Shares via DTC, if any, including without limitation for same day processing. Upon delivery of the Exercise Notice, the Holder shall be deemed for all corporate purposes to have become the holder of record and beneficial owner of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date such Warrant Shares are credited to the Holder’s DTC account or the date of delivery of the certificates evidencing such Warrant Shares, as the case may be. If this Warrant is physically delivered to the Company in connection with any exercise pursuant to this Section 1(a) and the number of Warrant Shares represented by this Warrant submitted for exercise is greater than the number of Warrant Shares being acquired upon an exercise, then the Company shall as soon as practicable and in no event later than three (3) Trading Days after any exercise and at its own expense, issue and deliver to the Holder (or its designee) a new Warrant (in accordance with Section 7(d)) representing the right to purchase the number of Warrant Shares issuable immediately prior to such exercise under this Warrant, less the number of Warrant Shares with respect to which this Warrant is exercised. No fractional Warrant Shares are to be issued upon the exercise of this Warrant, but rather the Company shall pay a cash adjustment equal to such fraction multiplied by the Exercise Price. The Company shall pay any and all transfer, stamp, issuance and similar taxes, costs and expenses (including, without limitation, fees and expenses of the Transfer Agent) that may be payable with respect to the issuance and delivery of Warrant Shares upon exercise of this Warrant. The Company’s obligations to issue and deliver Warrant Shares in accordance with the terms and subject to the conditions hereof are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination; provided, however, that the Company shall not be required to deliver Warrant Shares with respect to an exercise prior to the Holder’s delivery of the Aggregate Exercise Price (or notice of a Cashless Exercise) with respect to such exercise.

(b) Exercise Price. For purposes of this Warrant, “**Exercise Price**” means \$2.90 per share, subject to adjustment as provided herein.

(c) Company’s Failure to Timely Deliver Securities. If either (I) the Company shall fail for any reason or for no reason on or prior to the applicable Share Delivery Date, if (x) the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, to issue to the Holder by book-entry credit the number of shares of Common Stock to which the Holder is entitled and register such Common Stock on the Company’s share register or (y) the Transfer Agent is participating in the DTC Fast Automated Securities Transfer Program, to credit the Holder’s balance account with DTC, for such number of shares of Common Stock to which the Holder is entitled upon the Holder’s exercise of this Warrant or (II) a registration statement (which may be the Registration Statement) covering the issuance or resale of the Warrant Shares that are the subject of the Exercise Notice (the “**Exercise Notice Warrant Shares**”) is not available for the issuance or resale, as applicable, of such Exercise Notice Warrant Shares and (x) the Company fails to promptly, but in no event later than one (1) Business Day after such registration statement becomes unavailable, to so notify the Holder and (y) the Company is unable to deliver the Exercise Notice Warrant Shares electronically without any restrictive legend by crediting such aggregate number of Exercise Notice Warrant Shares to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system (the event described in the immediately foregoing clause (II) is hereinafter referred to as a “**Notice Failure**” and, together with the event described in clause (I) above, an “**Exercise Failure**”), then, in addition to all other remedies available to the Holder, if on or prior to the applicable Share Delivery Date either (I) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, the Company shall fail to issue by book-entry credit to the Holder and register such shares of Common Stock on the Company’s share register or, if the Transfer Agent is participating in the DTC Fast Automated Securities Transfer Program, credit the Holder’s balance account with DTC for the number of shares of Common Stock to which the Holder is entitled upon the Holder’s exercise hereunder or pursuant to the Company’s obligation pursuant to clause (ii) below or (II) a Notice Failure occurs, and if on or after such Trading Day the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder’s brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares that the Holder anticipated receiving upon such exercise from the Company (a “**Buy-In**”), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder’s total purchase price (including brokerage commissions and other out-of-pocket expenses, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder’s right to pursue any other remedies available to it hereunder, at law or in equity, including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company’s failure to timely credit by book entry the Warrant Shares (or to electronically deliver such Warrant Shares) upon the exercise of this Warrant as required pursuant to the terms hereof. While this Warrant is outstanding, the Company shall cause its transfer agent to participate in the DTC Fast Automated Securities Transfer Program. In addition to the foregoing rights, (i) if the Company fails to deliver the applicable number of Warrant Shares upon an exercise pursuant to Section 1 by the applicable Share Delivery Date, then the Holder shall have the right to rescind such exercise in whole or in part and retain and/or have the Company return, as the case may be, any portion of this Warrant that has not been exercised pursuant to such Exercise Notice; *provided* that the rescission of an exercise shall not affect the Company’s obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 1(c) or otherwise, and (ii) if a registration statement (which may be the Registration Statement) covering the issuance or resale of the Warrant Shares that are subject to an Exercise Notice is not available for the issuance or resale, as applicable, of such Exercise Notice Warrant Shares and the Holder has submitted an Exercise Notice prior to receiving notice of the non-availability of such registration statement and the Company has not already delivered the Warrant Shares underlying such Exercise Notice electronically without any restrictive legend by crediting such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system, the Holder shall have the option, by delivery of notice to the Company, to (x) rescind such Exercise Notice in whole or in part and retain or have returned, as the case may be, any portion of this Warrant that has not been exercised pursuant to such Exercise Notice; *provided* that the rescission of an Exercise Notice shall not affect the Company’s obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 1(c) or otherwise, and/or (y) switch some or all of such Exercise Notice from a cash exercise to a Cashless Exercise.

(d) Cashless Exercise. Notwithstanding anything contained herein to the contrary, if a registration statement (which may be the Registration Statement) covering the issuance or resale of the Exercise Notice Warrant Shares is not available for the issuance or resale, as applicable, of such Exercise Notice Warrant Shares, the Holder may, in its sole discretion, exercise this Warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to the Company upon such exercise in payment of the Aggregate Exercise Price, elect instead to receive upon such exercise the "Net Number" of shares of Common Stock determined according to the following formula (a "**Cashless Exercise**"):

$$\text{Net Number} = \frac{(A \times B) - (A \times C)}{B}$$

For purposes of the foregoing formula:

A= the total number of shares with respect to which this Warrant is then being exercised.

B= as applicable: (i) the Closing Sale Price of the Common Stock on the Trading Day immediately preceding the date of the applicable Exercise Notice if such Exercise Notice is (1) both executed and delivered pursuant to Section 1(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 1(a) hereof on a Trading Day prior to the opening of "regular trading hours" (as defined in Rule 600(b)(64) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the Weighted Average Price on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock as of the time of the Holder's execution of the applicable Exercise Notice if such Exercise Notice is executed during "regular trading hours" on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of "regular trading hours" on a Trading Day) pursuant to Section 1(a) hereof or (iii) the Closing Sale Price of the Common Stock on the date of the applicable Exercise Notice if the date of such Exercise Notice is a Trading Day and such Exercise Notice is both executed and delivered pursuant to Section 1(a) hereof after the close of "regular trading hours" on such Trading Day.

C= the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

The Company agrees to make all calculations related to a Cashless Exercise and will provide the Warrant Agent with issuance instructions.

If Warrant Shares are issued in such a cashless exercise, the Company acknowledges and agrees that in accordance with Section 3(a)(9) of the 1933 Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised, and the holding period of the Warrants being exercised may be tacked on to the holding period of the Warrant Shares. The Company agrees not to take any position contrary to this Section 1(d). Without limiting the rights of a Holder to receive Warrant Shares on a "cashless exercise," and to receive the cash payments contemplated pursuant to Sections 1(a), 1(c) and 4(b), in no event will the Company be required to pay to the Holder and cash or other consideration or otherwise net cash settle a Warrant exercise.

(e) Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the Holder the number of Warrant Shares that are not disputed and resolve such dispute in accordance with Section 11.

(f) **Beneficial Ownership.** Notwithstanding anything to the contrary contained herein, the Company shall not effect the exercise of any portion of this Warrant, and the Holder shall not have the right to exercise any portion of this Warrant, pursuant to the terms and conditions of this Warrant and any such exercise shall be null and void and treated as if never made, to the extent that after giving effect to such exercise, the Holder together with the other Attribution Parties collectively would beneficially own in excess of [4.99%][9.99%] (the “**Maximum Percentage**”) of the number of shares of Common Stock outstanding immediately after giving effect to such exercise. For purposes of the foregoing sentence, the aggregate number of shares of Common Stock beneficially owned by the Holder and the other Attribution Parties shall include the number of shares of Common Stock held by the Holder and all other Attribution Parties plus the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which the determination of such sentence is being made, but shall exclude the number of shares of Common Stock that would be issuable upon (A) exercise of the remaining, unexercised portion of this Warrant beneficially owned by the Holder or any of the other Attribution Parties and (B) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company (including, without limitation, any convertible notes or convertible preferred stock or warrants, including the other Warrants) beneficially owned by the Holder or any other Attribution Party subject to a limitation on conversion or exercise analogous to the limitation contained in this Section 1(f). For purposes of this Section 1(f), beneficial ownership shall be calculated in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the “**1934 Act**”). For purposes of this Warrant, in determining the number of outstanding shares of Common Stock the Holder may acquire upon the exercise of this Warrant without exceeding the Maximum Percentage, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company’s most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q and Current Reports on Form 8-K or other public filing with the Securities and Exchange Commission (the “**SEC**”), as the case may be, (y) a more recent public announcement by the Company or (z) any other written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding (the “**Reported Outstanding Share Number**”). If the Company receives an Exercise Notice from the Holder at a time when the actual number of outstanding shares of Common Stock is less than the Reported Outstanding Share Number, the Company shall (i) notify the Holder in writing of the number of shares of Common Stock then outstanding and, to the extent that such Exercise Notice would otherwise cause the Holder’s beneficial ownership, as determined pursuant to this Section 1(f), to exceed the Maximum Percentage, the Holder must notify the Company of a reduced number of Warrant Shares to be purchased pursuant to such Exercise Notice (the number of shares by which such purchase is reduced, the “**Reduction Shares**”) and (ii) as soon as reasonably practicable, the Company shall return to the Holder any exercise price paid by the Holder for the Reduction Shares. For any reason at any time, upon the written or oral request of the Holder, the Company shall within one (1) Business Day confirm orally and in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder and any other Attribution Party since the date as of which the Reported Outstanding Share Number was reported. In the event that the issuance of Common Stock to the Holder upon exercise of this Warrant results in the Holder and the other Attribution Parties being deemed to beneficially own, in the aggregate, more than the Maximum Percentage of the number of outstanding shares of Common Stock (as determined under Section 13(d) of the 1934 Act), the number of shares so issued by which the Holder’s and the other Attribution Parties’ aggregate beneficial ownership exceeds the Maximum Percentage (the “**Excess Shares**”) shall be deemed null and void and shall be cancelled ab initio, and the Holder shall not have the power to vote or to transfer the Excess Shares. As soon as reasonably practicable after the issuance of the Excess Shares has been deemed null and void, the Company shall return to the Holder the exercise price paid by the Holder for the Excess Shares. Upon delivery of a written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 9.99% as specified in such notice; *provided* that (i) any such increase in the Maximum Percentage will not be effective until the sixty-first (61st) day after such notice is delivered to the Company and (ii) any such increase or decrease will apply only to the Holder and the other Attribution Parties and not to any other holder of Warrants that is not an Attribution Party of the Holder. For purposes of clarity, the shares of Common Stock issuable pursuant to the terms of this Warrant in excess of the Maximum Percentage shall not be deemed to be beneficially owned by the Holder for any purpose including for purposes of Section 13(d) or Rule 16a-1(a)(1) of the 1934 Act. No prior inability to exercise this Warrant pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 1(f) to the extent necessary to correct this paragraph or any portion of this paragraph that may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 1(f) or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of this Warrant.

(g) Required Reserve Amount. So long as this Warrant remains outstanding, the Company shall at all times keep reserved for issuance under this Warrant a number of shares of Common Stock at least equal to 100% of the maximum number of shares of Common Stock as shall be necessary to satisfy the Company's obligation to issue shares of Common Stock under the Warrants then outstanding (without regard to any limitations on exercise) (the "**Required Reserve Amount**"); *provided* that at no time shall the number of shares of Common Stock reserved pursuant to this Section 1(g) be reduced other than in connection with any exercise of Warrants or such other event covered by Section 2(c) below. The Required Reserve Amount (including, without limitation, each increase in the number of shares so reserved) shall be allocated pro rata among the holders of the Warrants based on the number of shares of Common Stock issuable upon exercise of Warrants held by each holder thereof on the Issuance Date (without regard to any limitations on exercise) (the "**Authorized Share Allocation**"). In the event that a holder shall sell or otherwise transfer any of such holder's Warrants, each transferee shall be allocated a pro rata portion of such holder's Authorized Share Allocation. Any shares of Common Stock reserved and allocated to any Person that ceases to hold any Warrants shall be allocated to the remaining holders of Warrants, pro rata based on the number of shares of Common Stock issuable upon exercise of the Warrants then held by such holders thereof (without regard to any limitations on exercise).

(h) Insufficient Authorized Shares. If at any time while this Warrant remains outstanding the Company does not have a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance the Required Reserve Amount (an "**Authorized Share Failure**"), then the Company shall promptly take all action reasonably necessary to increase the Company's authorized shares of Common Stock to an amount sufficient to allow the Company to reserve the Required Reserve Amount for this Warrant then outstanding. Without limiting the generality of the foregoing sentence, as soon as practicable after the date of the occurrence of an Authorized Share Failure, but in no event later than ninety (90) days after the occurrence of such Authorized Share Failure, the Company shall hold a meeting of its stockholders for the approval of an increase in the number of authorized shares of Common Stock. In connection with such meeting, the Company shall provide each stockholder with a proxy statement and shall use its reasonable best efforts to solicit its stockholders' approval of such increase in authorized shares of Common Stock and to cause its board of directors to recommend to the stockholders that they approve such proposal. Notwithstanding the foregoing, if any such time of an Authorized Share Failure, the Company is able to obtain the written consent of a majority of the shares of its issued and outstanding shares of Common Stock to approve the increase in the number of authorized shares of Common Stock, the Company may satisfy this obligation by obtaining such consent and submitting for filing with the SEC an Information Statement on Schedule 14C.

2. ADJUSTMENT OF EXERCISE PRICE AND NUMBER OF WARRANT SHARES. The Exercise Price and the number of Warrant Shares shall be adjusted from time to time as follows:

(a) Adjustment Upon Issuance of Common Stock. If and whenever on or after the Subscription Date, the Company issues or sells, or in accordance with this Section 2 is deemed to have issued or sold, any shares of Common Stock (including the issuance or sale of shares of Common Stock owned or held by or for the account of the Company, but excluding shares of Common Stock deemed to have been issued or sold by the Company in connection with any Excluded Securities) for a consideration per share (the “**New Issuance Price**”) less than a price (the “**Applicable Price**”) equal to the Exercise Price in effect immediately prior to such issuance or sale or deemed issuance or sale (the foregoing a “**Dilutive Issuance**”), then immediately after such Dilutive Issuance, the Exercise Price then in effect shall be reduced to an amount equal to the New Issuance Price. For purposes of determining the adjusted Exercise Price under this Section 2(a), the following shall be applicable:

(i) Issuance of Options. If the Company in any manner grants or sells any Options and the lowest price per share for which one share of Common Stock is issuable upon the exercise of any such Options or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Options is less than the Applicable Price, then such share of Common Stock shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the granting or sale of such Options for such price per share. For purposes of this Section 2(a)(i), the “lowest price per share for which one share of Common Stock is issuable upon the exercise of any such Options or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Options” shall be equal to the sum of the lowest amounts of consideration (if any) received or receivable by the Company with respect to any one share of Common Stock upon the granting or sale of the Options, upon exercise of the Options and upon conversion, exercise or exchange of any Convertible Security issuable upon exercise of such Options less any consideration paid or payable by the Company with respect to such one share of Common Stock upon the granting or sale of such Options, upon exercise of such Options and upon conversion exercise or exchange of any Convertible Security issuable upon exercise of such Options. No further adjustment of the Exercise Price shall be made upon the actual issuance of such shares of Common Stock or of such Convertible Securities upon the exercise of such Options or upon the actual issuance of such shares of Common Stock upon conversion, exercise or exchange of such Convertible Securities.

(ii) Issuance of Convertible Securities. If the Company in any manner issues or sells any Convertible Securities and the lowest price per share for which one share of Common Stock is issuable upon the conversion, exercise or exchange thereof is less than the Applicable Price, then such share of Common Stock shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the issuance or sale of such Convertible Securities for such price per share. For the purposes of this Section 2(a)(ii), the “lowest price per share for which one share of Common Stock is issuable upon the conversion, exercise or exchange thereof” shall be equal to the sum of the lowest amounts of consideration (if any) received or receivable by the Company with respect to any one share of Common Stock upon the issuance or sale of the Convertible Security and upon conversion, exercise or exchange of such Convertible Security less any consideration paid or payable by the Company with respect to such one share of Common Stock upon the issuance or sale of such Convertible Security and upon conversion, exercise or exchange of such Convertible Security. No further adjustment of the Exercise Price shall be made upon the actual issuance of such shares of Common Stock upon conversion, exercise or exchange of such Convertible Securities, and if any such issuance or sale of such Convertible Securities is made upon exercise of any Options for which adjustment of the Exercise Price has been or is to be made pursuant to other provisions of this Section 2(a), no further adjustment of the Exercise Price shall be made by reason of such issuance or sale.

(iii) Change in Option Price or Rate of Conversion. If the purchase price provided for in any Options, the additional consideration, if any, payable upon the issue, conversion, exercise or exchange of any Convertible Securities, or the rate at which any Convertible Securities are convertible into or exercisable or exchangeable for shares of Common Stock increases or decreases at any time pursuant to the terms of such Options or Convertible Securities, the Exercise Price in effect at the time of such increase or decrease shall be adjusted to the Exercise Price, that would have been in effect at such time had such Options or Convertible Securities provided for such increased or decreased purchase price, additional consideration or increased or decreased conversion rate, as the case may be, at the time initially granted, issued or sold. For purposes of this Section 2(a)(iii), if the terms of any Option or Convertible Security that was outstanding as of the Subscription Date are increased or decreased in the manner described in the immediately preceding sentence, then such Option or Convertible Security and the shares of Common Stock deemed issuable upon exercise, conversion or exchange thereof shall be deemed to have been issued as of the date of such increase or decrease. No adjustment pursuant to this Section 2(a) shall be made if such adjustment would result in an increase of the Exercise Price then in effect. For the avoidance of doubt, no adjustment in the Exercise Price shall be made pursuant to this Section 2(a)(iii) as a result of any modification of the terms of any Options or Convertible Securities after their date of issuance.

(iv) Calculation of Consideration Received. In case any Option is issued in connection with the issuance or sale of other securities of the Company, together comprising one integrated transaction, (x) the Options will be deemed to have been issued for the Option Value of such Options and (y) the other securities issued or sold in such integrated transaction shall be deemed to have been issued or sold for the difference of (I) the aggregate consideration received by the Company less any consideration paid or payable by the Company pursuant to the terms of such other securities of the Company, less (II) the Option Value of such Options; *provided*, that if the value determined pursuant to clause (y) above would result in a value less than the par value of the Common Stock, then the other securities issued or sold in such integrated transaction shall be deemed to have been issued or sold for the par value of the Common Stock. If any shares of Common Stock, Options or Convertible Securities are issued or sold or deemed to have been issued or sold for cash, the consideration received therefor will be deemed to be the net amount received by the Company therefor. If any shares of Common Stock, Options or Convertible Securities are issued or sold for a consideration other than cash, the amount of such consideration received by the Company will be the fair value of such consideration, except where such consideration consists of publicly traded securities, in which case the amount of consideration received by the Company will be the Closing Sale Price of such publicly traded securities on the date of receipt of such publicly traded securities. If any shares of Common Stock, Options or Convertible Securities are issued to the owners of the non-surviving entity in connection with any merger in which the Company is the surviving entity, the amount of consideration therefor will be deemed to be the fair value of such portion of the net assets and business of the non-surviving entity as is attributable to such shares of Common Stock, Options or Convertible Securities, as the case may be. The fair value of any consideration other than cash or publicly traded securities will be determined jointly by the Company and the Required Holders. If such parties are unable to reach agreement within ten (10) days after the occurrence of an event requiring valuation (the “**Valuation Event**”), the fair value of such consideration will be determined within five (5) Business Days after the tenth (10th) day following the Valuation Event by an independent, reputable appraiser jointly selected by the Company and the Required Holders. The determination of such appraiser shall be final and binding upon all parties absent manifest error and the fees and expenses of such appraiser shall be borne by the Company.

(v) Record Date. If the Company takes a record of the holders of Common Stock for the purpose of entitling them (A) to receive a dividend or other distribution payable in shares of Common Stock, Options or in Convertible Securities or (B) to subscribe for or purchase shares of Common Stock, Options or Convertible Securities, then such record date will be deemed to be the date of the issuance or sale of the shares of Common Stock deemed to have been issued or sold upon the declaration of such dividend or the making of such other distribution or the date of the granting of such right of subscription or purchase, as the case may be.

(vi) No Modification. So long as any of the Warrants are outstanding, the Company shall not amend, modify or change the terms of any Options or Convertible Securities (whether issued on, prior or after the Subscription Date) to lower the exercise price or conversion price thereof.

(b) Voluntary Adjustment by Company. The Company may at any time during the term of this Warrant reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the Board of Directors of the Company.

(c) Adjustment upon Subdivision or Combination of Common Stock. If the Company at any time on or after the Subscription Date subdivides (by any stock split, stock dividend, recapitalization or otherwise) one or more classes of its outstanding shares of Common Stock into a greater number of shares, the Exercise Price in effect immediately prior to such subdivision will be proportionately reduced and the number of Warrant Shares will be proportionately increased. If the Company at any time on or after the Subscription Date combines (by combination, reverse stock split or otherwise) one or more classes of its outstanding shares of Common Stock into a smaller number of shares, the Exercise Price in effect immediately prior to such combination will be proportionately increased and the number of Warrant Shares will be proportionately decreased. Any adjustment under this Section 2(c) shall become effective at the close of business on the date the subdivision or combination becomes effective.

3. RIGHTS UPON DISTRIBUTION OF ASSETS. In addition to any adjustments pursuant to Section 2 above, if, on or after the Subscription Date and on or prior to the Expiration Date, the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property, options, evidence of indebtedness or any other assets by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "**Distribution**"), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (*provided, however*, that to the extent that the Holder's right to participate in any such Distribution would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Distribution to such extent (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

4. PURCHASE RIGHTS; FUNDAMENTAL TRANSACTIONS.

(a) Purchase Rights. In addition to any adjustments pursuant to Section 2 above, if at any time on or after the Subscription Date and on or prior to the Expiration Date the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock (the “**Purchase Rights**”), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights that the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the grant, issuance or sale of such Purchase Rights (*provided, however*, that to the extent that the Holder’s right to participate in any such Purchase Right would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Purchase Right to such extent (and shall not be entitled to beneficial ownership of such Common Stock as a result of such Purchase Right (and beneficial ownership) to such extent) and such Purchase Right to such extent shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right to be held similarly in abeyance) to the same extent as if there had been no such limitation).

(b) Fundamental Transaction. The Company shall not enter into or be party to a Fundamental Transaction unless the Successor Entity assumes in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 4(b), including agreements to deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant, including, without limitation, that is exercisable for a corresponding number of shares of capital stock equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price that applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such adjustments to the number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction). Upon the consummation of each Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for the Company (so that from and after the date of the applicable Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein. Upon consummation of each Fundamental Transaction, the Successor Entity shall deliver to the Holder confirmation that there shall be issued upon exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction, in lieu of the shares of Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of this Warrant prior to the applicable Fundamental Transaction, such shares of common stock (or its equivalent) of the Successor Entity (including its Parent Entity) that the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant), as adjusted in accordance with the provisions of this Warrant. Notwithstanding the foregoing, and without limiting Section 1(f) hereof, the Holder may elect, at its sole option, by delivery of written notice to the Company to waive this Section 4(b) to permit the Fundamental Transaction without the assumption of this Warrant. In addition to and not in substitution for any other rights hereunder, prior to the consummation of each Fundamental Transaction pursuant to which holders of shares of Common Stock are entitled to receive securities or other assets with respect to or in exchange for shares of Common Stock (a “**Corporate Event**”), the Company shall make appropriate provision to insure that the Holder will thereafter have the right to receive upon an exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction but prior to the Expiration Date, in lieu of the shares of the Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of the Warrant prior to such Fundamental Transaction, such shares of stock, securities, cash, assets or any other property whatsoever (including warrants or other purchase or subscription rights) (collectively, the “**Corporate Event Consideration**”) that the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant). The provision made pursuant to the preceding sentence shall be in a form and substance reasonably satisfactory to the Holder. The provisions of this Section 4(b) shall apply similarly and equally to successive Fundamental Transactions and Corporate Events. Notwithstanding the foregoing, in the event of a Change of Control, at the request of the Holder delivered before the 30th day after such Change of Control, the Company (or the Successor Entity) shall purchase this Warrant from the Holder by paying to the Holder, within five (5) Business Days after such request (or, if later, on the effective date of the Change of Control), an amount equal to the Black Scholes Value of the remaining unexercised portion of this Warrant on the effective date of such Change of Control, payable in cash; *provided, however*, that, if the Change of Control is not within the Company’s control, including not approved by the Company’s Board of Directors, the Holder shall only be entitled to receive from the Company or any Successor Entity, as of the date of consummation of such Change of Control, the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of this Warrant, that is being offered and paid to the holders of Common Stock of the Company in connection with the Change of Control, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Change of Control.

5. NONCIRCUMVENTION. The Company hereby covenants and agrees that the Company will not, by amendment of its Certificate of Incorporation or Bylaws, or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issuance or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and will at all times in good faith carry out all of the provisions of this Warrant and take all action as may be required to protect the rights of the Holder. Without limiting the generality of the foregoing, the Company (i) shall not increase the par value of any shares of Common Stock receivable upon the exercise of this Warrant above the Exercise Price then in effect, (ii) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable shares of Common Stock upon the exercise of this Warrant, and (iii) shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of the Warrants then outstanding (without regard to any limitations on exercise).

6. WARRANT HOLDER NOT DEEMED A STOCKHOLDER. Except as otherwise specifically provided herein, the Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of capital stock of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares that such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company. Notwithstanding this Section 6, the Company shall provide the Holder with copies of the same notices and other information given to the stockholders of the Company generally, contemporaneously with the giving thereof to the stockholders.

7. REISSUANCE OF WARRANTS.

(a) Transfer of Warrant. If this Warrant is to be transferred, the Holder shall surrender this Warrant to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Warrant (in accordance with Section 7(d)), registered as the Holder may request, representing the right to purchase the number of Warrant Shares being transferred by the Holder and, if less than the total number of Warrant Shares then underlying this Warrant is being transferred, a new Warrant (in accordance with Section 7(d)) to the Holder representing the right to purchase the number of Warrant Shares not being transferred.

(b) Lost, Stolen or Mutilated Warrant. Upon receipt by the Company of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant, and, in the case of loss, theft or destruction, of any indemnification undertaking by the Holder to the Company in customary form (but without the obligation to post a bond) and, in the case of mutilation, upon surrender and cancellation of this Warrant, the Company shall execute and deliver to the Holder a new Warrant (in accordance with Section 7(d)) representing the right to purchase the Warrant Shares then underlying this Warrant.

(c) Exchangeable for Multiple Warrants. This Warrant is exchangeable, upon the surrender hereof by the Holder at the principal office of the Company, for a new Warrant or Warrants (in accordance with Section 7(d)) representing in the aggregate the right to purchase the number of Warrant Shares then underlying this Warrant, and each such new Warrant will represent the right to purchase such portion of such Warrant Shares as is designated by the Holder at the time of such surrender.

(d) Issuance of New Warrants. If this Warrant is not held in global form through DTC (or any successor depository), whenever the Company is required to issue a new Warrant pursuant to the terms of this Warrant, such new Warrant (i) shall be of like tenor with this Warrant, (ii) shall represent, as indicated on the face of such new Warrant, the right to purchase the Warrant Shares then underlying this Warrant (or in the case of a new Warrant being issued pursuant to Section 7(a) or Section 7(c), the Warrant Shares designated by the Holder that, when added to the number of shares of Common Stock underlying the other new Warrants issued in connection with such issuance, does not exceed the number of Warrant Shares then underlying this Warrant), (iii) shall have an issuance date, as indicated on the face of such new Warrant that is the same as the Issuance Date, and (iv) shall have the same rights and conditions as this Warrant.

(e) Warrant Register. If this Warrant is held in global form through DTC (or any successor depository), the Warrant Agent shall register this Warrant, upon records to be maintained by the Warrant Agent for that purpose (the "**Warrant Register**"), in the name of the record Holder hereof from time to time. If this Warrant is not held in global form through DTC (or any successor depository), the Company and the Warrant Agent may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

8. NOTICES. Whenever notice is required to be given under this Warrant, including, without limitation, an Exercise Notice, unless otherwise provided herein, such notice shall be given in writing, (i) if delivered (a) from within the domestic United States, by first-class registered or certified airmail, or nationally recognized overnight express courier, postage prepaid, electronic mail or by facsimile or (b) from outside the United States, by International Federal Express, electronic mail or facsimile, and (ii) will be deemed given (A) if delivered by first-class registered or certified mail domestic, three (3) Business Days after so mailed, (B) if delivered by nationally recognized overnight carrier, one (1) Business Day after so mailed, (C) if delivered by International Federal Express, two (2) Business Days after so mailed and (D) at the time of transmission, if delivered by electronic mail to each of the email addresses specified in this Section 8 prior to 5:00 p.m. (New York time) on a Trading Day, (E) the next Trading Day after the date of transmission, if delivered by electronic mail to each of the email addresses specified in this Section 8 on a day that is not a Trading Day or later than 5:00 p.m. (New York time) on any Trading Day and (F) if delivered by facsimile, upon electronic confirmation of receipt of such facsimile, and will be delivered and addressed as follows:

(i) if to the Company, to:
Outlook Therapeutics, Inc.
7 Clarke Drive
Cranbury, NJ 08512
Attn: Lawrence A. Kenyon

(ii) if to the Holder, at such address or other contact information delivered by the Holder to Company or as is on the books and records of the Company.

The Company shall provide the Holder with prompt written notice of all actions taken pursuant to this Warrant, including in reasonable detail a description of such action and the reason therefor. Without limiting the generality of the foregoing, the Company will give written notice to the Holder (i) immediately upon any adjustment of the Exercise Price, setting forth in reasonable detail, and certifying, the calculation of such adjustment and (ii) at least fifteen (15) days prior to the date on which the Company closes its books or takes a record (A) with respect to any dividend or distribution upon the shares of Common Stock, (B) with respect to any grants, issuances or sales of any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property to holders of shares of Common Stock or (C) for determining rights to vote with respect to any Fundamental Transaction, dissolution or liquidation; *provided* in each case that such information shall be made known to the public prior to or in conjunction with such notice being provided to the Holder. It is expressly understood and agreed that the time of exercise specified by the Holder in each Exercise Notice shall be definitive and may not be disputed or challenged by the Company.

9. AMENDMENT AND WAIVER. Except as otherwise provided herein, the provisions of this Warrant may be amended or waived and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

10. GOVERNING LAW; JURISDICTION; JURY TRIAL. This Warrant shall be governed by and construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Warrant shall be governed by, the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. The Company hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in The City of New York, Borough of Manhattan, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. The Company hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to the Company at the address set forth in Section 8(i) above or such other address as the Company subsequently delivers to the Holder and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Nothing contained herein shall be deemed or operate to preclude the Holder from bringing suit or taking other legal action against the Company in any other jurisdiction to collect on the Company's obligations to the Holder, to realize on any collateral or any other security for such obligations, or to enforce a judgment or other court ruling in favor of the Holder. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding. **THE COMPANY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS WARRANT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

11. DISPUTE RESOLUTION. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall submit the disputed determinations or arithmetic calculations via facsimile or electronic mail within two (2) Business Days of receipt of the Exercise Notice or other event giving rise to such dispute, as the case may be, to the Holder. If the Holder and the Company are unable to agree upon such determination or calculation of the Exercise Price or the Warrant Shares within three (3) Business Days of such disputed determination or arithmetic calculation being submitted to the Holder, then the Company shall, within two (2) Business Days submit via facsimile or electronic mail (a) the disputed determination of the Exercise Price to an independent, reputable investment bank selected by the Company and approved by the Holder or (b) the disputed arithmetic calculation of the Warrant Shares to the Company's independent, outside accountant. The Company shall cause at its expense the investment bank or the accountant, as the case may be, to perform the determinations or calculations and notify the Company and the Holder of the results no later than ten (10) Business Days from the time it receives the disputed determinations or calculations. Such investment bank's or accountant's determination or calculation, as the case may be, shall be binding upon all parties absent demonstrable error.

12. REMEDIES, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Warrant shall be cumulative and in addition to all other remedies available under this Warrant and any other Transaction Documents, at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Warrant. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the holder of this Warrant shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

13. TRANSFER. This Warrant and the Warrant Shares may be offered for sale, sold, transferred, pledged or assigned without the consent of the Company.

14. SEVERABILITY; CONSTRUCTION; HEADINGS. If any provision of this Warrant is prohibited by law or otherwise determined to be invalid or unenforceable by a court of competent jurisdiction, the provision that would otherwise be prohibited, invalid or unenforceable shall be deemed amended to apply to the broadest extent that it would be valid and enforceable, and the invalidity or unenforceability of such provision shall not affect the validity of the remaining provisions of this Warrant so long as this Warrant as so modified continues to express, without material change, the original intentions of the parties as to the subject matter hereof and the prohibited nature, invalidity or unenforceability of the provision(s) in question does not substantially impair the respective expectations or reciprocal obligations of the parties or the practical realization of the benefits that would otherwise be conferred upon the parties. The parties will endeavor in good faith negotiations to replace the prohibited, invalid or unenforceable provision(s) with a valid provision(s), the effect of which comes as close as possible to that of the prohibited, invalid or unenforceable provision(s). This Warrant shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any Person as the drafter hereof. The headings of this Warrant are for convenience of reference and shall not form part of, or affect the interpretation of, this Warrant.

15. DISCLOSURE. Upon receipt or delivery by the Company of any notice in accordance with the terms of this Warrant, unless the Company has in good faith determined that the matters relating to such notice do not constitute material, nonpublic information relating to the Company or its subsidiaries, the Company shall contemporaneously with any such receipt or delivery publicly disclose such material, nonpublic information on a Current Report on Form 8-K or otherwise. In the event that the Company believes that a notice contains material, nonpublic information relating to the Company or its subsidiaries, the Company so shall indicate to such Holder contemporaneously with delivery of such notice, and in the absence of any such indication, the Holder shall be allowed to presume that all matters relating to such notice do not constitute material, nonpublic information relating to the Company or its subsidiaries.

16. WARRANT AGENT AGREEMENT. If this Warrant is held in global form through DTC (or any successor depository), this Warrant is issued subject to the Warrant Agent Agreement. To the extent any provision of this Warrant conflicts with the express provisions of the Warrant Agent Agreement, the provisions of this Warrant shall govern and be controlling.

17. CERTAIN DEFINITIONS. For purposes of this Warrant, the following terms shall have the following meanings:

(a) **“Affiliate”** means, with respect to any Person, any other Person that directly or indirectly controls, is controlled by, or is under common control with, such Person, it being understood for purposes of this definition that “control” of a Person means the power directly or indirectly either to vote 10% or more of the stock having ordinary voting power for the election of directors of such Person or direct or cause the direction of the management and policies of such Person whether by contract or otherwise.

(b) **“Approved Stock Plan”** means any employee benefit plan that has been approved by a majority of the disinterested members of the Board of Directors of the Company, pursuant to which the Company’s securities may be issued to any employee, officer or director for services provided to the Company.

(c) **“Attribution Parties”** means, collectively, the following Persons and entities: (i) any investment vehicle, including, any funds, feeder funds or managed accounts, currently, or from time to time after the Subscription Date, directly or indirectly managed or advised by the Holder’s investment manager or any of its Affiliates or principals, (ii) any direct or indirect Affiliates of the Holder or any of the foregoing, (iii) any Person acting or who could be deemed to be acting as a Group together with the Holder or any of the foregoing and (iv) any other Persons whose beneficial ownership of the Company’s Common Stock would or could be aggregated with the Holder’s and the other Attribution Parties for purposes of Section 13(d) of the 1934 Act. For clarity, the purpose of the foregoing is to subject collectively the Holder and all other Attribution Parties to the Maximum Percentage.

(d) **“Bid Price”** means, for any security as of the particular time of determination, the bid price for such security on the Principal Market as reported by Bloomberg as of such time of determination, or, if the Principal Market is not the principal securities exchange or trading market for such security, the bid price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg as of such time of determination, or if the foregoing does not apply, the bid price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg as of such time of determination, or, if no bid price is reported for such security by Bloomberg as of such time of determination, the average of the bid prices of any market makers for such security as reported in the “pink sheets” by OTC Markets Group Inc. (formerly Pink Sheets LLC) as of such time of determination. If the Bid Price cannot be calculated for a security as of the particular time of determination on any of the foregoing bases, the Bid Price of such security as of such time of determination shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 11. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during such period.

(e) **“Black Scholes Value”** means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg determined as of the day immediately following the first public announcement of the applicable Change of Control, or, if the Change of Control is not publicly announced, the date the Change of Control is consummated, for pricing purposes and reflecting (i) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of this Warrant as of such date of request, (ii) an expected volatility equal to 100%, (iii) the underlying price per share used in such calculation shall be the greater of (a) the highest Weighted Average Price during the five (5) Trading Days prior to the closing of the Change of Control and (b) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Change of Control, (iv) a zero cost of borrow and (v) a 360 day annualization factor.

(f) **“Bloomberg”** means Bloomberg Financial Markets.

(g) **“Business Day”** means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed.

(h) **“Change of Control”** means any Fundamental Transaction other than (i) any reorganization, recapitalization or reclassification of the Common Stock in which holders of the Company’s voting power immediately prior to such reorganization, recapitalization or reclassification continue after such reorganization, recapitalization or reclassification to hold publicly traded securities and, directly or indirectly, are, in all material respect, the holders of the voting power of the surviving entity (or entities with the authority or voting power to elect the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities) after such reorganization, recapitalization or reclassification, (ii) pursuant to a migratory merger effected solely for the purpose of changing the jurisdiction of incorporation of the Company or (iii) a merger in connection with a bona fide acquisition by the Company of any Person in which (x) the gross consideration paid, directly or indirectly, by the Company in such acquisition is not greater than 40% of the Company’s market capitalization as calculated on the date of the consummation of such merger and (y) such merger does not contemplate a change to the identity of a majority of the board of directors of the Company. Notwithstanding anything herein to the contrary, any transaction or series of transaction that, directly or indirectly, results in the Company or the Successor Entity not having Common Stock or common stock, as applicable, registered under the 1934 Act and listed on an Eligible Market shall be deemed a Change of Control.

(i) **“Closing Bid Price”** and **“Closing Sale Price”** means, for any security as of any date, the last closing bid price and last closing trade price, respectively, for such security on the Principal Market, as reported by Bloomberg, or, if the Principal Market begins to operate on an extended hours basis and does not designate the closing bid price or the closing trade price, as the case may be, then the last bid price or the last trade price, respectively, of such security prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Principal Market is not the principal securities exchange or trading market for such security, the last closing bid price or last trade price, respectively, of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the last closing bid price or last trade price, respectively, of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no closing bid price or last trade price, respectively, is reported for such security by Bloomberg, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. (formerly Pink OTC Markets Inc.). If the Closing Bid Price or the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price or the Closing Sale Price, as the case may be, of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11. All such determinations to be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

(j) “**Common Stock**” means (i) the Company’s Common Stock, par value \$0.01 per share, and (ii) any capital stock into which such Common Stock shall have been changed or any capital stock resulting from a reclassification of such Common Stock.

(k) “**Convertible Securities**” means any stock or securities (other than Options) directly or indirectly convertible into or exercisable or exchangeable for shares of Common Stock.

(l) “**Eligible Market**” means The NASDAQ Capital Market, the NYSE American LLC, The NASDAQ Global Select Market, The NASDAQ Global Market or The New York Stock Exchange, Inc.

(m) “**Excluded Securities**” means any shares of Common Stock issued or issuable, or deemed issued or issuable pursuant to Section 2(a): (i) in connection with any Approved Stock Plan, including, for the avoidance of doubt, the issuance of equity awards (including Options or Convertible Securities) pursuant to any such Approved Stock Plan after the Subscription Date, (ii) upon exercise of the Warrants, (iii) upon conversion, exercise, exchange or settlement of any Options or Convertible Securities that are outstanding on the day immediately preceding the Subscription Date, including, for the avoidance of doubt, the issuance of equity awards (including Options or Convertible Securities) pursuant to any such Approved Stock Plan after the Subscription Date, (iv) upon the issuance of “payment-in-kind” dividends of additional shares of the Company’s Series A-1 Convertible Preferred Stock, as contemplated by the terms thereof, and (v) pursuant to acquisitions, divestitures, licenses, partnerships, collaborations or strategic transactions approved by the Board of Directors or a majority of the members of a committee of directors established for such purposes; *provided* that any such issuance shall only be to a Person (or to the equity holders of a Person) that is, itself or through its subsidiaries, an operating company or an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities.

(n) “**Expiration Date**” means the date sixty (60) months after the Initial Exercisability Date or, if such date falls on a day other than a Business Day or on which trading does not take place on the Principal Market (a “**Holiday**”), the next day that is not a Holiday.

(o) **“Fundamental Transaction”** means (A) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Subject Entity, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company or any of its “significant subsidiaries” (as defined in Rule 1-02 of Regulation S-X) to one or more Subject Entities, or (iii) make, or allow one or more Subject Entities to make, or allow the Company to be subject to or have its shares of Common Stock be subject to or party to one or more Subject Entities making, a purchase, tender or exchange offer that is accepted by the holders of at least either (x) 50% of the outstanding shares of Common Stock, (y) 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all Subject Entities making or party to, or Affiliated with any Subject Entities making or party to, such purchase, tender or exchange offer were not outstanding; or (z) such number of shares of Common Stock such that all Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such purchase, tender or exchange offer, become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (iv) consummate a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with one or more Subject Entities whereby all such Subject Entities, individually or in the aggregate, acquire, either (x) at least 50% of the outstanding shares of Common Stock, (y) at least 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all the Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such stock purchase agreement or other business combination were not outstanding; or (z) such number of shares of Common Stock such that the Subject Entities become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (v) reorganize, recapitalize or reclassify its shares of Common Stock, (B) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, allow any Subject Entity individually or the Subject Entities in the aggregate to be or become the “beneficial owner” (as defined in Rule 13d-3 under the 1934 Act), directly or indirectly, whether through acquisition, purchase, assignment, conveyance, tender, tender offer, exchange, reduction in outstanding shares of Common Stock, merger, consolidation, business combination, reorganization, recapitalization, spin-off, scheme of arrangement, reorganization, recapitalization or reclassification or otherwise in any manner whatsoever, of either (x) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock, (y) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock not held by all such Subject Entities as of the Subscription Date calculated as if any shares of Common Stock held by all such Subject Entities were not outstanding, or (z) a percentage of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock or other equity securities of the Company sufficient to allow such Subject Entities to effect a statutory short form merger or other transaction requiring other stockholders of the Company to surrender their Common Stock without approval of the stockholders of the Company or (C) directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, the issuance of or the entering into any other instrument or transaction structured in a manner to circumvent, or that circumvents, the intent of this definition in which case this definition shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this definition to the extent necessary to correct this definition or any portion of this definition that may be defective or inconsistent with the intended treatment of such instrument or transaction.

(p) **“Group”** means a “group” as that term is used in Section 13(d) of the 1934 Act and as defined in Rule 13d-5 thereunder.

(q) “**Option Value**” means the value of an Option based on the Black-Scholes Option Pricing model obtained from the “OV” function on Bloomberg determined as of the day of the most recent Closing Sale Price of the Common Stock prior to the public announcement of the pricing of the applicable Option (or, if the pricing is not publicly announced, on the most recent Closing Sale Price of the Common Stock prior to the pricing of the applicable Option) and reflecting (i) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of the applicable Option as of the applicable date of determination, (ii) an expected volatility equal to 50%, (iii) an underlying price per share equal to the most recent Closing Sale Price of the Common Stock prior to the public announcement of the pricing of the applicable Option (or, if the pricing is not publicly announced, on the most recent Closing Sale Price of the Common Stock prior to the pricing of the applicable Option), (iv) a zero cost of borrow and (v) a 360-day annualization factor.

(r) “**Options**” means any rights, warrants or options to subscribe for or purchase shares of Common Stock or Convertible Securities.

(s) “**Parent Entity**” of a Person means an entity that, directly or indirectly, controls the applicable Person, including such entity whose common stock or equivalent equity security is quoted or listed on an Eligible Market (or, if so elected by the Holder, any other market, exchange or quotation system), or, if there is more than one such Person or such entity, the Person or such entity designated by the Holder or in the absence of such designation, such Person or entity with the largest public market capitalization as of the date of consummation of the Fundamental Transaction or Change of Control.

(t) “**Person**” means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity and a government or any department or agency thereof.

(u) “**Principal Market**” means the principal securities exchange or securities market on which the Common Stock is then traded.

(v) “**Required Holders**” means the holders of the Warrants representing at least a majority of the shares of Common Stock underlying the Warrants then outstanding.

(w) “**Standard Settlement Period**” means the standard settlement period, expressed in a number of Trading Days, for the Company’s primary trading market or quotation system with respect to the Common Stock that is in effect on the date of receipt of an applicable Exercise Notice.

(x) “**Subject Entity**” means any Person, Persons or Group or any Affiliate or associate of any such Person, Persons or Group.

(y) “**Successor Entity**” means one or more Person or Persons (or, if so elected by the Holder, the Company or Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or Change of Control or one or more Person or Persons (or, if so elected by the Holder, the Company or the Parent Entity) with which such Fundamental Transaction or Change of Control shall have been entered into.

(z) “**Trading Day**” means any day on which the Common Stock is traded on the Principal Market, or, if the Principal Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market on which the Common Stock is then traded.

(aa) “**Transaction Documents**” means any agreement entered into by and between the Company and the Holder, as applicable.

(bb) “**Warrant Agent Agreement**” means that certain Warrant Agent Agreement, dated as of the Initial Exercise Date, between the Company and the Warrant Agent.

(cc) “**Warrant Agent**” means American Stock Transfer & Trust Company, LLC, a New York limited liability trust company.

(dd) “**Weighted Average Price**” means, for any security as of any date, the dollar volume-weighted average price for such security on the Principal Market during the period beginning at 9:30:01 a.m., New York time (or such other time as the Principal Market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as the Principal Market publicly announces is the official close of trading), as reported by Bloomberg through its “Volume at Price” function or, if the foregoing does not apply, the dollar volume-weighted average price of such security in the over-the-counter market on the electronic bulletin board for such security during the period beginning at 9:30:01 a.m., New York time (or such other time as such market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as such market publicly announces is the official close of trading), as reported by Bloomberg, or, if no dollar volume-weighted average price is reported for such security by Bloomberg for such hours, the average of the highest Closing Bid Price and the lowest closing ask price of any of the market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. (formerly Pink OTC Markets Inc.). If the Weighted Average Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Weighted Average Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11 with the term “Weighted Average Price” being substituted for the term “Exercise Price.” All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Five-Year Warrant to Purchase Common Stock to be duly executed as of the Issuance Date set out above.

OUTLOOK THERAPEUTICS, INC.

By: _____
Name:
Title:

EXERCISE NOTICE

TO BE EXECUTED BY THE REGISTERED HOLDER TO EXERCISE THIS FIVE-YEAR WARRANT TO PURCHASE COMMON STOCK

OUTLOOK THERAPEUTICS, INC.

The undersigned holder hereby exercises the right to purchase _____ shares of Common Stock ("Warrant Shares") of Outlook Therapeutics, Inc., a company organized under the laws of Delaware (the "Company"), evidenced by the attached Five-Year Warrant to Purchase Common Stock (the "Warrant"). Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Warrant.

1. Form of Exercise Price. The Holder intends that payment of the Exercise Price shall be made as:

_____ a "Cash Exercise" with respect to _____ Warrant Shares; and/or

_____ a "Cashless Exercise" with respect to _____ Warrant Shares.

2. Payment of Exercise Price. In the event that the holder has elected a Cash Exercise with respect to some or all of the Warrant Shares to be issued pursuant hereto, the holder shall pay the Aggregate Exercise Price in the sum of \$ _____ to the Company in accordance with the terms of the Warrant.

3. Delivery of Warrant Shares. The Company shall deliver to the holder _____ Warrant Shares in accordance with the terms of the Warrant.

Date: _____

Name of Registered Holder

By: _____
Name:
Title:

ACKNOWLEDGMENT

The Company hereby acknowledges this Exercise Notice and hereby directs American Stock Transfer & Trust Company, LLC to issue the above indicated number of shares of Common Stock on or prior to the applicable Share Delivery Date.

OUTLOOK THERAPEUTICS, INC.

By: _____
Name: _____
Title: _____

Exhibit D

[FORM OF CERTIFICATED 15-MONTH WARRANT]

OUTLOOK THERAPEUTICS, INC

15-MONTH WARRANT TO PURCHASE COMMON STOCK

Warrant No.: _____
Number of Shares of Common Stock: _____
Date of Issuance: April 12, 2019 (“**Issuance Date**”)

Outlook Therapeutics, Inc., a company organized under the laws of Delaware (the “**Company**”), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [HOLDER], the registered holder hereof or its permitted assigns (the “**Holder**”), is entitled, subject to the terms set forth below, to purchase from the Company, at the Exercise Price (as defined below) then in effect, at any time or times on or after April 12, 2019 (the “**Initial Exercisability Date**”), but not after 11:59 p.m., New York time, on the Expiration Date, (as defined below), _____ (_____) fully paid non-assessable shares of Common Stock (as defined below), subject to adjustment as provided herein (the “**Warrant Shares**”). Except as otherwise defined herein, capitalized terms in this Warrant to Purchase Common Stock (including any Warrants to Purchase Common Stock issued in exchange, transfer or replacement hereof, this “**Warrant**”), shall have the meanings set forth in Section 16. This Warrant is one of the 15-Month Warrants to Purchase Common Stock (the “**Warrants**”) issued pursuant to (i) that certain Underwriting Agreement, dated as of April 10, 2019 (the “**Subscription Date**”) by and between the Company and Oppenheimer & Co. Inc. as representative of the several underwriters named therein, (ii) the Company’s Registration Statement on Form S-1 (File number 333-229761) (together with the additional registration statement filed by the Company pursuant to Rule 462(b) of the 1933 Act (as defined below) the “**Registration Statement**”). This Warrant shall initially be issued and maintained in the form of a security held in book-entry form and the Depository Trust Company or its nominee (“**DTC**”) shall initially be the sole registered holder of this Warrant, subject to a Holder’s right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agent Agreement, in which case this sentence shall not apply.

1. EXERCISE OF WARRANT.

(a) Mechanics of Exercise. Subject to the terms and conditions hereof (including, without limitation, the limitations set forth in Section 1(f)), this Warrant may be exercised by the Holder at any time or times on or after the Initial Exercisability Date, in whole or in part, by delivery (whether via facsimile, electronic mail or otherwise) of a written notice, in the form attached hereto as Exhibit A (the “**Exercise Notice**”), of the Holder’s election to exercise this Warrant. Within one (1) Trading Day following the delivery of the Exercise Notice, the Holder shall make payment to the Company of an amount equal to the Exercise Price in effect on the date of such exercise multiplied by the number of Warrant Shares as to which this Warrant is being exercised (the “**Aggregate Exercise Price**”) in cash by wire transfer of immediately available funds or, if the provisions of Section 1(d) are applicable, by notifying the Company that this Warrant is being exercised pursuant to a Cashless Exercise (as defined in Section 1(d)). The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder, nor shall any ink-original signature or medallion guarantee (or other type of guarantee or notarization) with respect to any Exercise Notice be required. Execution and delivery of the Exercise Notice with respect to less than all of the Warrant Shares shall have the same effect as cancellation of the original Warrant and issuance of a new Warrant evidencing the right to purchase the remaining number of Warrant Shares and the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Exercise Notice is delivered to the Company. On or before the first (1st) Trading Day following the date on which the Holder has delivered the applicable Exercise Notice, the Company shall transmit by facsimile or electronic mail an acknowledgment of confirmation of receipt of the Exercise Notice, in the form attached to the Exercise Notice, to the Holder and the Company’s transfer agent (the “**Transfer Agent**”). So long as the Holder delivers the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the earlier of (i) the second (2nd) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period, in each case following the date on which the Exercise Notice has been delivered to the Company, or, if the Holder does not deliver the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the first (1st) Trading Day following the date on which the Aggregate Exercise Price (or notice of a Cashless Exercise) is delivered (such earlier date, or if later, the earliest day on which the Company is required to deliver Warrant Shares pursuant to this Section 1(a), the “**Share Delivery Date**”), the Company shall (X) *provided* that the Transfer Agent is participating in The Depository Trust Company (“**DTC**”) Fast Automated Securities Transfer Program, credit such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system, or (Y) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, issue and dispatch by overnight courier to the address or e-mail address as specified in the Exercise Notice, evidence of credit of book-entry shares, registered in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise. If the Company fails for any reason to deliver to such registered holder or Participant, as the case may be, the Warrant Shares subject to an exercise notice by the Share Delivery Date, the Company shall pay to the registered holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the Weighted Average Price of the Common Stock on the date of the applicable exercise notice), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Share Delivery Date until such Warrant Shares are delivered or the registered holder rescinds such exercise. The Company shall be responsible for all fees and expenses of the Transfer Agent and all fees and expenses with respect to the issuance of Warrant Shares via DTC, if any, including without limitation for same day processing. Upon delivery of the Exercise Notice, the Holder shall be deemed for all corporate purposes to have become the holder of record and beneficial owner of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date such Warrant Shares are credited to the Holder’s DTC account or the date of delivery of the certificates evidencing such Warrant Shares, as the case may be. If this Warrant is physically delivered to the Company in connection with any exercise pursuant to this Section 1(a) and the number of Warrant Shares represented by this Warrant submitted for exercise is greater than the number of Warrant Shares being acquired upon an exercise, then the Company shall as soon as practicable and in no event later than three (3) Trading Days after any exercise and at its own expense, issue and deliver to the Holder (or its designee) a new Warrant (in accordance with Section 7(d)) representing the right to purchase the number of Warrant Shares issuable immediately prior to such exercise under this Warrant, less the number of Warrant Shares with respect to which this Warrant is exercised. No fractional Warrant Shares are to be issued upon the exercise of this Warrant, but rather the Company shall pay a cash adjustment equal to such fraction multiplied by the Exercise Price. The Company shall pay any and all transfer, stamp, issuance and similar taxes, costs and expenses (including, without limitation, fees and expenses of the Transfer Agent) that may be payable with respect to the issuance and delivery of Warrant Shares upon exercise of this Warrant. The Company’s obligations to issue and deliver Warrant Shares in accordance with the terms and subject to the conditions hereof are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination; provided, however, that the Company shall not be required to deliver Warrant Shares with respect to an exercise prior to the Holder’s delivery of the Aggregate Exercise Price (or notice of a Cashless Exercise) with respect to such exercise.

(b) Exercise Price. For purposes of this Warrant, “**Exercise Price**” means \$2.90 per share, subject to adjustment as provided herein.

(c) Company’s Failure to Timely Deliver Securities. If either (I) the Company shall fail for any reason or for no reason on or prior to the applicable Share Delivery Date, if (x) the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, to issue to the Holder by book-entry credit the number of shares of Common Stock to which the Holder is entitled and register such Common Stock on the Company’s share register or (y) the Transfer Agent is participating in the DTC Fast Automated Securities Transfer Program, to credit the Holder’s balance account with DTC, for such number of shares of Common Stock to which the Holder is entitled upon the Holder’s exercise of this Warrant or (II) a registration statement (which may be the Registration Statement) covering the issuance or resale of the Warrant Shares that are the subject of the Exercise Notice (the “**Exercise Notice Warrant Shares**”) is not available for the issuance or resale, as applicable, of such Exercise Notice Warrant Shares and (x) the Company fails to promptly, but in no event later than one (1) Business Day after such registration statement becomes unavailable, to so notify the Holder and (y) the Company is unable to deliver the Exercise Notice Warrant Shares electronically without any restrictive legend by crediting such aggregate number of Exercise Notice Warrant Shares to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system (the event described in the immediately foregoing clause (II) is hereinafter referred to as a “**Notice Failure**” and, together with the event described in clause (I) above, an “**Exercise Failure**”), then, in addition to all other remedies available to the Holder, if on or prior to the applicable Share Delivery Date either (I) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, the Company shall fail to issue by book-entry credit to the Holder and register such shares of Common Stock on the Company’s share register or, if the Transfer Agent is participating in the DTC Fast Automated Securities Transfer Program, credit the Holder’s balance account with DTC for the number of shares of Common Stock to which the Holder is entitled upon the Holder’s exercise hereunder or pursuant to the Company’s obligation pursuant to clause (ii) below or (II) a Notice Failure occurs, and if on or after such Trading Day the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder’s brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares that the Holder anticipated receiving upon such exercise from the Company (a “**Buy-In**”), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder’s total purchase price (including brokerage commissions and other out-of-pocket expenses, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder’s right to pursue any other remedies available to it hereunder, at law or in equity, including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company’s failure to timely credit by book entry the Warrant Shares (or to electronically deliver such Warrant Shares) upon the exercise of this Warrant as required pursuant to the terms hereof. While this Warrant is outstanding, the Company shall cause its transfer agent to participate in the DTC Fast Automated Securities Transfer Program. In addition to the foregoing rights, (i) if the Company fails to deliver the applicable number of Warrant Shares upon an exercise pursuant to Section 1 by the applicable Share Delivery Date, then the Holder shall have the right to rescind such exercise in whole or in part and retain and/or have the Company return, as the case may be, any portion of this Warrant that has not been exercised pursuant to such Exercise Notice; *provided* that the rescission of an exercise shall not affect the Company’s obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 1(c) or otherwise, and (ii) if a registration statement (which may be the Registration Statement) covering the issuance or resale of the Warrant Shares that are subject to an Exercise Notice is not available for the issuance or resale, as applicable, of such Exercise Notice Warrant Shares and the Holder has submitted an Exercise Notice prior to receiving notice of the non-availability of such registration statement and the Company has not already delivered the Warrant Shares underlying such Exercise Notice electronically without any restrictive legend by crediting such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system, the Holder shall have the option, by delivery of notice to the Company, to (x) rescind such Exercise Notice in whole or in part and retain or have returned, as the case may be, any portion of this Warrant that has not been exercised pursuant to such Exercise Notice; *provided* that the rescission of an Exercise Notice shall not affect the Company’s obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 1(c) or otherwise, and/or (y) switch some or all of such Exercise Notice from a cash exercise to a Cashless Exercise.

(d) Cashless Exercise. A Cashless Exercise (as defined below) may occur (i) in the case of the 15-Month Warrants only, in whole or in part for a number of whole Warrant Shares, after May 12, 2019 (the “**Cashless Date**”), if the Weighted Average Price of the Common Stock on any single Trading Day on or after the Cashless Date and prior to the date of such Cashless Exercise fails to exceed the Exercise Price in effect as of the date hereof (subject to adjustment for any stock splits, stock dividends, stock combinations, recapitalizations and similar events) in which event, in lieu of the formula below, the aggregate number of Warrant Shares issuable in such cashless exercise pursuant to any given Exercise Notice electing to effect a Cashless Exercise shall equal the product of (x) the aggregate number of Warrant Shares for which the Warrants are exercised as if such exercise were by means of a cash exercise rather than a Cashless Exercise and (y) 0.60; and (ii) if a registration statement (which may be the Registration Statement) covering the issuance or resale of the Exercise Notice Warrant Shares is not available for the issuance or resale, as applicable, of such Exercise Notice Warrant Shares, the Holder may, in its sole discretion, exercise this Warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to the Company upon such exercise in payment of the Aggregate Exercise Price, elect instead to receive upon such exercise the “Net Number” of shares of Common Stock determined according to the following formula (a “**Cashless Exercise**”):

$$\text{Net Number} = \frac{(A \times B) - (A \times C)}{B}$$

For purposes of the foregoing formula:

A= the total number of shares with respect to which this Warrant is then being exercised.

B= as applicable: (i) the Closing Sale Price of the Common Stock on the Trading Day immediately preceding the date of the applicable Exercise Notice if such Exercise Notice is (1) both executed and delivered pursuant to Section 1(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 1(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(64) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the Weighted Average Price on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock as of the time of the Holder’s execution of the applicable Exercise Notice if such Exercise Notice is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 1(a) hereof or (iii) the Closing Sale Price of the Common Stock on the date of the applicable Exercise Notice if the date of such Exercise Notice is a Trading Day and such Exercise Notice is both executed and delivered pursuant to Section 1(a) hereof after the close of “regular trading hours” on such Trading Day.

C= the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

The Company agrees to make all calculations related to a Cashless Exercise and will provide the Warrant Agent with issuance instructions.

If Warrant Shares are issued in such a cashless exercise, the Company acknowledges and agrees that in accordance with Section 3(a)(9) of the 1933 Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised, and the holding period of the Warrants being exercised may be tacked on to the holding period of the Warrant Shares. The Company agrees not to take any position contrary to this Section 1(d). Without limiting the rights of a Holder to receive Warrant Shares on a “cashless exercise,” and to receive the cash payments contemplated pursuant to Sections 1(a), 1(c) and 4(b), in no event will the Company be required to pay to the Holder and cash or other consideration or otherwise net cash settle a Warrant exercise.

(e) Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the Holder the number of Warrant Shares that are not disputed and resolve such dispute in accordance with Section 11.

(f) Beneficial Ownership. Notwithstanding anything to the contrary contained herein, the Company shall not effect the exercise of any portion of this Warrant, and the Holder shall not have the right to exercise any portion of this Warrant, pursuant to the terms and conditions of this Warrant and any such exercise shall be null and void and treated as if never made, to the extent that after giving effect to such exercise, the Holder together with the other Attribution Parties collectively would beneficially own in excess of [4.99%][9.99%] (the “**Maximum Percentage**”) of the number of shares of Common Stock outstanding immediately after giving effect to such exercise. For purposes of the foregoing sentence, the aggregate number of shares of Common Stock beneficially owned by the Holder and the other Attribution Parties shall include the number of shares of Common Stock held by the Holder and all other Attribution Parties plus the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which the determination of such sentence is being made, but shall exclude the number of shares of Common Stock that would be issuable upon (A) exercise of the remaining, unexercised portion of this Warrant beneficially owned by the Holder or any of the other Attribution Parties and (B) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company (including, without limitation, any convertible notes or convertible preferred stock or warrants, including the other Warrants) beneficially owned by the Holder or any other Attribution Party subject to a limitation on conversion or exercise analogous to the limitation contained in this Section 1(f). For purposes of this Section 1(f), beneficial ownership shall be calculated in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the “**1934 Act**”). For purposes of this Warrant, in determining the number of outstanding shares of Common Stock the Holder may acquire upon the exercise of this Warrant without exceeding the Maximum Percentage, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company’s most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q and Current Reports on Form 8-K or other public filing with the Securities and Exchange Commission (the “**SEC**”), as the case may be, (y) a more recent public announcement by the Company or (z) any other written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding (the “**Reported Outstanding Share Number**”). If the Company receives an Exercise Notice from the Holder at a time when the actual number of outstanding shares of Common Stock is less than the Reported Outstanding Share Number, the Company shall (i) notify the Holder in writing of the number of shares of Common Stock then outstanding and, to the extent that such Exercise Notice would otherwise cause the Holder’s beneficial ownership, as determined pursuant to this Section 1(f), to exceed the Maximum Percentage, the Holder must notify the Company of a reduced number of Warrant Shares to be purchased pursuant to such Exercise Notice (the number of shares by which such purchase is reduced, the “**Reduction Shares**”) and (ii) as soon as reasonably practicable, the Company shall return to the Holder any exercise price paid by the Holder for the Reduction Shares. For any reason at any time, upon the written or oral request of the Holder, the Company shall within one (1) Business Day confirm orally and in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder and any other Attribution Party since the date as of which the Reported Outstanding Share Number was reported. In the event that the issuance of Common Stock to the Holder upon exercise of this Warrant results in the Holder and the other Attribution Parties being deemed to beneficially own, in the aggregate, more than the Maximum Percentage of the number of outstanding shares of Common Stock (as determined under Section 13(d) of the 1934 Act), the number of shares so issued by which the Holder’s and the other Attribution Parties’ aggregate beneficial ownership exceeds the Maximum Percentage (the “**Excess Shares**”) shall be deemed null and void and shall be cancelled ab initio, and the Holder shall not have the power to vote or to transfer the Excess Shares. As soon as reasonably practicable after the issuance of the Excess Shares has been deemed null and void, the Company shall return to the Holder the exercise price paid by the Holder for the Excess Shares. Upon delivery of a written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 9.99% as specified in such notice; *provided* that (i) any such increase in the Maximum Percentage will not be effective until the sixty-first (61st) day after such notice is delivered to the Company and (ii) any such increase or decrease will apply only to the Holder and the other Attribution Parties and not to any other holder of Warrants that is not an Attribution Party of the Holder. For purposes of clarity, the shares of Common Stock issuable pursuant to the terms of this Warrant in excess of the Maximum Percentage shall not be deemed to be beneficially owned by the Holder for any purpose including for purposes of Section 13(d) or Rule 16a-1(a)(1) of the 1934 Act. No prior inability to exercise this Warrant pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 1(f) to the extent necessary to correct this paragraph or any portion of this paragraph that may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 1(f) or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of this Warrant.

(g) Required Reserve Amount. So long as this Warrant remains outstanding, the Company shall at all times keep reserved for issuance under this Warrant a number of shares of Common Stock at least equal to 100% of the maximum number of shares of Common Stock as shall be necessary to satisfy the Company's obligation to issue shares of Common Stock under the Warrants then outstanding (without regard to any limitations on exercise) (the "**Required Reserve Amount**"); *provided* that at no time shall the number of shares of Common Stock reserved pursuant to this Section 1(g) be reduced other than in connection with any exercise of Warrants or such other event covered by Section 2(c) below. The Required Reserve Amount (including, without limitation, each increase in the number of shares so reserved) shall be allocated pro rata among the holders of the Warrants based on the number of shares of Common Stock issuable upon exercise of Warrants held by each holder thereof on the Issuance Date (without regard to any limitations on exercise) (the "**Authorized Share Allocation**"). In the event that a holder shall sell or otherwise transfer any of such holder's Warrants, each transferee shall be allocated a pro rata portion of such holder's Authorized Share Allocation. Any shares of Common Stock reserved and allocated to any Person that ceases to hold any Warrants shall be allocated to the remaining holders of Warrants, pro rata based on the number of shares of Common Stock issuable upon exercise of the Warrants then held by such holders thereof (without regard to any limitations on exercise).

(h) Insufficient Authorized Shares. If at any time while this Warrant remains outstanding the Company does not have a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance the Required Reserve Amount (an "**Authorized Share Failure**"), then the Company shall promptly take all action reasonably necessary to increase the Company's authorized shares of Common Stock to an amount sufficient to allow the Company to reserve the Required Reserve Amount for this Warrant then outstanding. Without limiting the generality of the foregoing sentence, as soon as practicable after the date of the occurrence of an Authorized Share Failure, but in no event later than ninety (90) days after the occurrence of such Authorized Share Failure, the Company shall hold a meeting of its stockholders for the approval of an increase in the number of authorized shares of Common Stock. In connection with such meeting, the Company shall provide each stockholder with a proxy statement and shall use its reasonable best efforts to solicit its stockholders' approval of such increase in authorized shares of Common Stock and to cause its board of directors to recommend to the stockholders that they approve such proposal. Notwithstanding the foregoing, if any such time of an Authorized Share Failure, the Company is able to obtain the written consent of a majority of the shares of its issued and outstanding shares of Common Stock to approve the increase in the number of authorized shares of Common Stock, the Company may satisfy this obligation by obtaining such consent and submitting for filing with the SEC an Information Statement on Schedule 14C.

2. ADJUSTMENT OF EXERCISE PRICE AND NUMBER OF WARRANT SHARES. The Exercise Price and the number of Warrant Shares shall be adjusted from time to time as follows:

(a) Adjustment Upon Issuance of Common Stock. If and whenever on or after the Subscription Date, the Company issues or sells, or in accordance with this Section 2 is deemed to have issued or sold, any shares of Common Stock (including the issuance or sale of shares of Common Stock owned or held by or for the account of the Company, but excluding shares of Common Stock deemed to have been issued or sold by the Company in connection with any Excluded Securities) for a consideration per share (the “**New Issuance Price**”) less than a price (the “**Applicable Price**”) equal to the Exercise Price in effect immediately prior to such issuance or sale or deemed issuance or sale (the foregoing a “**Dilutive Issuance**”), then immediately after such Dilutive Issuance, the Exercise Price then in effect shall be reduced to an amount equal to the New Issuance Price. For purposes of determining the adjusted Exercise Price under this Section 2(a), the following shall be applicable:

(i) Issuance of Options. If the Company in any manner grants or sells any Options and the lowest price per share for which one share of Common Stock is issuable upon the exercise of any such Options or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Options is less than the Applicable Price, then such share of Common Stock shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the granting or sale of such Options for such price per share. For purposes of this Section 2(a)(i), the “lowest price per share for which one share of Common Stock is issuable upon the exercise of any such Options or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Options” shall be equal to the sum of the lowest amounts of consideration (if any) received or receivable by the Company with respect to any one share of Common Stock upon the granting or sale of the Options, upon exercise of the Options and upon conversion, exercise or exchange of any Convertible Security issuable upon exercise of such Options less any consideration paid or payable by the Company with respect to such one share of Common Stock upon the granting or sale of such Options, upon exercise of such Options and upon conversion exercise or exchange of any Convertible Security issuable upon exercise of such Options. No further adjustment of the Exercise Price shall be made upon the actual issuance of such shares of Common Stock or of such Convertible Securities upon the exercise of such Options or upon the actual issuance of such shares of Common Stock upon conversion, exercise or exchange of such Convertible Securities.

(ii) Issuance of Convertible Securities. If the Company in any manner issues or sells any Convertible Securities and the lowest price per share for which one share of Common Stock is issuable upon the conversion, exercise or exchange thereof is less than the Applicable Price, then such share of Common Stock shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the issuance or sale of such Convertible Securities for such price per share. For the purposes of this Section 2(a)(ii), the “lowest price per share for which one share of Common Stock is issuable upon the conversion, exercise or exchange thereof” shall be equal to the sum of the lowest amounts of consideration (if any) received or receivable by the Company with respect to any one share of Common Stock upon the issuance or sale of the Convertible Security and upon conversion, exercise or exchange of such Convertible Security less any consideration paid or payable by the Company with respect to such one share of Common Stock upon the issuance or sale of such Convertible Security and upon conversion, exercise or exchange of such Convertible Security. No further adjustment of the Exercise Price shall be made upon the actual issuance of such shares of Common Stock upon conversion, exercise or exchange of such Convertible Securities, and if any such issuance or sale of such Convertible Securities is made upon exercise of any Options for which adjustment of the Exercise Price has been or is to be made pursuant to other provisions of this Section 2(a), no further adjustment of the Exercise Price shall be made by reason of such issuance or sale.

(iii) Change in Option Price or Rate of Conversion. If the purchase price provided for in any Options, the additional consideration, if any, payable upon the issue, conversion, exercise or exchange of any Convertible Securities, or the rate at which any Convertible Securities are convertible into or exercisable or exchangeable for shares of Common Stock increases or decreases at any time pursuant to the terms of such Options or Convertible Securities, the Exercise Price in effect at the time of such increase or decrease shall be adjusted to the Exercise Price, that would have been in effect at such time had such Options or Convertible Securities provided for such increased or decreased purchase price, additional consideration or increased or decreased conversion rate, as the case may be, at the time initially granted, issued or sold. For purposes of this Section 2(a)(iii), if the terms of any Option or Convertible Security that was outstanding as of the Subscription Date are increased or decreased in the manner described in the immediately preceding sentence, then such Option or Convertible Security and the shares of Common Stock deemed issuable upon exercise, conversion or exchange thereof shall be deemed to have been issued as of the date of such increase or decrease. No adjustment pursuant to this Section 2(a) shall be made if such adjustment would result in an increase of the Exercise Price then in effect. For the avoidance of doubt, no adjustment in the Exercise Price shall be made pursuant to this Section 2(a)(iii) as a result of any modification of the terms of any Options or Convertible Securities after their date of issuance.

(iv) Calculation of Consideration Received. In case any Option is issued in connection with the issuance or sale of other securities of the Company, together comprising one integrated transaction, (x) the Options will be deemed to have been issued for the Option Value of such Options and (y) the other securities issued or sold in such integrated transaction shall be deemed to have been issued or sold for the difference of (I) the aggregate consideration received by the Company less any consideration paid or payable by the Company pursuant to the terms of such other securities of the Company, less (II) the Option Value of such Options; *provided*, that if the value determined pursuant to clause (y) above would result in a value less than the par value of the Common Stock, then the other securities issued or sold in such integrated transaction shall be deemed to have been issued or sold for the par value of the Common Stock. If any shares of Common Stock, Options or Convertible Securities are issued or sold or deemed to have been issued or sold for cash, the consideration received therefor will be deemed to be the net amount received by the Company therefor. If any shares of Common Stock, Options or Convertible Securities are issued or sold for a consideration other than cash, the amount of such consideration received by the Company will be the fair value of such consideration, except where such consideration consists of publicly traded securities, in which case the amount of consideration received by the Company will be the Closing Sale Price of such publicly traded securities on the date of receipt of such publicly traded securities. If any shares of Common Stock, Options or Convertible Securities are issued to the owners of the non-surviving entity in connection with any merger in which the Company is the surviving entity, the amount of consideration therefor will be deemed to be the fair value of such portion of the net assets and business of the non-surviving entity as is attributable to such shares of Common Stock, Options or Convertible Securities, as the case may be. The fair value of any consideration other than cash or publicly traded securities will be determined jointly by the Company and the Required Holders. If such parties are unable to reach agreement within ten (10) days after the occurrence of an event requiring valuation (the “**Valuation Event**”), the fair value of such consideration will be determined within five (5) Business Days after the tenth (10th) day following the Valuation Event by an independent, reputable appraiser jointly selected by the Company and the Required Holders. The determination of such appraiser shall be final and binding upon all parties absent manifest error and the fees and expenses of such appraiser shall be borne by the Company.

(v) Record Date. If the Company takes a record of the holders of Common Stock for the purpose of entitling them (A) to receive a dividend or other distribution payable in shares of Common Stock, Options or in Convertible Securities or (B) to subscribe for or purchase shares of Common Stock, Options or Convertible Securities, then such record date will be deemed to be the date of the issuance or sale of the shares of Common Stock deemed to have been issued or sold upon the declaration of such dividend or the making of such other distribution or the date of the granting of such right of subscription or purchase, as the case may be.

(vi) No Modification. So long as any of the Warrants are outstanding, the Company shall not amend, modify or change the terms of any Options or Convertible Securities (whether issued on, prior or after the Subscription Date) to lower the exercise price or conversion price thereof.

(b) Voluntary Adjustment by Company. The Company may at any time during the term of this Warrant reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the Board of Directors of the Company.

(c) Adjustment upon Subdivision or Combination of Common Stock. If the Company at any time on or after the Subscription Date subdivides (by any stock split, stock dividend, recapitalization or otherwise) one or more classes of its outstanding shares of Common Stock into a greater number of shares, the Exercise Price in effect immediately prior to such subdivision will be proportionately reduced and the number of Warrant Shares will be proportionately increased. If the Company at any time on or after the Subscription Date combines (by combination, reverse stock split or otherwise) one or more classes of its outstanding shares of Common Stock into a smaller number of shares, the Exercise Price in effect immediately prior to such combination will be proportionately increased and the number of Warrant Shares will be proportionately decreased. Any adjustment under this Section 2(c) shall become effective at the close of business on the date the subdivision or combination becomes effective.

3. RIGHTS UPON DISTRIBUTION OF ASSETS. In addition to any adjustments pursuant to Section 2 above, if, on or after the Subscription Date and on or prior to the Expiration Date, the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property, options, evidence of indebtedness or any other assets by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “**Distribution**”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (*provided, however*, that to the extent that the Holder's right to participate in any such Distribution would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Distribution to such extent (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

4. PURCHASE RIGHTS; FUNDAMENTAL TRANSACTIONS.

(a) Purchase Rights. In addition to any adjustments pursuant to Section 2 above, if at any time on or after the Subscription Date and on or prior to the Expiration Date the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock (the “**Purchase Rights**”), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights that the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the grant, issuance or sale of such Purchase Rights (*provided, however*, that to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Purchase Right to such extent (and shall not be entitled to beneficial ownership of such Common Stock as a result of such Purchase Right (and beneficial ownership) to such extent) and such Purchase Right to such extent shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right to be held similarly in abeyance) to the same extent as if there had been no such limitation).

(b) Fundamental Transaction. The Company shall not enter into or be party to a Fundamental Transaction unless the Successor Entity assumes in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 4(b), including agreements to deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant, including, without limitation, that is exercisable for a corresponding number of shares of capital stock equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price that applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such adjustments to the number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction). Upon the consummation of each Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for the Company (so that from and after the date of the applicable Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein. Upon consummation of each Fundamental Transaction, the Successor Entity shall deliver to the Holder confirmation that there shall be issued upon exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction, in lieu of the shares of Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of this Warrant prior to the applicable Fundamental Transaction, such shares of common stock (or its equivalent) of the Successor Entity (including its Parent Entity) that the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant), as adjusted in accordance with the provisions of this Warrant. Notwithstanding the foregoing, and without limiting Section 1(f) hereof, the Holder may elect, at its sole option, by delivery of written notice to the Company to waive this Section 4(b) to permit the Fundamental Transaction without the assumption of this Warrant. In addition to and not in substitution for any other rights hereunder, prior to the consummation of each Fundamental Transaction pursuant to which holders of shares of Common Stock are entitled to receive securities or other assets with respect to or in exchange for shares of Common Stock (a “Corporate Event”), the Company shall make appropriate provision to insure that the Holder will thereafter have the right to receive upon an exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction but prior to the Expiration Date, in lieu of the shares of the Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of the Warrant prior to such Fundamental Transaction, such shares of stock, securities, cash, assets or any other property whatsoever (including warrants or other purchase or subscription rights) (collectively, the “Corporate Event Consideration”) that the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant). The provision made pursuant to the preceding sentence shall be in a form and substance reasonably satisfactory to the Holder. The provisions of this Section 4(b) shall apply similarly and equally to successive Fundamental Transactions and Corporate Events. Notwithstanding the foregoing, in the event of a Change of Control, at the request of the Holder delivered before the 30th day after such Change of Control, the Company (or the Successor Entity) shall purchase this Warrant from the Holder by paying to the Holder, within five (5) Business Days after such request (or, if later, on the effective date of the Change of Control), an amount equal to the Black Scholes Value of the remaining unexercised portion of this Warrant on the effective date of such Change of Control, payable in cash; *provided, however*, that, if the Change of Control is not within the Company’s control, including not approved by the Company’s Board of Directors, the Holder shall only be entitled to receive from the Company or any Successor Entity, as of the date of consummation of such Change of Control, the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of this Warrant, that is being offered and paid to the holders of Common Stock of the Company in connection with the Change of Control, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Change of Control.

5. NONCIRCUMVENTION. The Company hereby covenants and agrees that the Company will not, by amendment of its Certificate of Incorporation or Bylaws, or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issuance or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and will at all times in good faith carry out all of the provisions of this Warrant and take all action as may be required to protect the rights of the Holder. Without limiting the generality of the foregoing, the Company (i) shall not increase the par value of any shares of Common Stock receivable upon the exercise of this Warrant above the Exercise Price then in effect, (ii) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable shares of Common Stock upon the exercise of this Warrant, and (iii) shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of the Warrants then outstanding (without regard to any limitations on exercise).

6. WARRANT HOLDER NOT DEEMED A STOCKHOLDER. Except as otherwise specifically provided herein, the Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of capital stock of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares that such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company. Notwithstanding this Section 6, the Company shall provide the Holder with copies of the same notices and other information given to the stockholders of the Company generally, contemporaneously with the giving thereof to the stockholders.

7. REISSUANCE OF WARRANTS.

(a) Transfer of Warrant. If this Warrant is to be transferred, the Holder shall surrender this Warrant to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Warrant (in accordance with Section 7(d)), registered as the Holder may request, representing the right to purchase the number of Warrant Shares being transferred by the Holder and, if less than the total number of Warrant Shares then underlying this Warrant is being transferred, a new Warrant (in accordance with Section 7(d)) to the Holder representing the right to purchase the number of Warrant Shares not being transferred.

(b) Lost, Stolen or Mutilated Warrant. Upon receipt by the Company of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant, and, in the case of loss, theft or destruction, of any indemnification undertaking by the Holder to the Company in customary form (but without the obligation to post a bond) and, in the case of mutilation, upon surrender and cancellation of this Warrant, the Company shall execute and deliver to the Holder a new Warrant (in accordance with Section 7(d)) representing the right to purchase the Warrant Shares then underlying this Warrant.

(c) Exchangeable for Multiple Warrants. This Warrant is exchangeable, upon the surrender hereof by the Holder at the principal office of the Company, for a new Warrant or Warrants (in accordance with Section 7(d)) representing in the aggregate the right to purchase the number of Warrant Shares then underlying this Warrant, and each such new Warrant will represent the right to purchase such portion of such Warrant Shares as is designated by the Holder at the time of such surrender.

(d) Issuance of New Warrants. If this Warrant is not held in global form through DTC (or any successor depository), whenever the Company is required to issue a new Warrant pursuant to the terms of this Warrant, such new Warrant (i) shall be of like tenor with this Warrant, (ii) shall represent, as indicated on the face of such new Warrant, the right to purchase the Warrant Shares then underlying this Warrant (or in the case of a new Warrant being issued pursuant to Section 7(a) or Section 7(c), the Warrant Shares designated by the Holder that, when added to the number of shares of Common Stock underlying the other new Warrants issued in connection with such issuance, does not exceed the number of Warrant Shares then underlying this Warrant), (iii) shall have an issuance date, as indicated on the face of such new Warrant that is the same as the Issuance Date, and (iv) shall have the same rights and conditions as this Warrant.

(e) Warrant Register. If this Warrant is held in global form through DTC (or any successor depository), the Warrant Agent shall register this Warrant, upon records to be maintained by the Warrant Agent for that purpose (the “**Warrant Register**”), in the name of the record Holder hereof from time to time. If this Warrant is not held in global form through DTC (or any successor depository), the Company and the Warrant Agent may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

8. **NOTICES**. Whenever notice is required to be given under this Warrant, including, without limitation, an Exercise Notice, unless otherwise provided herein, such notice shall be given in writing, (i) if delivered (a) from within the domestic United States, by first-class registered or certified airmail, or nationally recognized overnight express courier, postage prepaid, electronic mail or by facsimile or (b) from outside the United States, by International Federal Express, electronic mail or facsimile, and (ii) will be deemed given (A) if delivered by first-class registered or certified mail domestic, three (3) Business Days after so mailed, (B) if delivered by nationally recognized overnight carrier, one (1) Business Day after so mailed, (C) if delivered by International Federal Express, two (2) Business Days after so mailed and (D) at the time of transmission, if delivered by electronic mail to each of the email addresses specified in this Section 8 prior to 5:00 p.m. (New York time) on a Trading Day, (E) the next Trading Day after the date of transmission, if delivered by electronic mail to each of the email addresses specified in this Section 8 on a day that is not a Trading Day or later than 5:00 p.m. (New York time) on any Trading Day and (F) if delivered by facsimile, upon electronic confirmation of receipt of such facsimile, and will be delivered and addressed as follows:

(i) if to the Company, to:
Outlook Therapeutics, Inc.
7 Clarke Drive
Cranbury, NJ 08512
Attn: Lawrence A. Kenyon

(ii) if to the Holder, at such address or other contact information delivered by the Holder to Company or as is on the books and records of the Company.

The Company shall provide the Holder with prompt written notice of all actions taken pursuant to this Warrant, including in reasonable detail a description of such action and the reason therefor. Without limiting the generality of the foregoing, the Company will give written notice to the Holder (i) immediately upon any adjustment of the Exercise Price, setting forth in reasonable detail, and certifying, the calculation of such adjustment and (ii) at least fifteen (15) days prior to the date on which the Company closes its books or takes a record (A) with respect to any dividend or distribution upon the shares of Common Stock, (B) with respect to any grants, issuances or sales of any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property to holders of shares of Common Stock or (C) for determining rights to vote with respect to any Fundamental Transaction, dissolution or liquidation; *provided* in each case that such information shall be made known to the public prior to or in conjunction with such notice being provided to the Holder. It is expressly understood and agreed that the time of exercise specified by the Holder in each Exercise Notice shall be definitive and may not be disputed or challenged by the Company.

9. AMENDMENT AND WAIVER. Except as otherwise provided herein, the provisions of this Warrant may be amended or waived and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

10. GOVERNING LAW; JURISDICTION; JURY TRIAL. This Warrant shall be governed by and construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Warrant shall be governed by, the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. The Company hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in The City of New York, Borough of Manhattan, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. The Company hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to the Company at the address set forth in Section 8(i) above or such other address as the Company subsequently delivers to the Holder and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Nothing contained herein shall be deemed or operate to preclude the Holder from bringing suit or taking other legal action against the Company in any other jurisdiction to collect on the Company's obligations to the Holder, to realize on any collateral or any other security for such obligations, or to enforce a judgment or other court ruling in favor of the Holder. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding. **THE COMPANY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS WARRANT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

11. DISPUTE RESOLUTION. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall submit the disputed determinations or arithmetic calculations via facsimile or electronic mail within two (2) Business Days of receipt of the Exercise Notice or other event giving rise to such dispute, as the case may be, to the Holder. If the Holder and the Company are unable to agree upon such determination or calculation of the Exercise Price or the Warrant Shares within three (3) Business Days of such disputed determination or arithmetic calculation being submitted to the Holder, then the Company shall, within two (2) Business Days submit via facsimile or electronic mail (a) the disputed determination of the Exercise Price to an independent, reputable investment bank selected by the Company and approved by the Holder or (b) the disputed arithmetic calculation of the Warrant Shares to the Company's independent, outside accountant. The Company shall cause at its expense the investment bank or the accountant, as the case may be, to perform the determinations or calculations and notify the Company and the Holder of the results no later than ten (10) Business Days from the time it receives the disputed determinations or calculations. Such investment bank's or accountant's determination or calculation, as the case may be, shall be binding upon all parties absent demonstrable error.

12. REMEDIES, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Warrant shall be cumulative and in addition to all other remedies available under this Warrant and any other Transaction Documents, at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Warrant. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the holder of this Warrant shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

13. TRANSFER. This Warrant and the Warrant Shares may be offered for sale, sold, transferred, pledged or assigned without the consent of the Company.

14. SEVERABILITY; CONSTRUCTION; HEADINGS. If any provision of this Warrant is prohibited by law or otherwise determined to be invalid or unenforceable by a court of competent jurisdiction, the provision that would otherwise be prohibited, invalid or unenforceable shall be deemed amended to apply to the broadest extent that it would be valid and enforceable, and the invalidity or unenforceability of such provision shall not affect the validity of the remaining provisions of this Warrant so long as this Warrant as so modified continues to express, without material change, the original intentions of the parties as to the subject matter hereof and the prohibited nature, invalidity or unenforceability of the provision(s) in question does not substantially impair the respective expectations or reciprocal obligations of the parties or the practical realization of the benefits that would otherwise be conferred upon the parties. The parties will endeavor in good faith negotiations to replace the prohibited, invalid or unenforceable provision(s) with a valid provision(s), the effect of which comes as close as possible to that of the prohibited, invalid or unenforceable provision(s). This Warrant shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any Person as the drafter hereof. The headings of this Warrant are for convenience of reference and shall not form part of, or affect the interpretation of, this Warrant.

15. DISCLOSURE. Upon receipt or delivery by the Company of any notice in accordance with the terms of this Warrant, unless the Company has in good faith determined that the matters relating to such notice do not constitute material, nonpublic information relating to the Company or its subsidiaries, the Company shall contemporaneously with any such receipt or delivery publicly disclose such material, nonpublic information on a Current Report on Form 8-K or otherwise. In the event that the Company believes that a notice contains material, nonpublic information relating to the Company or its subsidiaries, the Company so shall indicate to such Holder contemporaneously with delivery of such notice, and in the absence of any such indication, the Holder shall be allowed to presume that all matters relating to such notice do not constitute material, nonpublic information relating to the Company or its subsidiaries.

16. WARRANT AGENT AGREEMENT. If this Warrant is held in global form through DTC (or any successor depositary), this Warrant is issued subject to the Warrant Agent Agreement. To the extent any provision of this Warrant conflicts with the express provisions of the Warrant Agent Agreement, the provisions of this Warrant shall govern and be controlling.

17. CERTAIN DEFINITIONS. For purposes of this Warrant, the following terms shall have the following meanings:

(a) “**Affiliate**” means, with respect to any Person, any other Person that directly or indirectly controls, is controlled by, or is under common control with, such Person, it being understood for purposes of this definition that “control” of a Person means the power directly or indirectly either to vote 10% or more of the stock having ordinary voting power for the election of directors of such Person or direct or cause the direction of the management and policies of such Person whether by contract or otherwise.

(b) “**Approved Stock Plan**” means any employee benefit plan that has been approved by a majority of the disinterested members of the Board of Directors of the Company, pursuant to which the Company’s securities may be issued to any employee, officer or director for services provided to the Company.

(c) “**Attribution Parties**” means, collectively, the following Persons and entities: (i) any investment vehicle, including, any funds, feeder funds or managed accounts, currently, or from time to time after the Subscription Date, directly or indirectly managed or advised by the Holder’s investment manager or any of its Affiliates or principals, (ii) any direct or indirect Affiliates of the Holder or any of the foregoing, (iii) any Person acting or who could be deemed to be acting as a Group together with the Holder or any of the foregoing and (iv) any other Persons whose beneficial ownership of the Company’s Common Stock would or could be aggregated with the Holder’s and the other Attribution Parties for purposes of Section 13(d) of the 1934 Act. For clarity, the purpose of the foregoing is to subject collectively the Holder and all other Attribution Parties to the Maximum Percentage.

(d) “**Bid Price**” means, for any security as of the particular time of determination, the bid price for such security on the Principal Market as reported by Bloomberg as of such time of determination, or, if the Principal Market is not the principal securities exchange or trading market for such security, the bid price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg as of such time of determination, or if the foregoing does not apply, the bid price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg as of such time of determination, or, if no bid price is reported for such security by Bloomberg as of such time of determination, the average of the bid prices of any market makers for such security as reported in the “pink sheets” by OTC Markets Group Inc. (formerly Pink Sheets LLC) as of such time of determination. If the Bid Price cannot be calculated for a security as of the particular time of determination on any of the foregoing bases, the Bid Price of such security as of such time of determination shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 11. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during such period.

(e) “**Black Scholes Value**” means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg determined as of the day immediately following the first public announcement of the applicable Change of Control, or, if the Change of Control is not publicly announced, the date the Change of Control is consummated, for pricing purposes and reflecting (i) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of this Warrant as of such date of request, (ii) an expected volatility equal to 100%, (iii) the underlying price per share used in such calculation shall be the greater of (a) the highest Weighted Average Price during the five (5) Trading Days prior to the closing of the Change of Control and (b) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Change of Control, (iv) a zero cost of borrow and (v) a 360 day annualization factor.

(f) “**Bloomberg**” means Bloomberg Financial Markets.

(g) “**Business Day**” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed.

(h) “**Change of Control**” means any Fundamental Transaction other than (i) any reorganization, recapitalization or reclassification of the Common Stock in which holders of the Company’s voting power immediately prior to such reorganization, recapitalization or reclassification continue after such reorganization, recapitalization or reclassification to hold publicly traded securities and, directly or indirectly, are, in all material respect, the holders of the voting power of the surviving entity (or entities with the authority or voting power to elect the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities) after such reorganization, recapitalization or reclassification, (ii) pursuant to a migratory merger effected solely for the purpose of changing the jurisdiction of incorporation of the Company or (iii) a merger in connection with a bona fide acquisition by the Company of any Person in which (x) the gross consideration paid, directly or indirectly, by the Company in such acquisition is not greater than 40% of the Company’s market capitalization as calculated on the date of the consummation of such merger and (y) such merger does not contemplate a change to the identity of a majority of the board of directors of the Company. Notwithstanding anything herein to the contrary, any transaction or series of transaction that, directly or indirectly, results in the Company or the Successor Entity not having Common Stock or common stock, as applicable, registered under the 1934 Act and listed on an Eligible Market shall be deemed a Change of Control.

(i) “**Closing Bid Price**” and “**Closing Sale Price**” means, for any security as of any date, the last closing bid price and last closing trade price, respectively, for such security on the Principal Market, as reported by Bloomberg, or, if the Principal Market begins to operate on an extended hours basis and does not designate the closing bid price or the closing trade price, as the case may be, then the last bid price or the last trade price, respectively, of such security prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Principal Market is not the principal securities exchange or trading market for such security, the last closing bid price or last trade price, respectively, of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the last closing bid price or last trade price, respectively, of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no closing bid price or last trade price, respectively, is reported for such security by Bloomberg, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. (formerly Pink OTC Markets Inc.). If the Closing Bid Price or the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price or the Closing Sale Price, as the case may be, of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11. All such determinations to be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

(j) “**Common Stock**” means (i) the Company's Common Stock, par value \$0.01 per share, and (ii) any capital stock into which such Common Stock shall have been changed or any capital stock resulting from a reclassification of such Common Stock.

(k) “**Convertible Securities**” means any stock or securities (other than Options) directly or indirectly convertible into or exercisable or exchangeable for shares of Common Stock.

(l) “**Eligible Market**” means The NASDAQ Capital Market, the NYSE American LLC, The NASDAQ Global Select Market, The NASDAQ Global Market or The New York Stock Exchange, Inc.

(m) “**Excluded Securities**” means any shares of Common Stock issued or issuable, or deemed issued or issuable pursuant to Section 2(a): (i) in connection with any Approved Stock Plan, including, for the avoidance of doubt, the issuance of equity awards (including Options or Convertible Securities) pursuant to any such Approved Stock Plan after the Subscription Date, (ii) upon exercise of the Warrants, (iii) upon conversion, exercise, exchange or settlement of any Options or Convertible Securities that are outstanding on the day immediately preceding the Subscription Date, including, for the avoidance of doubt, the issuance of equity awards (including Options or Convertible Securities) pursuant to any such Approved Stock Plan after the Subscription Date, (iv) upon the issuance of “payment-in-kind” dividends of additional shares of the Company’s Series A-1 Convertible Preferred Stock, as contemplated by the terms thereof, and (v) pursuant to acquisitions, divestitures, licenses, partnerships, collaborations or strategic transactions approved by the Board of Directors or a majority of the members of a committee of directors established for such purposes; *provided* that any such issuance shall only be to a Person (or to the equity holders of a Person) that is, itself or through its subsidiaries, an operating company or an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities.

(n) “**Expiration Date**” means the date fifteen (15) months after the Initial Exercisability Date or, if such date falls on a day other than a Business Day or on which trading does not take place on the Principal Market (a “**Holiday**”), the next day that is not a Holiday.

(o) “**Fundamental Transaction**” means (A) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Subject Entity, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company or any of its “significant subsidiaries” (as defined in Rule 1-02 of Regulation S-X) to one or more Subject Entities, or (iii) make, or allow one or more Subject Entities to make, or allow the Company to be subject to or have its shares of Common Stock be subject to or party to one or more Subject Entities making, a purchase, tender or exchange offer that is accepted by the holders of at least either (x) 50% of the outstanding shares of Common Stock, (y) 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all Subject Entities making or party to, or Affiliated with any Subject Entities making or party to, such purchase, tender or exchange offer were not outstanding; or (z) such number of shares of Common Stock such that all Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such purchase, tender or exchange offer, become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (iv) consummate a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with one or more Subject Entities whereby all such Subject Entities, individually or in the aggregate, acquire, either (x) at least 50% of the outstanding shares of Common Stock, (y) at least 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all the Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such stock purchase agreement or other business combination were not outstanding; or (z) such number of shares of Common Stock such that the Subject Entities become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (v) reorganize, recapitalize or reclassify its shares of Common Stock, (B) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, allow any Subject Entity individually or the Subject Entities in the aggregate to be or become the “beneficial owner” (as defined in Rule 13d-3 under the 1934 Act), directly or indirectly, whether through acquisition, purchase, assignment, conveyance, tender, tender offer, exchange, reduction in outstanding shares of Common Stock, merger, consolidation, business combination, reorganization, recapitalization, spin-off, scheme of arrangement, reorganization, recapitalization or reclassification or otherwise in any manner whatsoever, of either (x) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock, (y) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock not held by all such Subject Entities as of the Subscription Date calculated as if any shares of Common Stock held by all such Subject Entities were not outstanding, or (z) a percentage of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock or other equity securities of the Company sufficient to allow such Subject Entities to effect a statutory short form merger or other transaction requiring other stockholders of the Company to surrender their Common Stock without approval of the stockholders of the Company or (C) directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, the issuance of or the entering into any other instrument or transaction structured in a manner to circumvent, or that circumvents, the intent of this definition in which case this definition shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this definition to the extent necessary to correct this definition or any portion of this definition that may be defective or inconsistent with the intended treatment of such instrument or transaction.

(p) “**Group**” means a “group” as that term is used in Section 13(d) of the 1934 Act and as defined in Rule 13d-5 thereunder.

(q) “**Option Value**” means the value of an Option based on the Black-Scholes Option Pricing model obtained from the “OV” function on Bloomberg determined as of the day of the most recent Closing Sale Price of the Common Stock prior to the public announcement of the pricing of the applicable Option (or, if the pricing is not publicly announced, on the most recent Closing Sale Price of the Common Stock prior to the pricing of the applicable Option) and reflecting (i) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of the applicable Option as of the applicable date of determination, (ii) an expected volatility equal to 50%, (iii) an underlying price per share equal to the most recent Closing Sale Price of the Common Stock prior to the public announcement of the pricing of the applicable Option (or, if the pricing is not publicly announced, on the most recent Closing Sale Price of the Common Stock prior to the pricing of the applicable Option), (iv) a zero cost of borrow and (v) a 360-day annualization factor.

(r) “**Options**” means any rights, warrants or options to subscribe for or purchase shares of Common Stock or Convertible Securities.

(s) “**Parent Entity**” of a Person means an entity that, directly or indirectly, controls the applicable Person, including such entity whose common stock or equivalent equity security is quoted or listed on an Eligible Market (or, if so elected by the Holder, any other market, exchange or quotation system), or, if there is more than one such Person or such entity, the Person or such entity designated by the Holder or in the absence of such designation, such Person or entity with the largest public market capitalization as of the date of consummation of the Fundamental Transaction or Change of Control.

(t) “**Person**” means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity and a government or any department or agency thereof.

(u) “**Principal Market**” means the principal securities exchange or securities market on which the Common Stock is then traded.

(v) “**Required Holders**” means the holders of the Warrants representing at least a majority of the shares of Common Stock underlying the Warrants then outstanding.

(w) “**Standard Settlement Period**” means the standard settlement period, expressed in a number of Trading Days, for the Company’s primary trading market or quotation system with respect to the Common Stock that is in effect on the date of receipt of an applicable Exercise Notice.

(x) “**Subject Entity**” means any Person, Persons or Group or any Affiliate or associate of any such Person, Persons or Group.

(y) “**Successor Entity**” means one or more Person or Persons (or, if so elected by the Holder, the Company or Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or Change of Control or one or more Person or Persons (or, if so elected by the Holder, the Company or the Parent Entity) with which such Fundamental Transaction or Change of Control shall have been entered into.

(z) “**Trading Day**” means any day on which the Common Stock is traded on the Principal Market, or, if the Principal Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market on which the Common Stock is then traded.

(aa) “**Transaction Documents**” means any agreement entered into by and between the Company and the Holder, as applicable.

(bb) “**Warrant Agent Agreement**” means that certain Warrant Agent Agreement, dated as of the Initial Exercise Date, between the Company and the Warrant Agent.

(cc) “**Warrant Agent**” means American Stock Transfer & Trust Company, LLC, a New York limited liability trust company.

(dd) “**Weighted Average Price**” means, for any security as of any date, the dollar volume-weighted average price for such security on the Principal Market during the period beginning at 9:30:01 a.m., New York time (or such other time as the Principal Market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as the Principal Market publicly announces is the official close of trading), as reported by Bloomberg through its “Volume at Price” function or, if the foregoing does not apply, the dollar volume-weighted average price of such security in the over-the-counter market on the electronic bulletin board for such security during the period beginning at 9:30:01 a.m., New York time (or such other time as such market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as such market publicly announces is the official close of trading), as reported by Bloomberg, or, if no dollar volume-weighted average price is reported for such security by Bloomberg for such hours, the average of the highest Closing Bid Price and the lowest closing ask price of any of the market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. (formerly Pink OTC Markets Inc.). If the Weighted Average Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Weighted Average Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11 with the term “Weighted Average Price” being substituted for the term “Exercise Price.” All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this 15-Month Warrant to Purchase Common Stock to be duly executed as of the Issuance Date set out above.

OUTLOOK THERAPEUTICS, INC.

By: _____
Name:
Title:

EXERCISE NOTICE

TO BE EXECUTED BY THE REGISTERED HOLDER TO EXERCISE THIS
15-MONTH WARRANT TO PURCHASE COMMON STOCK

OUTLOOK THERAPEUTICS, INC.

The undersigned holder hereby exercises the right to purchase _____ shares of Common Stock (“**Warrant Shares**”) of Outlook Therapeutics, Inc., a company organized under the laws of Delaware (the “**Company**”), evidenced by the attached 15-Month Warrant to Purchase Common Stock (the “**Warrant**”). Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Warrant.

1. Form of Exercise Price. The Holder intends that payment of the Exercise Price shall be made as:

_____ a “Cash Exercise” with respect to _____ Warrant Shares; and/or

_____ a “Cashless Exercise” with respect to _____ Warrant Shares.

2. Payment of Exercise Price. In the event that the holder has elected a Cash Exercise with respect to some or all of the Warrant Shares to be issued pursuant hereto, the holder shall pay the Aggregate Exercise Price in the sum of \$_____ to the Company in accordance with the terms of the Warrant.

3. Delivery of Warrant Shares. The Company shall deliver to the holder _____ Warrant Shares in accordance with the terms of the Warrant.

Date: _____, _____, _____

Name of Registered Holder

By: _____
Name:
Title:

ACKNOWLEDGMENT

The Company hereby acknowledges this Exercise Notice and hereby directs American Stock Transfer & Trust Company, LLC to issue the above indicated number of shares of Common Stock on or prior to the applicable Share Delivery Date.

OUTLOOK THERAPEUTICS, INC.

By: _____
Name:
Title:

Exhibit E

Form of Warrant Certificate Request Notice

WARRANT CERTIFICATE REQUEST NOTICE

To: American Stock Transfer & Trust Company, LLC, as Warrant Agent for Outlook Therapeutics, Inc. (the "Company")

The undersigned Holder of Five-Year Common Stock Purchase Warrants ("Warrants") in the form of Global Warrants issued by the Company hereby elects to receive a Definitive Certificate evidencing the Warrants held by the Holder as specified below:

1. Name of Holder of Warrants in form of Global Warrants: _____
2. Name of Holder in Definitive Certificate (if different from name of Holder of Warrants in form of Global Warrants):

3. Number of Warrants in name of Holder in form of Global Warrants: _____
4. Number of Warrants for which Definitive Certificate shall be issued: _____
5. Number of Warrants in name of Holder in form of Global Warrants after issuance of Definitive Certificate, if any: _____
6. Definitive Certificate shall be delivered to the following address:

The undersigned hereby acknowledges and agrees that, in connection with this Warrant Exchange and the issuance of the Definitive Certificate, the Holder is deemed to have surrendered the number of Warrants in form of Global Warrants in the name of the Holder equal to the number of Warrants evidenced by the Definitive Certificate.

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date:

Exhibit F

Form of Warrant Certificate Request Notice

WARRANT CERTIFICATE REQUEST NOTICE

To: American Stock Transfer & Trust Company, LLC, as Warrant Agent for Outlook Therapeutics, Inc. (the "Company")

The undersigned Holder of 15-Month Common Stock Purchase Warrants ("Warrants") in the form of Global Warrants issued by the Company hereby elects to receive a Definitive Certificate evidencing the Warrants held by the Holder as specified below:

1. Name of Holder of Warrants in form of Global Warrants: _____
2. Name of Holder in Definitive Certificate (if different from name of Holder of Warrants in form of Global Warrants):

3. Number of Warrants in name of Holder in form of Global Warrants: _____
4. Number of Warrants for which Definitive Certificate shall be issued: _____
5. Number of Warrants in name of Holder in form of Global Warrants after issuance of Definitive Certificate, if any: _____
6. Definitive Certificate shall be delivered to the following address:

The undersigned hereby acknowledges and agrees that, in connection with this Warrant Exchange and the issuance of the Definitive Certificate, the Holder is deemed to have surrendered the number of Warrants in form of Global Warrants in the name of the Holder equal to the number of Warrants evidenced by the Definitive Certificate.

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date:

CERTIFICATIONS

I, Lawrence A. Kenyon, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Outlook Therapeutics, 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. I am 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 my 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 my 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; and

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report my 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. I have disclosed, based on my 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: May 15, 2019

By: /s/ Lawrence A. Kenyon
Lawrence A. Kenyon
Chief Executive Officer and Chief Financial Officer
(Principal Executive, Financial, and Accounting Officer)

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report on Form 10-Q of Outlook Therapeutics, Inc. (the "Company") for the period ended March 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned officer of the Company hereby certifies, pursuant to 18 U.S.C. Section 1350, that to his knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 15, 2019

By /s/ Lawrence A. Kenyon
Lawrence A. Kenyon
Chief Executive Officer and Chief Financial Officer

"This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Outlook Therapeutics, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing."
