

**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 June 30, 2018

OR

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

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number: 001-36620

**NOVUS THERAPEUTICS, INC.**

(Exact Name of Registrant as Specified in its Charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)  
**19900 MacArthur Blvd., Suite 550**  
**Irvine, California**  
(Address of principal executive offices)

**20-1000967**  
(I.R.S. Employer  
Identification No.)

**92612**  
(Zip Code)

Registrant's telephone number, including area code:  
(949) 238-8090

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

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

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/> (Do not check if a smaller reporting company)	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

As of August 3, 2018, there were 9,422,143 shares of the Registrant's common stock outstanding.

### Forward-Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements that involve substantial risks and uncertainties. Any statements in this Quarterly Report on Form 10-Q about the company's future expectations, plans and prospects, including statements about its strategy, future operations, development of its product candidates, the review of strategic alternatives and the outcome of such review and other statements containing the words "believes," "anticipates," "plans," "expects," "estimates," "intends," "predicts," "projects," "targets," "could," "may," and similar expressions, constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, although not all forward-looking statements include such identifying words. Forward-looking statements include, but are not limited to statements regarding:

- expectations regarding the timing for the commencement and completion of product development or clinical trials;
- the rate and degree of market acceptance and clinical utility of the company's products;
- the company's commercialization, marketing and manufacturing capabilities and strategy;
- the company's intellectual property position and strategy;
- the company's ability to identify additional products or product candidates with significant commercial potential;
- the company's estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- developments relating to the company's competitors and industry; and
- the impact of government laws and regulations.

Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including: the ability to develop commercially viable product formulations; the sufficiency of the company's cash resources; the ability to obtain necessary regulatory and ethics approvals to commence additional clinical trials; whether data from early clinical trials will be indicative of the data that will be obtained from future clinical trials; whether the results of clinical trials will warrant submission for regulatory approval of any investigational product; whether any such submission will receive approval from the United States Food and Drug Administration or equivalent foreign regulatory agencies and, if we are able to obtain such approval for an investigational product, whether it will be successfully distributed and marketed. These risks and uncertainties, as well as other risks and uncertainties that could cause the company's actual results to differ significantly from the forward-looking statements contained herein, are described in greater detail in Item 1A. of Part II, *Risk Factors*. Any forward-looking statements contained in this Quarterly Report on Form 10-Q speak only as of the date hereof and not of any future date, and the company expressly disclaims any intent to update any forward-looking statements, whether as a result of new information, future events or otherwise.

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NOVUS THERAPEUTICS, INC.  
CONDENSED CONSOLIDATED BALANCE SHEETS  
(In thousands, except share data)

	June 30, 2018 (Unaudited)	December 31, 2017 (Note 2)
<b>ASSETS</b>		
Current assets:		
Cash	\$ 19,189	\$ 17,233
Restricted cash	—	70
Prepaid expenses and other current assets	1,889	1,697
Total current assets	21,078	19,000
Property and equipment, net	20	25
Goodwill	1,867	1,867
Total assets	<u>\$ 22,965</u>	<u>\$ 20,892</u>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable	\$ 706	\$ 418
Accrued severance	224	668
Accrued expenses and other liabilities	522	354
Total liabilities	1,452	1,440
Commitments and contingencies (Note 6)		
Stockholders' equity:		
Preferred stock, \$0.001 par value, 5,000,000 shares authorized and none issued and outstanding at June 30, 2018 and December 31, 2017	—	—
Common stock, \$0.001 par value, 200,000,000 shares authorized at June 30, 2018 and December 31, 2017; 9,407,024 and 7,110,414 shares issued and outstanding at June 30, 2018 and December 31, 2017, respectively	9	7
Additional paid-in capital	55,005	46,951
Accumulated deficit	(33,501)	(27,506)
Total stockholders' equity	21,513	19,452
Total liabilities and stockholders' equity	<u>\$ 22,965</u>	<u>\$ 20,892</u>

See accompanying notes to unaudited condensed consolidated financial statements.

NOVUS THERAPEUTICS, INC.  
**CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS**  
(In thousands, except share and per share data)  
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
<b>Operating expenses</b>				
Research and development	\$ 1,329	\$ 533	\$ 2,426	\$ 1,012
General and administrative	1,860	6,133	3,558	7,039
Total operating expenses	3,189	6,666	5,984	8,051
Loss from operations	(3,189)	(6,666)	(5,984)	(8,051)
Other income (expense), net	—	4	(11)	15
Net loss and comprehensive loss	\$ (3,189)	\$ (6,662)	\$ (5,995)	\$ (8,036)
Net loss per share, basic and diluted	\$ (0.34)	\$ (1.32)	\$ (0.70)	\$ (2.51)
Weighted-average common shares outstanding, basic and diluted	9,407,024	4,154,842	8,582,723	2,270,907

See accompanying notes to unaudited condensed consolidated financial statements.

NOVUS THERAPEUTICS, INC.  
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS  
(In thousands)  
(Unaudited)

	Six Months Ended June 30,	
	2018	2017
<b>Operating activities</b>		
Net loss	\$ (5,995)	\$ (8,036)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	5	16
Stock-based compensation	565	236
Loss on disposal of fixed assets	—	31
Changes in operating assets and liabilities:		
Prepaid expenses and other assets	(192)	(1,167)
Accounts payable and accrued expenses	12	7
Net cash used in operating activities	(5,605)	(8,913)
<b>Investing activities</b>		
Cash received from merger transaction	—	23,250
Proceeds from sale of equipment	—	8
Net cash provided by investing activities	—	23,258
<b>Financing activities</b>		
Proceeds from issuance of common stock, net	7,491	4,000
Proceeds from exercise of warrants	—	3,119
Net cash provided by financing activities	7,491	7,119
Net increase in cash and restricted cash	1,886	21,464
Cash and restricted cash at beginning of period	17,303	1,117
Cash and restricted cash at end of period	\$ 19,189	\$ 22,581
<b>Supplemental disclosure of cash flow information</b>		
Noncash activities:		
Conversion of promissory notes and interest to common stock	\$ —	\$ 3,447
Conversion of contingently issuable shares to common stock	\$ —	\$ 291
Issuance of common stock in merger	\$ —	\$ 23,375
Conversion of preferred stock to common stock	\$ —	\$ 27
Fair value of assets acquired and liabilities assumed in the merger:		
Fair value of assets acquired, excluding cash and restricted cash	\$ —	\$ 3,072
Fair value of liabilities assumed	—	(2,947)
Fair value of net assets acquired in the merger	\$ —	\$ 125

See accompanying notes to unaudited condensed consolidated financial statements.

**Note 1. Description of Business**

Novus Therapeutics, Inc. is a specialty pharmaceutical company focused on developing products for disorders of the ear, nose, and throat (“ENT”). Unless otherwise indicated, references to the terms the “combined company”, “Novus”, the “Company”, refer to Otic Pharma, Ltd. prior to the consummation of the Reverse Merger, and Novus Therapeutics, Inc., upon the consummation of the Reverse Merger described herein. The term “Tokai” refers to Tokai Pharmaceuticals, Inc., and its subsidiaries prior to the Reverse Merger.

**Reverse Merger**

On December 21, 2016, Tokai, a Delaware corporation, Otic Pharma, Ltd., a private limited company organized under the laws of the State of Israel (“Otic”), and the stockholders of Otic (each a “Seller” and collectively, the “Sellers”), entered into a Share Purchase Agreement (the “Share Purchase Agreement”), pursuant to which, among other things, each Seller agreed to sell to Tokai, and Tokai agreed to purchase from each Seller, all of the common and preferred shares of Otic (“Otic Shares”) owned by such Seller in exchange for the issuance of a certain number of shares of common stock of Tokai, as determined pursuant to the terms of the Share Purchase Agreement (the “Reverse Merger”). The parties amended and restated the Share Purchase Agreement on March 2, 2017.

On May 9, 2017, Tokai, Otic, and the Sellers closed the transaction contemplated by the Share Purchase Agreement, and subsequently effected a reverse stock split at a ratio of one-for-nine (see *Reverse Stock-Split* below). On a post-split basis, Tokai issued to the Sellers an aggregate of 4,027,693 shares of Tokai’s common stock in exchange for 840,115 Otic Shares. Following the completion of the Reverse Merger, the business being conducted by Tokai became primarily the business conducted by Otic. In connection with the Reverse Merger, the name of the surviving corporation was changed to “Novus Therapeutics, Inc.”

**Private Placement**

On January 31, 2017, Novus entered into a stock purchase agreement (the “Stock Purchase Agreement”) with certain purchasers named therein (the “Purchasers”), pursuant to which the Purchasers agreed to purchase approximately \$4.0 million of the Company’s common stock through the purchase of 400,400 shares of the Company’s common stock at a price of \$9.99 per share (the “Private Placement”). The Private Placement closed on May 10, 2017. After giving effect to the issuance of the shares in the Private Placement, the stockholders of Otic owned approximately 64% of the Company’s common stock.

**Note 2. Summary of Significant Accounting Policies**

**Basis of Presentation**

The accompanying unaudited financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) and Article 10 of Regulation S-X requirements as set forth by the Securities and Exchange Commission (“SEC”) for interim financial information and reflect all adjustments and disclosures, which are, in the opinion of management, of a normal and recurring nature, and considered necessary for a fair presentation of the financial information contained herein. Pursuant to these rules and regulations, the unaudited condensed consolidated financial statements do not include all information and notes necessary for a complete presentation of results of operations and comprehensive loss, financial position, and cash flows in conformity with GAAP.

The accompanying unaudited condensed consolidated financial statements and notes should be read in conjunction with the audited financial statements and accompanying notes of Novus for the year ended December 31, 2017 included in the Annual Report on Form 10-K filed by the Company with the SEC on April 2, 2018. The results of operations and comprehensive loss for the three and six months ended June 30, 2018 are not necessarily indicative of results expected for the full fiscal year or any other future period.

There have been no significant and material changes in our critical accounting policies and significant judgments and estimates during the three and six months ended June 30, 2018, except as described below.

**Principles of Consolidation**

Novus, a Delaware corporation, owns 100% of the issued and outstanding common stock or other ownership interest in Otic. Otic owns 100% of the issued and outstanding common stock or other ownership interest in its U.S. subsidiary, Otic Pharma, Inc.

The functional currency of the Company's foreign subsidiary is the U.S. Dollar; however, certain expenses, assets and liabilities are transacted at the local currency. These transactions are translated from the local currency into U.S. Dollars at exchange rates during or at the end of the reporting period.

All significant intercompany accounts and transactions among the entities have been eliminated from the condensed consolidated financial statements.

**Liquidity and Financial Condition**

The Company has experienced recurring net losses and negative cash flows from operating activities since its inception. The Company recorded a net loss of \$3.2 million and \$6.0 million for the three months and six months ended June 30, 2018, respectively. As of June 30, 2018, the Company had cash of \$19.2 million, working capital of \$19.6 million and an accumulated deficit of \$33.5 million. Due to continuing research and development activities, the Company expects to continue to incur net losses into the foreseeable future. In order to continue these activities, the Company may need to raise additional funds through future public or private debt and equity financings or strategic collaboration and licensing arrangements. If the Company issues equity or convertible debt securities to raise additional funding, its existing stockholders may experience dilution, it may incur significant financing costs, and the new equity or convertible debt securities may have rights, preferences and privileges senior to those of its existing stockholders. If the Company issues debt securities to raise additional funding, it would incur additional debt service obligations, it could become subject to additional restrictions limiting its ability to operate its business, and it may be required to further encumber its assets. Sufficient additional funding may not be available or be available on acceptable terms. If so, the Company may need to delay, reduce the scope of, or put on hold research and development activities while the Company seeks strategic alternatives.

The Company's ability to raise additional capital in the equity and debt markets is dependent on a number of factors, including, but not limited to, the market demand for the Company's common stock, which itself is subject to a number of development and business risks and uncertainties, as well as the uncertainty that the Company would be able to raise such additional capital at a price or on terms that are favorable to the Company.

The Company has performed an analysis and concluded substantial doubt does not exist with respect to the Company being able to continue as a going concern and the Company has sufficient cash resources to continue for a period of at least twelve months from the date of issuance of the accompanying unaudited condensed consolidated financial statements.

**Reverse Stock-Split**

On May 11, 2017, Novus effected a reverse stock-split of its issued and outstanding common stock and options for common stock at a ratio of one-for-nine. The Company filed an Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware effecting the reverse stock-split. The accompanying condensed consolidated financial statements and notes give retroactive effect to the reverse stock-split for all periods presented.

**Use of Estimates**

The preparation of the Company's financial statements in conformity with GAAP requires management to make informed estimates and assumptions that affect the reported amounts of assets, liabilities and expenses and the disclosure of contingent assets and liabilities in the Company's unaudited condensed consolidated financial statements and accompanying notes. The most significant estimates in the Company's financial statements relate to stock-based compensation, accruals for liabilities, carrying value of goodwill, and other matters that affect the condensed consolidated financial statements and related disclosures. Actual results could differ materially from those estimates under different assumptions or conditions and the differences may be material to the consolidated financial statements.



**Cash and Cash Equivalents**

Cash represents cash deposits held at financial institutions. The Company considers all liquid investments purchased with an original maturity of three months or less and that can be liquidated without prior notice or penalty to be cash equivalents. Cash equivalents are held for the purpose of meeting short-term liquidity requirements, rather than for investment purposes. The Company had no cash equivalents at June 30, 2018 and December 31, 2017.

**Restricted Cash**

Restricted cash represents cash required to be set aside as security for lease payments or to maintain a letter of credit for the benefit of the landlord for the Company's offices. The Company had restricted cash of \$0 and \$70,000 at June 30, 2018 and December 31, 2017, respectively.

**Concentration of Credit Risk and Other Risks and Uncertainties**

As of June 30, 2018 and December 31, 2017, all of the Company's long-lived assets were located in the United States.

Financial instruments that are subject to concentration of credit risk consist primarily of cash equivalents. The Company's policy is to invest cash in institutional money market funds to limit the amount of credit exposure. At times, the Company maintains cash equivalents in short-term money market funds and it has not experienced any losses on its cash equivalents.

The Company's products will require approval from the U.S. Food and Drug Administration ("FDA") and foreign regulatory agencies before commercial sales can commence. There can be no assurance that its products will receive any of these required approvals. The denial or delay of such approvals may impact the Company's business in the future.

The Company is subject to risks common to companies in the pharmaceutical industry, including, but not limited to, new technological innovations, clinical development risk, establishment of appropriate commercial partnerships, protection of proprietary technology, compliance with government and environmental regulations, uncertainty of market acceptance of products, product liability, the volatility of its stock price and the need to obtain additional financing.

**Business Combinations**

Accounting for acquisitions requires extensive use of estimates and judgment to measure the fair value of the identifiable tangible and intangible assets acquired, including in-process research and development and liabilities assumed. Additionally, the Company must determine whether an acquired entity is considered a business or a set of net assets because the excess of the purchase price over the fair value of net assets acquired can only be recognized as goodwill in a business combination. The Company accounted for the merger with Tokai as a business combination under the acquisition method of accounting. Consideration paid to acquire Tokai was measured at fair value and included the exchange of Tokai's common stock and preferred stock. The allocation of the purchase price resulted in recognition of intangible assets related to goodwill. The operating activity for Tokai, the acquiree for accounting purposes, was immediately integrated with Otic post-merger, therefore it is not practical to segregate results of operations related specifically to Tokai since the date of acquisition.

As a result of the Reverse Merger, historical common stock, stock options and additional paid-in capital, including share and per share amounts, have been retroactively adjusted to reflect the equity structure of the Company.

**Reportable Segments**

Operating segments under GAAP are defined as components of an enterprise about which separate financial information is available that is evaluated regularly by the Chief Operating Decision Maker ("CODM"), or decision-making group, in deciding how to allocate resources and in assessing performance. The CODM is the Company's Chief Executive Officer and the Company has determined that it operates in one business segment, which is developing products for disorders of the ear, nose, and throat.

**Goodwill**

Goodwill represents the difference between the consideration transferred and the fair value of the assets acquired and liabilities assumed under the acquisition method of accounting. Goodwill is not amortized but is evaluated for impairment during the last fiscal quarter of the year or if indicators of impairment exist that would, more likely than not, reduce the fair value from its carrying amount. The Company determined there were no impairment indicators as of June 30, 2018 and December 31, 2017.

**Long-Lived Assets**

Property and equipment are recorded at cost. Depreciation is computed using the straight-line method over the estimated useful lives of the respective assets. Additions, major renewals and improvements are capitalized and repair and maintenance costs are charged to expense as incurred. Leasehold improvements are amortized over the remaining life of the initial lease term or the estimated useful lives of the assets, whichever is shorter.

The carrying value of long-lived assets, including intangible assets, is evaluated whenever events or changes in business circumstances or the Company's planned use of long-lived assets indicate, based on undiscounted future operating cash flows, that their carrying amounts may not be fully recoverable or that their useful lives are no longer appropriate. When an indicator of impairment exists, undiscounted future operating cash flows of long-lived assets are compared to their respective carrying value. If the carrying value is greater than the undiscounted future operating cash flows of long-lived assets, the long-lived assets are written down to their respective fair values and an impairment loss is recorded. Fair value is determined primarily using the discounted cash flows expected to be generated from the use of assets. Significant management judgment is required in the forecast of future operating results that are used in the preparation of expected cash flows. No impairments of tangible assets have been identified during the periods presented.

**Research and Development Expenses**

Research and development expenses include personnel and facility-related expenses, outside contracted services including clinical trial costs, manufacturing and process development costs, research costs and other consulting services and non-cash stock-based compensation. Research and development costs are expensed as incurred. Amounts due under contracts with third parties may be either fixed fee or fee for service, and may include upfront payments, monthly payments and payments upon the completion of milestones or receipt of deliverables. Non-refundable advance payments under agreements are capitalized and expensed as the related goods are delivered or services are performed.

The Company's contracts with third parties to perform various clinical trial activities in the on-going development of potential products. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows to its vendors. Payments under the contracts depend on factors such as the achievement of certain events, successful enrollment of patients, and completion of portions of the clinical trial or similar conditions. The Company's accrual for clinical trials is based on estimates of the services received and efforts expended pursuant to contracts with clinical trial centers and clinical research organizations. These contracts may be terminated by the Company upon written notice and the Company is generally only liable for actual effort expended by the organizations to the date of termination, although in certain instances the Company may be further responsible for termination fees and penalties. The Company estimates its research and development expenses and the related accrual as of each balance sheet date based on the facts and circumstances known to the Company at that time. There have been no material adjustments to the Company's prior-period accrued estimates for clinical trial activities through June 30, 2018.

### Net Loss Per Share

Basic net loss per common share is calculated by dividing the net loss attributable to common stockholders by the weighted-average number of common shares outstanding during the period, without consideration for potentially dilutive securities. Diluted net loss per share is computed by dividing the net loss attributable to common stockholders by the weighted-average number of common shares and potentially dilutive securities outstanding for the period determined using the treasury-stock and if-converted methods. For purposes of the diluted net loss per share calculation, preferred stock, convertible notes and accrued interest, stock options, warrants and restricted stock units are considered to be potentially dilutive securities and are excluded from the calculation of diluted net loss per share because their effect would be anti-dilutive. Therefore, basic and diluted net loss per share was the same for the periods presented due to the Company's net loss position.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
	(In thousands, except share and per share data)			
Net loss available to stockholders of the company	\$ (3,189)	\$ (6,662)	\$ (5,995)	\$ (8,036)
Interest accumulated on preferred shares and on preferred shares contingently issuable for little or no cash	—	(98)	—	(328)
Net loss attributable to shareholders of preferred shares and to shareholders of preferred shares contingently issuable for little or no cash	—	1,279	—	2,666
Net loss used in the calculation of basic and diluted loss per share	\$ (3,189)	\$ (5,481)	\$ (5,995)	\$ (5,698)
Net loss per share, basic and diluted	\$ (0.34)	\$ (1.32)	\$ (0.70)	\$ (2.51)
Weighted-average number of common shares	9,407,024	4,154,842	8,582,723	2,270,907

The computation of diluted earnings per share excludes stock options, warrants, and restricted stock units that are anti-dilutive. For the three and six months ended June 30, 2018, common share equivalents of 996,983 shares and 949,204 shares were anti-dilutive, respectively. For the three and six months ended June 30, 2017, common share equivalents of 587,819 shares were anti-dilutive.

### Stock-based Compensation

For stock options granted to employees, the Company recognizes compensation expense for all stock-based awards based on the grant-date estimated fair value.

The fair value of stock options is determined using the Black-Scholes option pricing model, using assumptions which are subjective and require significant judgment and estimation by management. The risk-free rate assumption was based on observed yields from governmental zero-coupon bonds with an equivalent term. The expected volatility assumption was based on historical volatilities of a group of comparable industry companies whose share prices are publicly available. The peer group was developed based on companies in the pharmaceutical industry. The expected term of stock options represents the weighted-average period that the stock options are expected to be outstanding. Because the Company does not have historical exercise behavior, it determined the expected life assumption using the simplified method, which is an average of the options ordinary vesting period and the contractual term. The expected dividend assumption was based on the Company's history and expectation of dividend payouts. The Company has not paid and does not expect to pay dividends at any time in the foreseeable future. The Company recognizes forfeitures on an actual basis and as such did not estimate forfeitures to calculate stock-based compensation.

Stock-based compensation expense related to stock options granted to non-employees is recognized based on the fair value of the stock options, determined using the Black-Scholes option pricing model, as they are earned. The awards generally vest over the period the Company expects to receive services from the non-employee. Stock options granted to non-employees are subject to periodic revaluation over their vesting terms.

For the three and six months ended June 30, 2018, no excess tax benefits for tax deductions related to share-based awards were recognized in the accompanying condensed consolidated statements of operations and comprehensive loss as no stock options were exercised.

## **Income Taxes**

The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Tax law and rate changes are reflected in income in the period such changes are enacted. The Company includes interest and penalties related to income taxes, including unrecognized tax benefits, within income tax expense.

The Company's income tax returns are based on calculations and assumptions that are subject to examination by the Internal Revenue Service and other tax authorities. In addition, the calculation of the Company's tax liabilities involves dealing with uncertainties in the application of complex tax regulations. The Company recognizes liabilities for uncertain tax positions based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. While the Company believes it has appropriate support for the positions taken on its tax returns, the Company regularly assesses the potential outcomes of examinations by tax authorities in determining the adequacy of its provision for income taxes. The Company continually assesses the likelihood and amount of potential revisions and adjusts the income tax provision, income taxes payable and deferred taxes in the period in which the facts that give rise to a revision become known. For additional information, see *Note 7. Income Taxes* in the notes to the condensed consolidated financial statements.

## **Recently Issued Accounting Pronouncements**

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-02, *Leases (Topic 842)*. Under this guidance, an entity is required to recognize right-of-use assets and corresponding lease liabilities on its balance sheet and disclose key information about leasing arrangements. This guidance offers specific accounting guidance for a lessee, a lessor, and sale and leaseback transactions. Lessees and lessors are required to disclose qualitative and quantitative information about leasing arrangements to enable a user of the financial statements to assess the amount, timing and uncertainty of cash flows arising from leases. The Company will adopt the standard effective in the first quarter of 2019 and is currently assessing the impact of adopting this guidance on its condensed consolidated financial statements.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which modifies the measurement of expected credit losses of certain financial instruments. ASU No. 2016-13 will be effective for the Company beginning in its first quarter of 2020 and early adoption is permitted. The adoption of ASU No. 2016-13 is not expected to have a material impact on the Company's condensed consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04, *Intangibles – Goodwill and Other (Topic 350)*, which eliminates the requirement to calculate the implied fair value of goodwill to measure a goodwill impairment charge. Instead, entities will record an impairment charge based on the excess of a reporting unit's carrying amount over its fair value. The standard has tiered effective dates, starting in 2020 for calendar-year public business entities that meet the definition of an SEC filer. Early adoption is permitted for annual and interim goodwill impairment testing dates after January 1, 2017. The Company is currently assessing the impact and timing of adopting this guidance on its condensed consolidated financial statements.

In February 2018, the FASB issued ASU No. 2018-02, *Income Statement—Reporting Comprehensive Income (Topic 220)*, which allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the passing of H.R. 1/Public Law No. 115-97, commonly known as the Tax Cuts and Jobs Act (the "Act") and requires certain disclosures about stranded tax effects. The amendments in ASU No. 2018-02 are effective beginning in 2019, with early adoption permitted, and may be applied either in the period of adoption or retrospectively to each period in which the effect of the change in the U.S. federal corporate tax rate in the Act is recognized. The Company is currently assessing the impact and timing of adopting this guidance on its condensed consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, *Improvements to Nonemployee Share-Based Payment Accounting*, which expands the scope of Topic 718 *Compensation—Stock Compensation*, to include share-based payments issued to nonemployees for goods or services. Consequently, the accounting for share-based payments to nonemployees and employees will be substantially aligned. ASU No. 2018-07 supersedes Subtopic 505-50 *Equity—Equity-Based Payments to Non-Employees*. The amendments in ASU No. 2018-07 are effective beginning in 2020, with early adoption permitted, but no earlier than a company's adoption date of Topic 606 *Revenue from Contracts with Customers*. The Company is currently assessing the impact and timing of adopting this guidance on its condensed consolidated financial statements.

#### **Recently Adopted Accounting Pronouncements**

In January 2016, the FASB issued ASU No. 2016-01, *Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities*, which updates certain aspects of recognition, measurement, presentation, and disclosure of financial instruments. ASU No. 2016-01 was adopted by the Company in its first quarter of 2018 and did not have a material impact on its condensed consolidated financial statements as the Company does not currently hold any equity investments.

In October 2016, the FASB issued ASU No. 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfer of Assets Other than Inventory*, which requires the recognition of the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. ASU No. 2016-16 was adopted by the Company in its first quarter of 2018 and did not have a material impact on its condensed consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-01, *Clarifying the Definition of a Business (Topic 805)*, which clarifies and provides a more robust framework to use in determining when a set of assets and activities is a business. ASU No. 2017-01 was adopted by the Company in its first quarter of 2018 and will be applied prospectively. The impact of this guidance will be determined by the terms of any future acquisitions.

In May 2017, the FASB issued ASU No. 2017-09, *Scope of Modification Accounting*, which amends the scope of modification accounting for share-based payment arrangements, provides guidance on the types of changes to the terms or conditions of share-based payment awards to which an entity would be required to apply modification accounting under Accounting Standards Codification ("ASC") Topic 718 *Compensation – Stock Compensation*. ASU No. 2017-09 was adopted by the Company in its first quarter of 2018 and did not have a material impact on its condensed consolidated financial statements as it is not the Company's practice to change either the terms or conditions of share-based payment awards once they are granted.

In March 2018, the FASB issued ASU No. 2018-05, *Income Taxes (Topic 740): Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118*, which amended various SEC paragraphs pursuant to the issuance of SEC Staff Accounting Bulletin No. 118 ("SAB 118"). SAB 118 was issued by the SEC in December 2017 to provide immediate guidance for accounting implications of U.S. tax reform under the Act, which became effective for the Company on January 1, 2018. The Company has evaluated the potential impacts of SAB 118 and has applied this guidance to its condensed consolidated financial statements and related disclosures beginning the first quarter of 2018. For additional information on SAB 118 and the impacts of the Act on the Company's condensed consolidated financial statements and related disclosures, see *Note 7. Income Taxes* in the notes to the condensed consolidated financial statements.

No other new accounting pronouncement issued or effective during the fiscal period had or is expected to have a material impact on the Company's condensed consolidated financial statements or disclosures.

#### **Note 3. Reverse Merger**

The Company completed the Reverse Merger with Tokai as discussed in Note 1. Based on the terms of the Reverse Merger, the Company concluded that the transaction is a business combination pursuant to ASC Topic 805 *Business Combinations*. Otic was deemed the acquiring company for accounting purposes, and the transaction has been accounted for as a reverse acquisition under the acquisition method of accounting for business combinations in accordance with GAAP. Under the acquisition method of accounting, the total purchase price is allocated to the acquired tangible and intangible assets and assumed liabilities of Tokai based on their estimated fair values as of the Reverse Merger closing date. The excess of the purchase price over the fair value of assets acquired and liabilities assumed was allocated to goodwill.

On May 9, 2017, Tokai issued 4,027,693 shares of its common stock to the stockholders of Otic and the holders of warrants and options of Otic upon the exercise of such options and warrants in exchange for 840,115 Otic Shares. All warrants were exercised as of the merger date and after consummation of the Reverse Merger, Otic stockholders owned a majority of the fully diluted common stock of Novus Therapeutics, Inc.

#### **Purchase Consideration**

The purchase price for Tokai on May 9, 2017, the closing date of the Reverse Merger, was as follows (in thousands):

Fair value of Tokai common stock outstanding (1)	\$	14,486
Premium paid (2)		8,889
Purchase price	\$	<u>23,375</u>

- (1) Comprised of 2,515,739 shares of common stock outstanding at the date of the Reverse Merger based on the closing price of \$5.76 per share on May 9, 2017, as adjusted for the one-for-nine reverse stock-split on May 11, 2017.  
(2) Premium paid over fair value of common stock based on net tangible asset multiple of 1.08x book value of Tokai equity of \$21.5 million as of May 9, 2017.

#### **Allocation of Purchase Consideration**

The allocation of the estimated purchase price to the acquired assets and liabilities assumed of Tokai, based on their estimated fair values as of May 9, 2017, the close of the transaction, is as follows (in thousands):

Cash, cash equivalents, and restricted cash	\$	23,250
Prepays and other current assets		1,132
Property and equipment		73
Goodwill		1,867
Accounts payable, accrued expenses and other liabilities		<u>(2,947)</u>
Net assets acquired	\$	<u>23,375</u>

The Company engaged a third-party valuation firm to assist management in its analysis of the fair value of Tokai. All estimates, key assumptions, and forecasts were either provided by or reviewed by management. While the Company chose to utilize a third-party valuation firm, the fair value analysis and related valuations represent the conclusions of management and not the conclusions or statements of any third party. The excess of the total purchase price over the fair value of assets acquired and liabilities assumed was allocated to goodwill.

The Company believes that the historical values of Tokai's current assets and current liabilities approximate fair value based on the short-term nature of such items.

Goodwill, which relates principally to intangible assets that do not qualify for separate recognition under GAAP, was calculated as the difference between the fair value of the consideration expected to be transferred and the values assigned to the identifiable tangible and intangible assets acquired and liabilities assumed. Goodwill is not expected to be deductible for tax purposes.

#### **Pro Forma Results in Connection with Reverse Merger**

The operating activity for Tokai, the acquiree for accounting purposes, was immediately integrated with Otic post-merger, therefore it is not practical to segregate results of operations related specifically to Tokai since the date of acquisition.

The unaudited financial information in the following table summarizes the combined results of operations of the Company and Tokai, on a pro forma basis, as if the Reverse Merger had occurred at the beginning of the periods presented (in thousands):

	Three Months Ended June 30, 2017	Six Months Ended June 30, 2017
<b>Operating expenses</b>		
Research and development	\$ 686	\$ 1,471
General and administrative	2,592	5,474
Total operating expenses	3,278	6,945
Loss from operations	(3,278)	(6,945)
Other income, net	18	55
Net loss and other comprehensive loss	\$ (3,260)	\$ (6,890)
Net loss per share, basic and diluted	\$ (0.47)	\$ (0.99)
Weighted-average shares outstanding, basic and diluted	6,943,831	6,943,831

The above unaudited pro forma information was determined based on historical GAAP results of Otic and Tokai. The unaudited pro forma combined results are not necessarily indicative of what the Company's combined results of operations would have been if the acquisition was completed at the beginning of the periods presented. The unaudited pro forma combined net loss includes pro forma adjustments primarily relating to the following non-recurring items directly attributable to the business combination:

- Elimination of transaction costs of \$5.4 million and \$7.0 million incurred during the three and six months ended June 30, 2017, respectively. These amounts have been eliminated on a pro forma basis as they are not expected to have a continuing effect on the operating results of the combined company.
- An increase in the weighted-average shares outstanding for the period after giving effect to the issuance of Tokai common stock in connection with the Reverse Merger and Private Placement.

#### Note 4. Prepaid Expenses and Other Assets

Prepaid expenses and other assets consisted of the following at June 30, 2018 and December 31, 2017 (in thousands):

	June 30, 2018	December 31, 2017
Prepaid insurance	\$ 1,565	\$ 1,518
Prepaid other	309	161
Other current assets	15	18
Total prepaid expenses and other current assets	\$ 1,889	\$ 1,697

#### Note 5. Accrued Expenses and Other Liabilities

Accrued expenses and other liabilities consisted of the following as of June 30, 2018 and December 31, 2017 (in thousands):

	June 30, 2018	December 31, 2017
Accrued clinical	\$ 64	\$ 85
Accrued compensation and related expenses	100	—
Accrued professional services	171	158
Accrued vacation	135	111
Accrued other	52	—
Total accrued expenses and other liabilities	\$ 522	\$ 354

## Note 6. Commitments and Contingencies

### Operating Leases

The Company leases office space under various operating leases. Total rental expense for all operating leases in the accompanying condensed consolidated statements of operations and comprehensive loss was \$42,000 and \$141,000 for the three months ended June 30, 2018 and 2017, respectively, and \$84,000 and \$182,000 for the six months ended June 30, 2018 and 2017, respectively.

In February 2015, Tokai entered into a sublease for 15,981 square feet of office space in Boston, Massachusetts. The term of the sublease commenced on April 1, 2015 and expired on December 31, 2016 and was subsequently extended through July 31, 2018. In November 2017, the Company terminated the lease early and paid an additional \$455,000 in advance rent in conjunction with the lease termination.

In September 2015, Otic entered into a three-year operating lease for 5,197 square feet of office space in Irvine, California. The lease had an expiration date of August 31, 2018; however, the Company extended the term of the lease through September 30, 2021 by amending the office lease in April 2018.

Future payments under noncancelable extended operating leases having initial or remaining terms of one year or more are as follows for the remaining fiscal year and thereafter (in thousands):

2018 (remainder of)	\$	88
2019		187
2020		195
2021		152
Total minimum lease payments	\$	622

### Restricted Cash and Letter of Credit

The Company was required to maintain a letter of credit totaling \$70,000 for the benefit of the landlord of Tokai's Boston office. The landlord could draw against the letter of credit in the event of default by the Company. The Company held \$70,000 in restricted cash as part of current assets on the condensed consolidated balance sheet as of December 31, 2017. Although the Boston office lease was terminated in November 2017, the process to release the restricted cash was not completed as of December 31, 2017. On March 12, 2018, the restricted cash was released and transferred into general funds.

### Grants and Licenses

#### Israeli Innovation Authority Grant

From 2012 through 2015, the Company received grants in the amount of approximately \$537,000 from the Israeli Innovation Authority (previously the Office of Chief Scientist) of the Israeli Ministry of Economy and Industry designated for investments in research and development. The grants are linked to the U.S. Dollar and bear annual interest of LIBOR. The grants are to be repaid out of royalties from sales of the products developed by the Company from their investments in research and development. Because the Company has not yet earned revenues related to these investments and cannot estimate potential royalties, no liabilities related to these grants have been recorded as of each period presented. Repayment of the grant is contingent upon the successful completion of the Company's R&D programs and generating sales. The Company has no obligation to repay these grants, if the R&D program fails, is unsuccessful or aborted or if no sales are generated. The Company had not yet generated sales as of June 30, 2018; therefore, no liability was recorded for the repayment in the accompanying condensed consolidated financial statements.

#### Otodyne License Agreement

In November 2015, the Company entered into an exclusive license agreement with Scientific Development and Research, Inc. and Otodyne, Inc. (collectively, the "Licensors") granting it exclusive worldwide rights to develop and commercialize OP-02, a potential first-in-class treatment option for patients at risk for or with otitis media (middle ear inflammation with or without infection), which is often caused by Eustachian tube dysfunction. Under the terms of the agreement, the Company is obligated to use commercially reasonable efforts to seek approval for and commercialize at least one product for otitis media in the U.S. and key European markets (France, Germany, Italy, Spain, and the United Kingdom). The Company is responsible for prosecuting, maintaining, and enforcing all intellectual property and will be the sole owner



of improvements. Under the agreement with the Licensors, the Company paid license fees totaling \$750,000 and issued 9,780 common shares to the Licensors, which was expensed to research and development during the year ended December 31, 2015.

In December 2015, the Licensors completed transfer of all technology, including the active Investigational New Drug application (“IND”) to the Company. The Company is obligated to pay up to \$42.1 million in development and regulatory milestones if OP-02 is approved for three indications in the U.S., two in Europe, and two in Japan. The Company is also obligated to pay up to \$36.0 million in sales based milestones, beginning with sales exceeding \$1.0 billion in a calendar year. The Company is also obligated to pay a tiered royalty for a period up to eight years, on a country-by-country basis. The royalty ranges from a low-single to mid-single percentage of net sales. There were no milestones achieved during the six months ended June 30, 2018 or the year ended December 31, 2017.

#### *Terminated License Agreements*

In October 2013, the Company (through Tokai) entered into a master license agreement with the University of Maryland, Baltimore (“UMB”), pursuant to which, UMB granted the Company an exclusive, worldwide license, with the right to sublicense, and, under certain patents and patent applications to make, have made, use, sell, offer to sell and import certain anti-androgen steroids, including galeterone, for the prevention, diagnosis, treatment or control of any human or animal disease.

In January 2015, the Company (through Tokai) entered into an exclusive license agreement with The Johns Hopkins University (“Johns Hopkins”) pursuant to which Johns Hopkins granted the Company an exclusive, worldwide license under certain patents and patent applications, and a non-exclusive license under certain know-how, in each case with the right to sublicense, and to make, have made, use, sell, offer to sell and import certain assays to identify androgen receptor variants for use as a companion diagnostic with galeterone.

On October 5, 2017, the Company submitted notice of termination to UMB and John Hopkins. The Company no longer has any obligations to UMB as of December 4, 2017, and to John Hopkins as of January 3, 2018.

#### *Legal Matters*

The Company is involved in various lawsuits and claims arising in the ordinary course of business, including actions with respect to intellectual property, employment, and contractual matters. In connection with these matters, the Company assesses, on a regular basis, the probability and range of possible loss based on the developments in these matters. A liability is recorded in the financial statements if it is believed to be probable that a loss has been incurred and the amount of the loss can be reasonably estimated. Because litigation is inherently unpredictable and unfavorable results could occur, assessing contingencies is highly subjective and requires judgments about future events. The Company regularly reviews outstanding legal matters to determine the adequacy of the liabilities accrued and related disclosures. The amount of ultimate loss may differ from these estimates. Each matter presents its own unique circumstances, and prior litigation does not necessarily provide a reliable basis on which to predict the outcome, or range of outcomes, in any individual proceeding. Because of the uncertainties related to the occurrence, amount, and range of loss on any pending litigation or claim, the Company does not consider a liability probable and is currently unable to predict their ultimate outcome, and, with respect to any pending litigation or claim where no liability has been accrued, to make a meaningful estimate of the reasonably possible loss or range of loss that could result from an unfavorable outcome. In the event that opposing litigants in outstanding litigation proceedings or claims ultimately succeed at trial and any subsequent appeals on their claims, any potential loss or charges in excess of any established accruals, individually or in the aggregate, could have a material adverse effect on the Company’s business, financial condition, results of operations, and/or cash flows in the period in which the unfavorable outcome occurs or becomes probable, and potentially in future periods.

#### *Legal Proceedings*

##### *Doshi Action*

On August 1, 2016, a purported stockholder of Tokai filed a putative class action lawsuit in the U.S. District Court for the Southern District of New York against Tokai, Jodie P. Morrison, and Lee H. Kalowski, entitled *Doshi v. Tokai Pharmaceuticals, Inc., et al.*, No. 1:16-cv-06106 (“Doshi Action”). The plaintiff sought to represent a class of purchasers of Tokai securities between June 24, 2015, and July 25, 2016, and alleges that, in violation of the Securities Exchange Act of 1934 (“Exchange Act”) and Rule 10b-5 promulgated thereunder, defendants made false and misleading statements and omissions about Tokai’s clinical trials for its drug candidate, galeterone. The lawsuit sought, among other things, unspecified

compensatory damages, interest, costs, and attorneys' fees. On October 3, 2016, the case was transferred to the U.S. District Court for the District of Massachusetts. On September 28, 2017, this action was consolidated with *Garbowski, et al. v. Tokai Pharmaceuticals, Inc., et al.*, No. 1:16-cv-11963 (see below). On April 26, 2018, the Court found that the Doshi Action could not proceed as a putative class action because it lacked a lead plaintiff. On May 1, 2018, the plaintiff dismissed the Doshi Action without prejudice.

#### *Legal Proceedings Related to Tokai IPO*

On September 22, 2014, Tokai completed the initial public offering of its common stock (the "IPO"). Subsequent to the IPO, several lawsuits were filed against Tokai, Jodie P. Morrison, Lee H. Kalowski, Seth L. Harrison, Timothy J. Barberich, David A. Kessler, Joseph A. Yanchik, III, and the underwriters of the IPO. The lawsuits allege that, in violation of the Securities Act of 1933 ("Securities Act"), Tokai's registration statement for the IPO made false and misleading statements and omissions about Tokai's clinical trials for galaterone. Each lawsuit sought, among other things, unspecified compensatory damages, interest, costs, and attorneys' fees. Further details on each lawsuit are set forth below. The Company intends to vigorously defend against these claims. Given the uncertainty of litigation, the preliminary stage of these cases, and the legal standards that must be met for, among other things, success on the merits, the Company is unable to predict the ultimate outcome of these actions, and therefore it cannot estimate the reasonably possible loss or range of loss that may result from these actions.

- **Jackie888 Action.** On August 19, 2016, a purported stockholder of Tokai filed a putative class action lawsuit in the Superior Court of the State of California, County of San Francisco, entitled *Jackie888, Inc. v. Tokai Pharmaceuticals, Inc., et al.*, No. CGC-16-553796. The plaintiff sought to represent a class of purchasers of Tokai common stock in or traceable to Tokai's IPO. On October 19, 2016, the defendants moved to dismiss or stay the action on grounds of forum non conveniens, and certain individual defendants moved to quash the plaintiff's summons for lack of personal jurisdiction. On February 27, 2017, the Superior Court entered an order granting defendants' motion to stay the lawsuit. On May 24, 2018, the plaintiff dismissed its complaint in the Superior Court of the State of California and refiled its complaint in the Business Litigation Session of the Superior Court Department of the Suffolk County Trial Court, Massachusetts ("Massachusetts State Court"). On June 28, 2018, plaintiff Wu moved to consolidate the Jackie888 Action with the Wu Action (discussed below). On June 29, 2018, plaintiffs Jackie888 and Wu filed a consolidated complaint. On July 6, 2018, the Jackie888 Action was consolidated with the Wu Action. Pursuant to the schedule for defendants' motions to dismiss, defendants will move to dismiss the consolidated complaint by or on August 15, 2018, plaintiffs will oppose by or on, September 30, 2018, and defendants will file any replies in support of their motions on October 19, 2018. The court set a hearing for November 15, 2018 on defendants' motions to dismiss.
- **Garbowski Action.** On September 29, 2016, two purported stockholders of Tokai filed a putative class action lawsuit in the U.S. District Court for the District of Massachusetts, entitled *Garbowski, et al. v. Tokai Pharmaceuticals, Inc., et al.*, No. 1:16-cv-11963 ("Garbowski Action"). In addition to the Securities Act claims, this lawsuit also alleges that the defendants made false and misleading statements and omissions about Tokai's clinical trials for galaterone, in violation of the Exchange Act and Rule 10b-5 promulgated thereunder. The plaintiffs sought to represent a class of purchasers of Tokai common stock in or traceable to Tokai's IPO as well as a class of purchasers of Tokai common stock between September 17, 2014, and July 25, 2016. On September 28, 2017, this action was consolidated with the Doshi Action. On April 26, 2018, the Court found that the Garbowski Action could not proceed as a putative class action because it lacked a lead plaintiff. On May 9, 2018, the plaintiffs dismissed the Garbowski Action without prejudice.
- **Wu Action.** On December 5, 2016, a putative securities class action was filed in the Massachusetts State Court, entitled *Wu v. Tokai Pharmaceuticals, Inc., et al.*, 16-3725 BLS ("Wu Action"). The plaintiff seeks to represent a class of purchasers of Tokai common stock in or traceable to Tokai's IPO. On December 19, 2016, defendants removed the Wu Action to the U.S. District Court for the District of Massachusetts, where it was captioned *Wu v. Tokai Pharmaceuticals, Inc., et al.*, 16-cv-12550, and assigned to the same judge presiding over the Doshi and Garbowski Actions. On December 22, 2016, defendants filed a motion to consolidate the Wu Action with the Doshi and Garbowski Actions. On January 6, 2017, plaintiff filed a motion to remand the Wu Action to Massachusetts State Court. On September 28, 2017, the court stayed the case pending a decision by the *United States Supreme Court in Cyan, Inc. v. Beaver County Employees Retirement Fund*, S. Ct. Case No. 15-1439. On March 20, 2018, the United States Supreme Court ruled in *Cyan* that state courts have subject matter jurisdiction over covered class actions alleging only Securities Act claims and that such actions are not removable to federal court. On March 22, 2018, plaintiff moved for leave to submit the *Cyan* decision in support of plaintiff's remand motion. On March 27, 2018 the Wu Action was remanded to the Massachusetts State Court. On May 3, 2018, plaintiff filed an amended class action complaint. Following the re-filing of the Jackie888 Action in

Massachusetts State Court (discussed above), on June 28, 2018, plaintiff Wu moved to consolidate the Jackie888 Action with the Wu Action. On June 29, 2018, plaintiffs Jackie888 and Wu filed a consolidated complaint. On July 6, 2018, the Jackie888 Action was consolidated with the Wu Action. Pursuant to the schedule for defendants' motions to dismiss, defendants will move to dismiss the consolidated complaint by or on August 15, 2018, plaintiffs will oppose by or on, September 30, 2018, and defendants will file any replies in support of their motions on October 19, 2018. The court set a hearing for November 15, 2018 on defendants' motions to dismiss.

- **Angelos Action.** On July 25, 2017, a purported stockholder of Tokai filed a lawsuit in the U.S. District Court for the District of Massachusetts, entitled *Peter B. Angelos v. Tokai Pharmaceuticals, Inc., et al.*, No. 1:17-cv-11365-MLW. The case was assigned to the same judge who was then presiding over the Garbowski and Doshi Actions.

#### **Indemnification**

In the normal course of business, the Company enters into contracts and agreements that contain a variety of representations and warranties and provide for general indemnification. The Company's exposure under these agreements is unknown because it involves future claims that may be made against the Company but have not yet been made. To date, the Company has not paid any claims or been required to defend any action related to its indemnification obligations. However, the Company may record charges in the future because of these indemnification obligations. No amounts associated with such indemnifications have been recorded to date.

#### **Contingencies**

From time to time, the Company may have certain contingent liabilities that arise in the ordinary course of business activities. The Company accrues a liability for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated. There have been no contingent liabilities requiring accrual at June 30, 2018.

#### **Note 7. Income Taxes**

The Company is subject to income taxes under the Israeli and U.S. tax laws. The Company was subject to an Israeli corporate tax rate of 24% in the year 2017 and will be subject to an Israeli corporate tax rate of 23% in the year 2018 and thereafter. The Company was subject to a blended U.S. tax rate (federal as well as state corporate tax) of 35% in 2017 and will be subject to a blended U.S. tax rate of 21% in 2018.

On December 22, 2017, H.R. 1/Public Law No. 115-97, commonly known as the Tax Cuts and Jobs Act (the "Act"), was signed into law. The effects of this new federal legislation are recognized upon enactment, which is the date a bill is signed into law. The Act included numerous changes in existing tax law, including a permanent reduction in the federal corporate income tax rate from 35% to 21%, converting to a territorial tax system, and creating various income inclusion and expense limitation provisions. The rate reduction was effective beginning January 1, 2018. As a result of the Act, the Company has revalued its net deferred tax assets as of December 31, 2017 to reflect the rate reduction.

The SEC staff issued Staff Accounting Bulletin No. 118 ("SAB 118"), which provides guidance on accounting for the tax effects of the Act. SAB 118 provides a measurement period that should not extend beyond one year from the Act enactment date for companies to complete the accounting under ASC Topic 740 *Income Taxes*. In accordance with SAB 118, a company must reflect the income tax effects of those aspects of the Act for which the accounting under ASC 740 is complete. To the extent that a company's accounting for certain income tax effects of the Act is incomplete but it is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements. If a company cannot determine a provisional estimate to be included in the financial statements, it should continue to apply ASC 740 on the basis of the provisions of the tax laws that were in effect immediately before the enactment of the Act.

Due to insufficient guidance on certain aspects of the Act, such as officer's compensation, as well as uncertainty around the GAAP treatment associated with many other parts of the Act, such as the implementation of certain international provisions, the Company cannot be certain that all deferred tax assets and liabilities have been established for the future effects of the legislation. Therefore, the final accounting for these provisions is subject to change as further information becomes available and further analysis is complete. Additionally, given the uncertainty and complexity of these new international tax regimes, the Company is continuing to evaluate how these provisions will be accounted for under U.S. generally accepted accounting principles; therefore, the Company has not yet adopted an accounting policy for treating the effects of these provisions as either a component of income tax expense in the period the tax arises, or through adjusting its

deferred tax assets and liabilities to account for the estimated future impact of the special international tax regimes. There were no changes to provisional amounts during the second quarter remeasurement period.

#### **Note 8. Stockholders' Equity**

##### **Warrants**

During 2017, the following transactions represent the exercise of all outstanding warrants for the Company's preferred stock, for total proceeds of approximately \$3.1 million:

- In March 2017, OrbiMed Israel Partners Limited Partnership, a related party, exercised a warrant to purchase 978,561 shares of Preferred B shares of the Company at \$0.41 per share for an aggregate amount of approximately \$400,000.
- In May 2017, OrbiMed Israel Partners Limited Partnership, a related party, exercised warrants to purchase 6,458,628 shares of Preferred B shares of the Company at a price of \$0.41 per share for an aggregate amount of approximately \$2.6 million. Additionally, 51,477 shares of common stock were issued in a cashless exercise of warrants.
- In May 2017, Peregrine Management II Ltd., a related party, exercised warrants to purchase 192,454 shares of Preferred B shares at \$0.41 per share for an aggregate amount of approximately \$79,000. Additionally, 10,299 shares of common stock were issued in a cashless exercise of warrants.
- In May 2017, Pontifax, in a cashless exercise of its warrants, purchased 90,804 shares of the Company's common stock.
- In the first half of 2017, individual stockholders, in a cashless exercise, purchased 311,850 of the Company's preferred stock.

As of June 30, 2018 and December 31, 2017, no warrants were issued and outstanding.

##### **Equity Distribution Agreement**

On August 21, 2017, the Company entered into an equity distribution agreement (the "Equity Distribution Agreement") with Piper Jaffray & Co. ("Piper Jaffray"), as sales agent, pursuant to which the Company may offer and sell, from time to time, through Piper Jaffray, shares of the Company's common stock. In connection with the Equity Distribution Agreement on August 21, 2017, the Company filed a prospectus supplement (the "2017 Prospectus") under which the Company was permitted to offer and sell up to \$8.5 million in shares of its common stock. From October 2, 2017 through March 9, 2018, the Company sold 2,463,966 shares of its common stock through Piper Jaffray under the Equity Distribution Agreement and 2017 Prospectus for gross proceeds of approximately \$8.5 million. During the six months ended June 30, 2018, the Company received approximately \$7.5 million in proceeds, net of \$232,000 in offering costs.

No further sales will be made under the 2017 Prospectus.

##### **Note 9. Subsequent Events**

On July 23, 2018, the Company filed a new prospectus supplement under which the Company may offer and sell, from time to time, through Piper Jaffray, up to an additional \$9.8 million in shares of its common stock.

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

The unaudited interim financial statements and this Management’s Discussion and Analysis of Financial Condition and Results of Operations should be read together with our audited financial statements and accompanying notes for the year ended December 31, 2017 included in the Annual Report on Form 10-K filed by the Company with the SEC on April 2, 2018. In addition to historical information, this discussion and analysis contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Please see Part II, Item 1A. *Risk Factors* for a discussion of certain risk factors applicable to our business, financial condition, and results of operations. Operating results are not necessarily indicative of results that may occur for the full fiscal year or any other future period. The term “Otic Pharma” refers to Novus Therapeutics, Inc., prior to the consummation of the Reverse Merger. Unless otherwise indicated, references to the terms the “combined company”, “Novus”, the “Company”, “we”, “our” and “us” refer to Otic Pharma, prior to the consummation of the Reverse Merger and Novus Therapeutics, Inc., upon the consummation of the Reverse Merger described herein. The term “Tokai” refers to Tokai Pharmaceuticals, Inc. prior to the Reverse Merger.

### ABOUT NOVUS THERAPEUTICS

Novus Therapeutics, Inc. (“Novus”) is a specialty pharmaceutical company focused on developing products for disorders of the ear, nose, and throat (“ENT”). Novus has two technologies, each that has the potential to be developed for multiple ENT indications. The company’s lead product (OP-02) is a surfactant-based, combination drug product being developed as a potential first-in-class treatment option for patients at risk for, or with, otitis media (“OM” or middle ear inflammation with or without infection). Globally, OM affects more than 700 million adults and children every year. OM is a common disorder seen in pediatric practice, and in the United States is the most frequent reason children are prescribed antibiotics and undergo surgery. Novus also has a foam-based drug delivery technology (OP-01), which may be developed in the future to deliver drugs into the ear, nasal, and sinus cavities.

#### OP-02 Surfactant Program

OP-02 is being developed as a potential first-in-class treatment option for OM, which is often caused by Eustachian tube dysfunction (“ETD”). OP-02 is a drug-device combination product comprised of a novel formulation of a surfactant (dipalmitoylphosphatidylcholine (“DPPC”)) and a spreading agent (cholesteryl palmitate (“CP”)) suspended in propellant. The product is administered intranasally via a metered-dose inhaler and is intended to be used to restore the normal physiologic activity of the Eustachian tube (“ET”), which is a small tube that connects from the chamber of the middle ear to the back of the nasopharynx. Together DPPC and CP are designed to effectively absorb to the air-liquid interface of the mucosa and reduce the interfacial surface tension of the ET, which reduces passive pressure required for the ET to open. In other words, OP-02 is intended to promote ‘de-sticking’ of the ET so that ventilation and drainage of the middle ear may occur.

Novus expects to initiate a phase 1 clinical program of OP-02 in 2018. The phase 1 program will include a single study to evaluate repeated intranasal doses of OP-02 in healthy subjects plus additional phase 1 studies to explore safety and efficacy in patients with OM. Upon completion of the phase 1 program, Novus intends to initiate phase 2 and 3 studies of OP-02, with an initial focus on a development program that, if successful, will lead to registration of OP-02 in North America and key European markets as a product to treat OM and prevent OM in children. Additional development activities to support registration in other countries and/or for other OM/ETD disorders, or in other patient populations, may occur in the future.

#### OP-01 Foam Platform

OP-01 is a foam-based product intended to be used as a delivery vehicle for drugs to be administered into the ears, as well as the nasal and sinus cavities. Specifically, OP-01 was initially developed as an improved treatment option for acute otitis externa (“AOE”), a common medical condition of the outer ear canal that affects tens of millions of adults and children each year (frequently called “swimmer’s ear”). Novus completed four clinical trials of OP-01 in 353 adult and pediatric subjects, including a successful phase 2b study with a steroid-free, antibiotic-only formulation of OP-01 that performed similarly to standard of care, but with a favorable dosing regimen.

In 2016, Novus began development of a second-generation formulation of OP-01 designed to rapidly relieve ear pain (an unmet need in AOE) and eradicate infection with less than seven days of treatment. In 2017, Novus paused the OP-01 development program to focus resources on OP-02.

## RECENT DEVELOPMENTS

### *Reverse Merger*

On December 21, 2016, Novus, formerly known as Tokai Pharmaceuticals, Inc. (“Tokai”), a Delaware corporation, Otic Pharma, Ltd., a private limited company organized under the laws of the State of Israel (“Otic”), and the stockholders of Otic (each a “Seller” and collectively, the “Sellers”), entered into a Share Purchase Agreement (the “Share Purchase Agreement”), pursuant to which, among other things, each Seller agreed to sell to Tokai, and Tokai agreed to purchase from each Seller, all of the common and preferred shares of Otic (“Otic Shares”) owned by such Seller in exchange for the issuance of a certain number of shares of common stock of Tokai, as determined pursuant to the terms of the Share Purchase Agreement (the “Reverse Merger”). The parties amended and restated the Share Purchase Agreement on March 2, 2017.

On May 9, 2017, Tokai, Otic, and the Sellers closed the transaction contemplated by the Share Purchase Agreement and subsequently effected a reverse stock-split at a ratio of one-for-nine (see *Reverse Stock-Split* below). On a post-split basis, Tokai issued to the Sellers an aggregate of 4,027,693 shares of Tokai’s common stock in exchange for 840,115 Otic Shares. Following the completion of the Reverse Merger, the business being conducted by Tokai became primarily the business conducted by Otic. Subsequent to the Reverse Merger, the name of the surviving corporation was changed to “Novus Therapeutics, Inc.”

### *Private Placement*

On January 31, 2017, Novus entered into a stock purchase agreement (the “Stock Purchase Agreement”) with certain purchasers named therein (the “Purchasers”), pursuant to which the Purchasers agreed to purchase approximately \$4.0 million of the Company’s common stock through the purchase of 400,400 shares of the Company’s common stock at a price of \$9.99 per share (the “Private Placement”). The Private Placement closed on May 10, 2017. After giving effect to the issuance of the shares in the Private Placement, the stockholders of Otic owned approximately 64% of the Company’s common stock.

### *Reverse Stock-Split*

On May 11, 2017, Novus effected a reverse stock-split of its issued and outstanding common stock and options for common stock at a ratio of one-for-nine. The Company filed an Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware effecting the reverse stock-split. The accompanying condensed consolidated financial statements and notes give retroactive effect to the reverse stock-split for all periods presented.

### *Equity Distribution Agreement*

On August 21, 2017, the Company entered into an equity distribution agreement (the “Equity Distribution Agreement”) with Piper Jaffray & Co. (“Piper Jaffray”), as sales agent, pursuant to which the Company may offer and sell, from time to time, through Piper Jaffray, shares of the Company’s common stock. In connection with the Equity Distribution Agreement, on August 21, 2017, the Company filed a prospectus supplement (the “2017 Prospectus”) under which the Company was permitted to offer and sell up to \$8.5 million in shares of its common stock. From October 2, 2017 through March 9, 2018, the Company sold 2,463,966 shares of its common stock through Piper Jaffray under the Equity Distribution Agreement and 2017 Prospectus for gross proceeds of approximately \$8.5 million. On July 23, 2018, the Company filed a new prospectus supplement, under which the Company may offer and sell, from time to time, through Piper Jaffray, up to an additional \$9.8 million in shares of its common stock.

## CRITICAL ACCOUNTING POLICIES AND SIGNIFICANT JUDGMENTS AND ESTIMATES

Our management’s discussion and analysis of our financial condition and results of operations are based on our financial statements, which have been prepared in accordance with GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amount of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities as of the date of the financial statements. On an ongoing basis, we evaluate our estimates and judgments. We base our estimates on historical experience, known trends and events, and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from these estimates under different assumptions or conditions. There have been no significant and material changes in our critical accounting policies and significant judgments and estimates during the six months ended June 30, 2018, as compared to those disclosed in the Annual Report on Form 10-K for the year ended December 31, 2017 filed by the Company with the SEC on April 2, 2018.

**RESULTS OF OPERATIONS****Comparison of the Three Months Ended June 30, 2018 and 2017**

The following table provides comparative unaudited results of operations for the three months ended June 30, 2018 and 2017 (in thousands):

	Three Months Ended June 30,		\$ Variance	% Variance
	2018	2017		
<b>Operating expenses:</b>				
Research and Development	\$ 1,329	\$ 533	796	149%
General and Administrative	1,860	6,133	(4,273)	(70)%
Total operating expenses	3,189	6,666	(3,477)	(52)%
Loss from operations	(3,189)	(6,666)	3,477	(52)%
Other income (expense), net	—	4	(4)	(100)%
Net loss	\$ (3,189)	\$ (6,662)	3,473	(52)%

**Research and Development Expenses**

The increase in research and development expenses of \$796,000 for the three months ended June 30, 2018 compared to the three months ended June 30, 2017, was primarily due to the increase in formulation development costs for OP-02 of \$603,000 and an increase in personnel related costs of \$194,000 related to the hiring of additional employees in clinical operations and regulatory operations. We expect research and development expenses to increase in subsequent periods as we advance our OP-02 programs.

**General and Administrative Expenses**

The decrease in general and administrative expenses of \$4.3 million for the three months ended June 30, 2018 compared to the three months ended June 30, 2017 was primarily due to \$4.4 million in non-recurring merger-related expenses incurred in 2017 and a decrease in rent expense of \$89,000, partially offset by increases in stock-based compensation expenses of \$277,000 and Tokai litigation costs of \$115,000.

**Other Income (Expense), Net**

The change in other income (expense), net was due to the Company having interest income of \$4,000 for the three months ended June 30, 2017. The Company had no other income or expenses during the same three-month period in 2018.

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

The following table provides comparative unaudited results of operations for the six months ended June 30, 2018 and 2017 (in thousands):

	Six Months Ended June 30,		\$ Variance	% Variance
	2018	2017		
<b>Operating expenses:</b>				
Research and Development	\$ 2,426	\$ 1,012	1,414	140%
General and Administrative	3,558	7,039	(3,481)	(49)%
Total operating expenses	5,984	8,051	(2,067)	(26)%
Loss from operations	(5,984)	(8,051)	2,067	(26)%
Other income (expense), net	(11)	15	(26)	(173)%
Net loss	\$ (5,995)	\$ (8,036)	2,041	(25)%

**Research and Development Expenses**

The increase in research and development expenses of \$1.4 million for the six months ended June 30, 2018 compared to the six months ended June 30, 2017, was primarily due to the increase in formulation development costs for OP-02,

including consulting expenses, of \$1.2 million, and an increase in personnel related costs of \$257,000 related to the hiring of additional employees in clinical operations and regulatory operations.

#### *General and Administrative Expenses*

The decrease in general and administrative expenses of \$3.5 million for the six months ended June 30, 2018 compared to the six months ended June 30, 2017 was primarily due to \$4.5 million in non-recurring merger-related expenses incurred in 2017 and a decrease in rent expense of \$88,000, partially offset by an increase of \$855,000 in insurance, professional fees, board of directors expense, and other administrative costs associated with operating a public company as well as increases in stock-based compensation expenses of \$311,000 and Tokai litigation costs of \$150,000.

#### *Other Income (Expense), Net*

The change in other income (expense), net was primarily related to \$9,000 in VAT taxes paid in Israel and \$2,000 in realized losses on foreign currency translation for the six months ended June 30, 2018. During the same period in 2017, the Company had interest income of \$15,000.

#### **LIQUIDITY AND CAPITAL RESOURCES**

As of June 30, 2018, we had cash of \$19.2 million, consisting of readily available cash in bank accounts. While we believe our cash is not subject to excessive risk, we maintain significant amounts of cash at one or more financial institutions that are in excess of federally insured limits. To date, our operations have been financed primarily by net proceeds from the sale of preferred and common stock, the issuance of convertible promissory notes, and cash received in the Reverse Merger with Tokai. We believe our cash will be sufficient to fund our operations for at least the next 12 months from the date of issuance of these financial statements.

On May 9, 2017, we completed our Reverse Merger with Tokai, which provided \$23.3 million in cash and cash equivalents. Immediately following the Reverse Merger, we raised \$4.0 million in aggregate gross proceeds from a private placement of our common stock.

On August 21, 2017, the Company entered into the Equity Distribution Agreement with Piper Jaffray and filed the 2017 Prospectus pursuant to which it sold 2,463,966 shares of its common stock for gross proceeds of approximately \$8.5 million between October 2017 and March 2018. No further sales will be made under the 2017 Prospectus. On July 23, 2018, the Company filed a new prospectus supplement, under which the Company may offer and sell, from time to time, through Piper Jaffray, up to an additional \$9.8 million in shares of its common stock.

Our primary uses of capital are, and we expect will continue to be, funding research efforts and the development of our product candidates, compensation and related expenses, hiring additional staff (including clinical, scientific, operational, financial, and management personnel) and costs associated with operating as a public company. We expect to incur substantial expenditures in the foreseeable future for the development and potential commercialization of our product candidates.

We plan to continue to fund losses from operations and capital funding needs through cash on hand and future equity or debt financings, as well as potential additional collaborations or strategic partnerships with other companies. The sale of additional equity or convertible debt could result in additional dilution to our stockholders. The incurrence of indebtedness would result in debt service obligations and could result in operating and financing covenants that would restrict our operations. We can provide no assurance that financing will be available in the amounts we need or on terms acceptable to us, if at all. If we are not able to secure adequate additional funding we may be forced to delay, make reductions in spending, extend payment terms with suppliers, liquidate assets where possible, or suspend or curtail planned programs. Any of these actions could materially harm our business.



## Cash Flows

The following table provides a summary of our net cash flow activity (in thousands):

	Six Months Ended	
	June 30,	
	2018	2017
Net cash used in operating activities	\$ (5,605)	\$ (8,913)
Net cash provided by investing activities	—	23,258
Net cash provided by financing activities	7,491	7,119
Net increase in cash and restricted cash	\$ 1,886	\$ 21,464

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

Net cash used in operating activities for the six months ended June 30, 2018 consisted primarily of our net loss of \$6.0 million, partially offset by non-cash items consisting primarily of stock-based compensation and depreciation totaling \$601,000. Additionally, cash used in operating expenses for the six months ended June 30, 2018 reflected a net decrease in cash from changes in operating assets and liabilities of \$180,000, primarily due to an increase in our prepaid expenses and a decrease in accrued severance expenses, partially offset by increases in our accounts payable and other accrued expenses.

Net cash used in operating activities for the six months ended June 30, 2017 consisted primarily of our net loss of \$8.0 million, partially offset by non-cash items consisting of stock-based compensation, loss on disposal of fixed assets and depreciation totaling \$283,000. Additionally, cash used in operating expenses for the six months ended June 30, 2017 reflected a net decrease in cash from changes in net operating assets and liabilities of \$1.2 million, primarily due to an increase in our prepaid expenses.

There was no cash provided by or used in the Company's investing activities for the six months ended June 30, 2018.

Net cash provided by investing activities for the six months ended June 30, 2017 consisted primarily of cash received from the Reverse Merger of \$23.3 million.

Net cash provided by financing activities for the six months ended June 30, 2018 was comprised of \$7.5 million in net proceeds from the Equity Distribution Agreement for the sale of approximately 2.3 million shares of Novus common stock. Cash provided by significant financing activities in the six months ended June 30, 2017 consisted of \$4.0 million in proceeds from the Stock Purchase Agreement for the purchase of 400,400 shares of Novus common stock and proceeds from the exercise of warrants in the amount of \$3.1 million.

## CONTRACTUAL OBLIGATIONS AND COMMITMENTS

### Contractual Arrangements

No material changes to contractual obligations and commitments occurred during the six months ended June 30, 2018.

### Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements as defined in the rules and regulations of the SEC.

## Item 3. Quantitative and Qualitative Disclosures About Market Risk.

### Interest Rate Risk

Our cash as of June 30, 2018 consisted of readily available cash in bank accounts. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of U.S. interest rates. However, because of the short-term nature of the instruments in our portfolio, a sudden change in market interest rates would not be expected to have a material impact on Novus's financial condition or results of operations. We do not believe that our cash or cash equivalents have significant risk of default or illiquidity. While we believe our cash is not subject to excessive risk, we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in market value. In addition, we maintain significant amounts of cash at one or more financial institutions that are in excess of federally insured limits.

**Item 4. Controls and Procedures.****Definition and Limitations of Disclosure Controls**

Our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act) are controls and other procedures that are designed to ensure that information required to be disclosed in our reports filed under the Exchange Act, such as this report, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures are also designed to ensure that such information is accumulated and communicated to our management, including the Principal Executive Officer and Principal Financial Officer, as appropriate to allow timely decisions regarding required disclosure. Our management evaluates these controls and procedures on an ongoing basis.

There are inherent limitations to the effectiveness of any system of disclosure controls and procedures. These limitations include the possibility of human error, the circumvention or overriding of the controls and procedures and reasonable resource constraints. In addition, because we have designed our system of controls based on certain assumptions, which we believe are reasonable, about the likelihood of future events, our system of controls may not achieve its desired purpose under all possible future conditions. Accordingly, our disclosure controls and procedures provide reasonable assurance, but not absolute assurance, of achieving their objectives.

**Evaluation of Disclosure Controls and Procedures**

Our Principal Executive Officer and our Principal Financial Officer, after evaluating the effectiveness of our disclosure controls and procedures, believe that as of the end of the period covered by this report, our disclosure controls and procedures were effective in providing the requisite reasonable assurance that material information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and is accumulated and communicated to our management, including our Principal Executive Officer and Principal Financial Officer, as appropriate to allow timely decisions regarding the required disclosure.

**Changes in Internal Control Over Financial Reporting**

There has been no change in our internal control over financial reporting identified in connection with our evaluation that occurred during our most recent fiscal quarter that has materially affected or is reasonably likely to materially affect our internal control over financial reporting.

## PART II – OTHER INFORMATION

### Item 1. Legal Proceedings.

Information pertaining to legal proceedings is provided under the heading “Legal Proceedings” in Note 6, Commitments and Contingencies, to the condensed consolidated financial statements and is incorporated by reference herein.

### Item 1A. Risk Factors.

*Investing in our common stock involves a high degree of risk. You should consider carefully the risks described below, together with the other information included or incorporated by reference in our annual report on Form 10-K and subsequent reports filed with the Securities and Exchange Commission. If any of the following risks occur, our business, financial condition, results of operations and future growth prospects could be materially and adversely affected. In these circumstances, the market price of our common stock could decline.*

*Unless otherwise indicated, references to the terms the “combined company”, “Novus”, the “Company”, “we”, “our”, and “us” refer to Otic Pharma, Ltd., and subsidiary (“Otic”) prior to the consummation of the Reverse Merger, and Novus Therapeutics, Inc., upon the consummation of the Reverse Merger described herein. The term “Tokai” refers to the Tokai Pharmaceuticals, Inc., and its subsidiaries (“Tokai”) prior to the Reverse Merger.*

#### **Risks Related to Our Operations**

***We have incurred significant operating losses since our inception and expect that we will continue to incur losses over the next several years and may never achieve or maintain profitability.***

Since inception, Otic, the accounting acquirer in the Reverse Merger, has incurred significant operating losses. As of December 31, 2017, the Company had an accumulated deficit of \$27.5 million. The Company’s net loss for the six months ended June 30, 2018 is \$6.0 million and the Company has an accumulated deficit of \$33.5 million.

We are focused primarily on developing OP-02 as a potential first-in-class treatment option for patients at risk for or with otitis media (“OM” or middle ear inflammation with or without infection). We have not manufactured a current Good Manufacturing Procedures (“cGMP”) batch of OP-02 suitable for clinical trials. Subject to successful completion of formulation development and manufacture of a cGMP batch, we expect to initiate a phase 1 clinical program in 2018 to explore the safety and tolerability of OP-02 in healthy subjects, plus additional phase 1 studies in patients. The phase 1 program will evaluate single and repeated intranasal doses of OP-02. Upon completion of the phase 1 program, Novus intends to initiate phase 2 studies of OP-02, with an initial focus on prevention of OM in children. We expect that it will be several years, if ever, before we have a product candidate ready for commercialization. If we are unable to successfully complete the formulation of OP-02 and begin to generate clinical data for this program, we may have greater difficulty raising additional capital on favorable terms, or at all.

We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. The net losses that we incur may fluctuate significantly from quarter to quarter. We anticipate that our expenses will increase substantially if and as we:

- continue formulation development of our product candidates;
- continue nonclinical and clinical development of our product candidates;
- seek to identify and acquire additional product candidates;
- acquire or in-license other products and technologies;
- enter into collaboration arrangements with regards to product discovery or development;
- develop manufacturing processes;
- seek marketing approvals for any of our product candidates that successfully complete clinical trials;
- establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain marketing approval;
- maintain, expand and protect our intellectual property portfolio;
- hire additional personnel;

- add operational, financial and management information systems and personnel, including personnel to support our product development and planned future commercialization efforts; and
- operate as a public company.

To become and remain profitable, we must develop and eventually commercialize a product or products with significant market potential. This will require us to be successful in a range of challenging activities, including completing clinical trials of our product candidates, obtaining marketing approval for these product candidates and manufacturing, marketing and selling those products for which we obtain marketing approval. We may never succeed in these activities and, even if we do, may never generate revenues that are significant or large enough to achieve profitability. If we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of the Company, could impair our ability to raise capital, maintain our nonclinical and clinical development efforts, and expand our business or continue our operations and may require us to raise additional capital that may dilute the ownership interest of common stockholders. A decline in the value of the Company could also cause stockholders to lose all or part of their investment.

***We are early in our development efforts and have only two drug candidates, OP-02 and OP-01. If we are unable to successfully develop and commercialize any drug candidate, or if we experience significant delays in doing so, our business will be materially harmed.***

We currently do not have any products that have gained regulatory approval. We have invested substantially all of our efforts and financial resources in product development, including funding our formulation development, nonclinical, and clinical studies. Our ability to generate product revenues, which we do not expect will occur for several years, if ever, will depend heavily on the successful development and eventual commercialization of one or more drug candidates. As a result, our business is substantially dependent on our ability to successfully complete the development of and obtain regulatory approval for our or additional product candidates.

We have not yet demonstrated an ability to successfully overcome many of the risks and uncertainties frequently encountered by companies in new and rapidly evolving fields, particularly in the pharmaceutical area. For example, to execute our business plan, we will need to successfully:

- execute formulation, clinical, and nonclinical development activities;
- manufacture drug product;
- in-license or acquire other product candidates and advance them through clinical development;
- obtain required regulatory approvals for the development and commercialization of OP-02 or other product candidates;
- maintain, leverage and expand our intellectual property portfolio;
- build and maintain robust sales, distribution and marketing capabilities, either on our own or in collaboration with strategic partners;
- gain market acceptance for OP-02, OP-01 and other product candidates;
- obtain and maintain adequate product pricing and reimbursement;
- develop and maintain any strategic relationships we elect to enter into; and
- manage our spending as costs and expenses increase due to product manufacturing, nonclinical development, clinical trials, regulatory approvals, post-marketing commitments, and commercialization.

If we are unsuccessful in accomplishing these objectives, we may not be able to successfully develop and commercialize our or other product candidates, and our business will suffer.

***Our short operating history may make it difficult to evaluate the success of our business to date and to assess our future viability.***

We are an early development stage pharmaceutical company. Our ongoing operations to date have been limited to organizing and staffing the Company, business planning, raising capital, acquiring and developing technology, identifying potential product candidates, undertaking nonclinical studies, and, up until the consummation of the Reverse Merger, early stage

clinical studies of our most advanced product candidate, OP-01. Subsequent to the completion of the Reverse Merger, we paused the OP-01 development program and began focusing substantially all of our resources on the advancement of our surfactant program (OP-02) for middle ear disease. Operations related to OP-02 include arranging for third party vendors to formulate and manufacture material using current Good Manufacturing Procedures (“cGMP”) and preparing for phase 1 clinical studies. We have not yet demonstrated our ability to successfully complete large-scale, pivotal clinical trials, obtain marketing approvals, manufacture a commercial scale product or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful product commercialization. It can take many years to develop a new medicine from the time it is discovered to when it is available for treating patients. Consequently, any predictions made about our future success or viability based on our short operating history to date may not be as accurate as they could be if we had a longer operating history.

In addition, as an early stage business, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors. To successfully market any of our product candidates, we will need to transition from a company with a clinical development focus to a company capable of supporting commercial activities. We may not be successful in such a transition.

***Drug development involves a lengthy and expensive process with an uncertain outcome, including failure to demonstrate safety and efficacy to the satisfaction of the FDA or similar regulatory authorities outside the United States. We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the formulation and commercialization of our product candidates.***

We have not manufactured a cGMP batch of OP-02 suitable for clinical trials. Formulation development for OP-02 is ongoing. Subject to successful completion of formulation development and manufacture of a cGMP batch, we expect to initiate a phase 1 clinical program in 2018.

Reformulation work for OP-01 to explore adding a second active ingredient (anesthetic) to address immediate relief of ear pain associated with Acute Otitis Externa (infection/inflammation of the outer ear canal) commenced in 2016, but was subsequently put on hold in 2017 until further funding is obtained. At such time as when we recommence development of OP-01, additional clinical studies with the new OP-01 combination formulation (antibiotic + anesthetic) will need to be conducted. There is a risk that additional nonclinical and/or clinical safety studies will be required by the FDA or similar regulatory authorities outside the United States and/or that subsequent studies will not match results seen in prior studies.

Given the early stage of development for both products, the risk of failure for both of our product candidates is high. Before obtaining marketing approval from regulatory authorities for the sale of any product candidate, we must complete formulation development for our products, conduct nonclinical trials, and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans. Formulation development, nonclinical and clinical testing are all expensive activities, difficult to design and implement, and can take years to complete. The outcome of nonclinical and clinical trials is inherently uncertain. Failure can occur at any time during the development program, including during the clinical trial process. Further, the results of nonclinical studies and early clinical trials of our product candidates, as well as earlier generation formulations may not be predictive of the results of later-stage clinical trials. Interim results of a clinical trial do not necessarily predict final results. Moreover, nonclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in nonclinical and clinical trials have nonetheless failed to obtain marketing approval of their products. It is impossible to predict when or if any of our product candidates will prove effective and safe in humans, or will receive regulatory approval.

We may experience delays in our clinical trials, and we do not know whether planned clinical trials will begin or enroll subjects on time, need to be redesigned or be completed on schedule, if at all. There can be no assurance that the FDA will not put any of our product candidates on clinical hold in the future. There is also no assurance that the European Medicines Agency (the “EMA”), the Medicines & Healthcare Products Regulatory/Agency (the “MHRA”), the UK regulatory authority or other regulatory agency and/or Investigational Review Board/Ethics Committee will allow a study with our product candidates to proceed. We may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our ability to receive marketing approval or commercialize our product candidates. Clinical trials may be delayed, suspended or prematurely terminated for a variety of reasons, such as:

- delay or failure in reaching agreement with the EMA, MHRA, FDA or a comparable foreign regulatory authority on a trial that we want to execute;
- delay or failure in obtaining authorization to commence a trial or inability to comply with conditions imposed by a regulatory authority regarding the design of a clinical study;

- delays in reaching, or failure to reach, agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites;
- delays or failure in completing formulation work as a prerequisite to commencing manufacture of clinical trial supplies;
- inability, delay, or failure in identifying and maintaining a sufficient number of trial sites, many of which may already be engaged in other clinical programs;
- delay or failure in recruiting and enrolling suitable subjects to participate in a trial;
- delay or failure in having subjects complete a trial or return for post-treatment follow-up;
- clinical sites and investigators deviating from trial protocol, failing to conduct the trial in accordance with regulatory requirements, or dropping out of a trial;
- lack of adequate funding to continue the clinical trial, including the incurrence of unforeseen costs due to enrollment delays, requirements to conduct additional clinical studies and increased expenses associated with the services of our contract research organizations (“CROs”) and other third parties;
- clinical trials of our product candidates may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development programs;
- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate, or participants may drop out of these clinical trials at a higher rate than we anticipate;
- we may experience delays or difficulties in the enrollment of patients that our product candidates are designed to target;
- our third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- we may have difficulty partnering with experienced CROs and study sites that can identify patients that our product candidates are designed to target and run our clinical trials effectively;
- regulators or institutional review boards (“IRBs”) may require that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks;
- the cost of clinical trials of our product candidates may be greater than we anticipate;
- the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate; or
- there may be changes in governmental regulations or administrative actions.

If we are required to conduct additional clinical trials or other testing of our product candidates beyond those that we currently contemplate, if we are unable to successfully complete clinical trials of our product candidates or other testing, if the results of these trials or tests are not positive or are only modestly positive, or if there are safety concerns, we may:

- be delayed in obtaining marketing approval for our product candidates;
- not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings that would reduce the potential market for our products or inhibit our ability to successfully commercialize our products;
- be subject to additional post-marketing restrictions and/or testing requirements; or
- have the product removed from the market after obtaining marketing approval.

Our product development costs will also increase if we experience delays in testing or marketing approvals. We do not know whether any of our nonclinical studies or clinical trials will need to be restructured or will be completed on schedule, or at all. Significant nonclinical or clinical trial delays also could shorten any periods during which we may have the exclusive

right to commercialize our product candidates or may allow our competitors to bring products to market before we do and impair our ability to successfully commercialize our product candidates and may harm our business and results of operations.

***If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented and expenses for the development of our product candidates could increase.***

We may not be able to initiate or continue clinical trials for our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials to demonstrate safety and efficacy. We have yet to initiate the first clinical studies of OP-02 and we do not know whether the planned clinical trials will enroll subjects in a timely fashion, require redesign of essential trial elements or be completed on its projected schedule. In addition, competitors may have ongoing clinical trials for product candidates that treat related or the same indications as our product candidates, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates. Our inability to enroll a sufficient number of patients for our clinical trials would result in significant delays and could require us to abandon one or more clinical trials altogether.

Patient enrollment is affected by other factors including:

- the eligibility criteria for the study in question;
- the perceived risks and benefits of the product candidate under study;
- the efforts to facilitate timely enrollment in clinical trials;
- the inability to identify and maintain a sufficient number of trial sites, many of which may already be engaged in other clinical trial programs, including some that may be for the same disease indication;
- seasonality of disease(s) being studied;
- the patient referral practices of physicians;
- the proximity and availability of clinical trial sites for prospective patients;
- ambiguous or negative interim results of our clinical trials, or results that are inconsistent with earlier results;
- feedback from regulatory authorities, IRBs, ethics committees ("ECs"), or data safety monitoring boards, or results from earlier stage or concurrent nonclinical and clinical studies, that might require modifications to the protocol;
- decisions by regulatory authorities, IRBs, ECs, or the Company, or recommendations by data safety monitoring boards, to suspend or terminate clinical trials at any time for safety issues or for any other reason; and
- unacceptable risk-benefit profile or unforeseen safety issues or adverse effects.

Enrollment delays in our clinical trials may result in increased development costs for our product candidates, which would cause the value of the Company to decline and limit our ability to obtain additional financing.

***If serious adverse events or unacceptable side effects are identified during the development of our product candidates, we may need to abandon or limit our development of some of our product candidates.***

If our product candidates are associated with undesirable effects in nonclinical or clinical trials or have characteristics that are unexpected, we may need to interrupt, delay or abandon their development or limit development to more narrow uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. OP-02 has not been evaluated in any human clinical studies. OP-02 is an early product candidate, and the side effect profile in humans has not been fully established. Currently unknown, drug-related side effects may be identified through OP-02 clinical studies and, as such, these possible drug-related side effects could affect patient recruitment, the ability of enrolled subjects to complete the trial, or result in potential product liability claims. Future reformulation of OP-01 may result in a product with an unacceptable side effect profile. Any occurrences of clinically significant adverse events with our product candidates may harm our business, financial condition and prospects significantly.

## **Risks Related to Our Financial Position and Need for Additional Capital**

***We will need substantial additional funding. If we are unable to raise capital when needed, we would be compelled to delay, reduce or eliminate our product development programs or commercialization efforts.***

We expect our expenses to increase in parallel with our ongoing activities, particularly as we continue our nonclinical and clinical development, identify new clinical candidates and initiate clinical trials of, and seek marketing approval for, our product candidates. In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate our nonclinical and clinical development programs or any future commercialization efforts.

Based upon current operating plans, we expect our current working capital will be sufficient to fund our operations for at least the next 12 months from the date of issuance of this report. We will require additional capital to complete the development and commercialization of OP-02 or other product candidates, and may also need to raise additional funds to pursue other development activities related to additional product candidates that we may develop. Our funding needs may fluctuate significantly based on a number of factors, such as:

- the scope, progress, results and costs of formulation development and manufacture of drug product to support nonclinical and clinical development of our product candidates;
- the extent to which we enter into additional collaboration arrangements regarding product discovery or development, or acquire or in-license products or technologies;
- our ability to establish additional collaborations with favorable terms, if at all;
- the costs, timing and outcome of regulatory review of our product candidates;
- the costs of future commercialization activities, including product sales, marketing, manufacturing and distribution, for any of our product candidates for which we receive marketing approval;
- revenue, if any, received from commercial sales of our product candidates, should any of our product candidates receive marketing approval; and
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims.

Identifying potential product candidates and conducting formulation development, nonclinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of products that we do not expect to be commercially available for several years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all.

***Raising additional capital may cause dilution to our stockholders, restrict our operations or require us to relinquish rights to our technologies or product candidates.***

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings and debt financings. We do not have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of common stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of common stockholders. Debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

We cannot be certain that additional funding will be available on acceptable terms, or at all. If we are unable to raise additional funds when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts.



***Future sales of shares by existing stockholders could cause the Company's stock price to decline.***

If existing stockholders of the Company sell, or indicate an intention to sell, substantial amounts of the Company's common stock in the public market, the trading price of the common stock of the combined company could decline. At June 30, 2018, the Company had approximately 9.4 million shares of common stock outstanding.

The Share Purchase Agreement by and among Tokai, Otic, and stockholders of Otic contained a lock-up covenant from the Otic stockholders, which expired on November 5, 2017. The lock-up covenant prevented any Otic stockholder from offering, selling, or otherwise disposing of, directly or indirectly, any securities of the Company, or otherwise enter into a transaction that would have similar effect for 180 days following the closing of the Reverse Merger. Concurrent with the Reverse Merger, the company completed the Private Placement. A registration statement covering the resale of the shares of Company common stock issuable in connection with the Private Placement is in effect, allowing up to 400,400 shares of common stock to be sold in the public market. Further, as of November 7, 2017, shares held by directors, executive officers of the Company and other affiliates are eligible for sale in the public market, subject to volume limitations under Rule 144 under the Securities Act.

***Because the Reverse Merger resulted in an ownership change under Section 382 of the Internal Revenue Code, for Tokai, Tokai's pre-merger net operating loss carryforwards and certain other tax attributes are subject to limitations. The net operating loss carryforwards and other tax attributes of Otic and of the post-merger Company may also be subject to limitations as a result of ownership changes.***

If a corporation undergoes an "ownership change" within the meaning of Section 382 of the Code, the corporation's net operating loss carryforwards and certain other tax attributes arising from before the ownership change are subject to limitations on use after the ownership change. In general, an ownership change occurs if there is a cumulative change in the corporation's equity ownership by certain stockholders that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. The Reverse Merger resulted in an ownership change for Tokai and, accordingly, Tokai's net operating loss carryforwards and certain other tax attributes may be subject to limitations (or disallowance) on their use after the Reverse Merger. Otic's net operating loss carryforwards may also be subject to limitation as a result of prior shifts in equity ownership and/or the transaction. Additional ownership changes in the future could result in additional limitations on Tokai's, Otic's and the post-merger Company's net operating loss carryforwards. Consequently, even if the Company achieves profitability, it may not be able to utilize a material portion of Tokai's, Otic's, or the post-merger Company's net operating loss carryforwards and other tax attributes, which could have a material adverse effect on cash flow and results of operations.

**Risks Related to Regulatory Approval of Our Product Candidates and Other Legal Compliance Matters**

***If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals, or the approvals may be for a narrow indication, we may not be able to commercialize our product candidates, and our ability to generate revenue may be materially impaired.***

Our product candidates must be approved by the FDA pursuant to a new drug application in the United States and by other regulatory authorities outside the United States prior to commercialization. The process of obtaining marketing approvals, both in the United States and outside the United States, is expensive and takes several years, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the product candidates involved. Failure to obtain marketing approval for a product candidate will prevent us from commercializing the product candidate. We have not received approval to market any of our product candidates from regulatory authorities in any country. We have no experience in filing and supporting the applications necessary to gain marketing approvals for ear, nose, or throat (ENT) products and may engage third-party consultants to assist in this process. Securing marketing approval requires the submission of extensive nonclinical and clinical data, and other supporting information to regulatory authorities for each therapeutic indication to establish the product candidate's safety and efficacy. Securing marketing approval also requires the submission of information about the product formulation and manufacturing process to, and inspection of manufacturing facilities by, the regulatory authorities. Our product candidates may not be effective, may be only moderately effective or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use. Regulatory authorities have substantial discretion in the approval process and may refuse to accept any application or may decide that our data are insufficient for approval and require additional nonclinical, clinical or other data. In addition, varying interpretations of the data obtained from nonclinical and clinical studies could delay, limit or prevent marketing approval of a product candidate. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or

regulations, or changes in regulatory review for each submitted product application, may also cause delays in or prevent the approval of an application.

Any marketing approval we ultimately obtain may be for fewer or more limited indications than requested or subject to restrictions or post-approval commitments that render the approved product not commercially viable or its market potential significantly impaired. In addition, regulatory agencies may not approve the labeling claims that are necessary or desirable for the successful commercialization of our product candidates.

If we experience delays in obtaining approval or if we fail to obtain approval of our product candidates, the commercial prospects for our product candidates may be harmed and our ability to generate revenues will be materially impaired.

***Failure to obtain marketing approval in international jurisdictions would prevent our product candidates from being marketed outside the United States.***

In order to market and sell our products in the European Union and other international jurisdictions outside of the United States, we or our third-party collaborators must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and may require additional nonclinical, clinical or health outcome data. In addition, the time required to obtain approval may differ substantially amongst international jurisdictions. The regulatory approval process outside the United States generally includes all the risks associated with obtaining FDA approval. In addition to regulatory approval, in many countries outside the United States, it is required that the product be approved for reimbursement before the product can be approved for sale in that country. We or these third parties may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the EMA, MHRA, or FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. We may not be able to file for marketing approvals and may not receive necessary approvals to commercialize our products in any market.

***Any product candidate for which we obtain marketing approval will be subject to extensive post-marketing regulatory requirements and could be subject to post-marketing restrictions or withdrawal from the market, and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products, when and if any of them are approved.***

Our product candidates and the activities associated with their development and commercialization, including their testing, manufacture, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, are subject to comprehensive regulation that are specific to those defined by regulatory authorities in the countries where the product is approved. In the United States and other countries that follow the International Conference on Harmonization (ICH), these requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, cGMP requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, including periodic inspections by the FDA and other regulatory authorities, requirements regarding the distribution of samples to physicians and recordkeeping.

The FDA, or other regulatory authorities, may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of the product. The FDA closely regulates the post-approval marketing and promotion of drugs to ensure drugs are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding use of their products and if we promote our products beyond their approved indications, we may be subject to enforcement action for off-label promotion. Violations of the federal Food, Drug, and Cosmetic Act relating to the promotion of prescription drugs may lead to investigations alleging violations of federal and state healthcare fraud and abuse laws, as well as state consumer protection laws.

In addition, later discovery of previously unknown adverse events or other problems with our products, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may yield various results, including:

- restrictions on such products, manufacturers or manufacturing processes;
- restrictions on the labeling or marketing of a product;
- restrictions on product distribution or use;
- requirements to conduct post-marketing studies or clinical trials;

- warning or untitled letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;
- fines, restitution or disgorgement of profits or revenues;
- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of our products;
- product seizure; or
- injunctions or the imposition of civil or criminal penalties.

Non-compliance with European Union requirements regarding safety monitoring or pharmacovigilance, and with requirements related to the development of products for the pediatric population, can also result in significant financial penalties. Similarly, failure to comply with the European Union's requirements regarding the protection of personal information can also lead to significant penalties and sanctions.

***Recently enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and affect the prices we may obtain.***

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any product candidates for which we obtain marketing approval.

For example, in 2010, President Obama signed into law the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act (collectively, the "PPACA"). Among the provisions of the PPACA of importance to our potential product candidates are the following:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program;
- expansion of healthcare fraud and abuse laws, including the False Claims Act and the Anti-Kickback Statute, new government investigative powers, and enhanced penalties for noncompliance;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices;
- extension of manufacturers' Medicaid rebate liability;
- expansion of eligibility criteria for Medicaid programs;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program;
- new requirements to report financial arrangements with physicians and teaching hospitals;
- a new requirement to annually report drug samples that manufacturers and distributors provide to physicians; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

In addition, other legislative changes have been proposed and adopted since the PPACA was enacted. These changes included aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, starting in 2013. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, reduced Medicare payments to several providers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Further, under the current Trump administration there may be additional regulatory changes, as well as the potential repeal (in whole or in part) of the PPACA, that could negatively affect insurance coverage and/or drug prices. Any such new laws may result in additional reductions in Medicare and other healthcare funding.

We expect that the PPACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payers. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. Additionally, legislation has been introduced to repeal the PPACA. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our product candidates, if any, may be. In addition, increased scrutiny by the U.S. Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us to more stringent product labeling and post-marketing testing and other requirements.

Laws, restrictions, and other regulatory measures are also imposed by healthcare laws and regulations in international jurisdictions and in those jurisdictions we face the same issues as in the United State regarding difficulty and cost for us to obtain marketing approval and commercialization of our product candidates and which may affect the prices we may obtain.

***Governments outside the United States tend to impose strict price controls, which may adversely affect our revenues, if any.***

In some countries, particularly the countries of the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidate to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be harmed, possibly materially.

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

Healthcare providers, physicians and third-party payers play a primary role in the recommendation and prescription of any product candidates for which we receive marketing approval. Our future arrangements with third-party payers and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute the products for which we receive marketing approval. Restrictions under applicable federal and state healthcare laws and regulations include the following:

- the federal healthcare anti-kickback statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under federal and state healthcare programs such as Medicare and Medicaid;
- the federal False Claims Act imposes civil penalties, including civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program and also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- the federal false statements statute prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services;
- the federal transparency requirements under the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, require manufacturers of covered drugs, devices,

biologics and medical supplies to report to the Department of Health and Human Services information related to physician payments and other transfers of value and physician ownership and investment interests; and

- analogous state laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payers, including private insurers, and some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug manufacturers to report information related to payments to physicians and other healthcare providers or marketing expenditures.

Some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and may require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

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

Laws, restrictions, and other regulatory measures are also imposed by anti-kickback, fraud and abuse, and other healthcare laws and regulations in international jurisdictions and in those jurisdictions we face the same issues as in the United State regarding exposure to criminal sanctions, civil penalties, program exclusion, contractual damages, reputational harm, and diminished profits and future earnings.

*If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business.*

We may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our nonclinical or clinical development or production efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

#### **Risks Related to the Commercialization of Our Product Candidates**

*Even if any of our product candidates receives marketing approval, we may fail to achieve the degree of market acceptance by physicians, patients, third-party payers and others in the medical community necessary for commercial success.*

If any of our product candidates receives marketing approval, we may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payers and others in the medical community. In addition, physicians, patients and third-party payers may prefer other novel products to ours. If our product candidates do not achieve an adequate level of acceptance, we may not generate significant product revenues and we may not become profitable. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on a number of factors, including:

- the efficacy and safety and potential advantages and disadvantages compared to alternative treatments;
- the ability to offer our products for sale at competitive prices;
- the convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of our marketing and distribution support;
- the availability of third-party coverage and adequate reimbursement, including patient cost-sharing programs such as copays and deductibles;

- the ability to develop or partner with third-party collaborators to develop companion diagnostics;
- the prevalence and severity of any side effects; and
- any restrictions on the use of our products together with other medications.

***If our current product candidates, or a future product candidate receives marketing approval and we, or others, later discover that the product is less effective than previously believed or causes undesirable side effects that were not previously identified, the ability to market the product could be compromised.***

Clinical trials are conducted in carefully defined subsets of patients who have agreed to enter into clinical trials. Consequently, it is possible that our clinical trials may indicate an apparent beneficial effect of a product candidate that is greater than the actual positive effect in a broader patient population or alternatively fail to identify undesirable side effects. If, following approval of a product candidate, we, or others, discover that the product is less effective than previously believed or causes undesirable side effects that were not previously identified, any of the following events could occur:

- regulatory authorities may withdraw their approval of the product or seize the product;
- the product may be required to be recalled or changes may be required to the way the product is administered;
- additional restrictions may be imposed on the marketing of, or the manufacturing processes for, the product;
- regulatory authorities may require the addition of labeling statements, such as a “black box” warning or a contraindication;
- the creation of a Medication Guide outlining the risks of the previously unidentified side effects for distribution to patients;
- additional restrictions may be imposed on the distribution or use of the product via a Risk Evaluation and Mitigation Strategy;
- we could be sued and held liable for harm caused to patients;
- the product may become less competitive; and
- our reputation may suffer.

Any of these events could have a material and adverse effect on our operations and business. The commercial prospects for our product candidates may be harmed and our ability to generate revenues will be materially impaired.

***We currently have no marketing and sales force. If we are unable to establish effective marketing and sales capabilities or enter into agreements with third parties to market and sell our product candidates, we may not be able to effectively market and sell our product candidates, if approved, or generate product revenues.***

We currently do not have a marketing or sales team for the marketing, sales and distribution of any of our product candidates that are able to obtain regulatory approval. In order to commercialize any product candidates, we must build on a territory-by-territory basis marketing, sales, distribution, managerial and other non-technical capabilities or make arrangements with third parties to perform these services, and we may not be successful in doing so. If our product candidates receive regulatory approval, we intend to establish an internal sales and marketing team with technical expertise and supporting distribution capabilities to commercialize our product candidates, which will be expensive and time-consuming, will require significant attention of our executive officers to manage and may nonetheless fail to effectively market and sell our product candidates. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of any of our products that we obtain approval to market. With respect to the commercialization of all or certain of our product candidates, we may choose to collaborate, either globally or on a territory-by-territory basis, with third parties that have direct sales forces and established distribution systems, either to augment our own sales force and distribution systems or in lieu of our own sales force and distribution systems. If we are unable to enter into such arrangements when needed on acceptable terms or at all, we may not be able to successfully commercialize any of our product candidates that receive regulatory approval or any such commercialization may experience delays or limitations. If we are not successful in commercializing our product candidates, either on our own or through collaborations with one or more third parties, our future product revenue will suffer and we may incur significant additional losses.

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

The development and commercialization of new drug products is highly competitive. We face competition with respect to our current product candidates, and will face competition with respect to any product candidates that we may seek to develop or commercialize in the future, from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. There are a number of large pharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of products for the treatment of the disease indications for which we are developing our product candidates. Some of these competitive products and therapies are based on scientific approaches that are the same as or similar to our approach, and others are based on entirely different approaches. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

In OM, there are currently no drug therapies approved for the treatment or prevention of OM. We expect that OP-02 will compete primarily with a surgery where the tympanic membrane is perforated to improve drainage and ventilation of the middle ear (myringotomy or tympanostomy tube insertions) as a means of preventing recurrent or chronic OM. We may also compete with a medical device that uses a small intranasal balloon inserted into the Eustachian tube to facilitate ventilation of the Eustachian tube in patients with Eustachian tube dysfunction of a particular type. Surgery may continue to be the preferred treatment for OM in children whereas the intranasal balloon may be the preferred treatment for Eustachian tube dysfunction in adults. Patients may be prescribed concurrent antibiotic therapy for acute OM, but these products will not be competitive with, but likely used in conjunction with OP-02.

Specifically, there are a number of companies developing or marketing treatments for AOE, including many major pharmaceutical and biotechnology companies. We expect that OP-01 will face competition from numerous FDA-approved therapeutics, including CIPRODEX® and numerous other branded and generic ear anti-infectives.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. In addition, our ability to compete may be affected in many cases by insurers or other third-party payers seeking to encourage the use of generic products.

Generic products are currently available, with additional products expected to become available over the coming years, potentially creating pricing pressure. If our product candidates achieve marketing approval, we expect that they will be priced at a significant premium over competitive generic products.

Many of the companies against which we are competing or against which we may compete in the future have significantly greater financial resources and expertise in research and development, manufacturing, conducting nonclinical studies, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller and other early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

***The insurance coverage and reimbursement status of newly approved products is uncertain. Failure to obtain or maintain adequate coverage and reimbursement for new or current products could limit our ability to market those products and decrease our ability to generate revenue.***

The availability and extent of reimbursement by governmental and private payers is essential for most patients to be able to afford expensive treatments. Sales of our product candidates will depend substantially, both domestically and internationally, on the extent to which the costs of our product candidates will be paid by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or reimbursed by government health administration authorities, private health coverage insurers and other third-party payers. If reimbursement is not available, or is available only to limited levels, we may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investment.

There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products. In the United States, the principal decisions about reimbursement for new medicines are typically made by the Centers for Medicare & Medicaid Services ("CMS"), an agency within the U.S. Department of Health and Human Services, as CMS decides whether and to what extent a new medicine will be covered and reimbursed under Medicare. Private payers tend to follow CMS to a substantial degree. It is difficult to predict what CMS will decide with respect to reimbursement for fundamentally novel products such as ours, as there is no body of established practices and precedents for these new products. Reimbursement agencies in Europe may be more conservative than CMS. Outside the United States, international operations are generally subject to extensive governmental price controls and other market regulations, and we believe the increasing emphasis on cost-containment initiatives in Europe, Canada, and other countries has and will continue to put pressure on the pricing and usage of our product candidates. In many countries, the prices of medical products are subject to varying price control mechanisms as part of national health systems. In general, the prices of medicines under such systems are substantially lower than in the United States. Other countries allow companies to fix their own prices for medicines, but monitor and control company profits. Additional foreign price controls or other changes in pricing regulation could restrict the amount that we are able to charge for our product candidates. Accordingly, in markets outside the United States, the reimbursement for our products may be reduced compared with the United States and may be insufficient to generate commercially reasonable revenues and profits.

Moreover, increasing efforts by governmental and third-party payers, in the United States and internationally, to cap or reduce healthcare costs may cause such organizations to limit both coverage and level of reimbursement for new products approved and, as a result, they may not cover or provide adequate payment for our product candidates. Increased expense is incurred to cover costs of health outcome focused research used to generate data necessary to justify the value of our products in order to secure reimbursement. We expect to experience pricing pressures in connection with the sale of any of our product candidates, due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs and surgical procedures and other treatments, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products into the healthcare market.

In addition, many private payers contract with commercial vendors who sell software that provide guidelines that attempt to limit utilization of, and therefore reimbursement for, certain products deemed to provide limited benefit to existing alternatives. Such organizations may set guidelines that limit reimbursement or utilization of our products.

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

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if we commercially sell any products that we may develop. If we cannot successfully defend against claims that our product candidates or products caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or products that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue;
- reduced resources of our management to pursue our business strategy; and
- the inability to commercialize any products that we may develop.

We currently hold \$2 million in product liability insurance coverage in the aggregate, with a per incident limit of \$2 million, which may not be adequate to cover all liabilities that we may incur. We may need to increase our insurance coverage as we expand our clinical trials or if we commence commercialization of our product candidates. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.



## Risks Related to Our Dependence on Third Parties

*Future development collaborations may be important to us. If we are unable to enter into or maintain these collaborations, or if these collaborations are not successful, our business could be adversely affected.*

For some of our product candidates, we may in the future determine to seek to collaborate with pharmaceutical and biotechnology companies for development or commercialization of our product candidates. We face significant competition in seeking appropriate collaborators. Our ability to reach a definitive agreement for any collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. If we are unable to reach agreements with suitable collaborators on a timely basis, on acceptable terms, or at all, we may have to curtail the development of a product candidate, reduce or delay its development program or one or more of our other development programs, delay its potential development schedule or reduce the scope of research activities, or increase our expenditures and undertake discovery or nonclinical development activities at our own expense. If we fail to enter into collaborations and do not have sufficient funds or expertise to undertake the necessary development activities, we may not be able to further develop our product candidates or continue to develop our product candidates, and our business may be materially and adversely affected.

Future collaborations we may enter into may involve the following risks:

- collaborators may have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not perform their obligations as expected;
- changes in the collaborators' strategic focus or available funding, or external factors, such as an acquisition, may divert resources or create competing priorities;
- collaborators may delay discovery, nonclinical or clinical development, provide insufficient funding for product development of targets selected by us, stop or abandon discovery, nonclinical or clinical development for a product candidate, or repeat or conduct new discovery, and nonclinical and clinical development for a product candidate;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products or product candidates if the collaborators believe that competitive products are more likely to be successfully developed than our products;
- product candidates discovered in collaboration with us may be viewed by our collaborators as competitive with their own product candidates or products, which may cause collaborators to cease to devote resources to the development of our product candidates;
- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or termination of the discovery, nonclinical or clinical development or commercialization of product candidates, might lead to additional responsibilities for us with respect to product candidates, or might result in litigation or arbitration, any of which would be time-consuming and expensive;
- collaborators may not properly maintain or defend our intellectual property rights or intellectual property rights licensed to us or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential litigation;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability; and
- collaborations may be terminated for the convenience of the collaborator and, if terminated, we could be required to raise additional capital to pursue further development or commercialization of the applicable product candidates.

Additionally, subject to its contractual obligations to us, if a collaborator is involved in a business combination, the collaborator might deemphasize or terminate the development of any of our product candidates. If one of our collaborators terminates its agreement with us, we may find it more difficult to attract new collaborators and our perception in the business and financial communities could be adversely affected.

If our collaborations do not result in the successful development of products or product candidates, product candidates could be delayed and we may need additional resources to develop product candidates. All of the risks relating to product development, regulatory approval and commercialization described in this periodic report also apply to the activities of our collaborators.

***We contract with third parties for the manufacture of our product candidates for nonclinical and clinical studies and expect to continue to do so for commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or products at an acceptable cost and quality, which could delay, prevent or impair our development or commercialization efforts.***

We have utilized, and intend to continue utilizing, third parties to formulate, manufacture, package, and distribute clinical supplies of our drug candidates. We have no experience in manufacturing and do not have any manufacturing facilities. Currently, we have sole suppliers for one or more of our active pharmaceutical ingredients ("API"), and a different sole manufacturer for each of our product candidates. In addition, these materials are custom-made and available from only a limited number of sources. In particular, there may be a limited supply source for APIs for OP-02 or other potential product candidates. Although we believe that our third-party suppliers maintain a significant supply of APIs on hand, any sustained disruption in this supply could adversely affect our operations. We do not have any long-term agreements in place with our current API suppliers. If we are required to change manufacturers, we may experience delays associated with finding an alternate manufacturer that is properly qualified to produce supplies of our products and product candidates in accordance with regulatory requirements and our specifications. Any delays or difficulties in obtaining APIs or in manufacturing, packaging or distributing approved product candidates could negatively affect our sales revenues, as well as delay our clinical trials.

We expect to rely on third-party manufacturers or third-party collaborators for the manufacture of commercial supply of any other product candidates for which our collaborators or we obtain marketing approval. Despite drug substance and product risk management, this reliance on third parties presents a risk that we will not have sufficient quantities of our product candidates or products or such quantities at an acceptable cost or quality, which could delay, prevent or impair our development or commercialization efforts. Any performance failure on the part of our existing or future manufacturers of drug substance or drug products could delay clinical development or marketing approval. We do not currently have arrangements in place for redundant supply. If suppliers cannot supply us with our requirements, we may be required to identify alternative manufacturers, which would lead us to incur added costs and delays in identifying and qualifying any such replacement.

Formulations and devices used in early studies are not final formulations and devices for commercialization. Additional changes may be required by the FDA or other regulatory authorities on specifications and storage conditions. These may require additional studies, and may result in a delay in our clinical trials and commercialization activities.

We also expect to rely on other third parties to label, store, and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our product candidates or commercialization of our products, producing additional losses and depriving us of potential product revenue.

We may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party;
- the possible misappropriation of our proprietary information, including our trade secrets and know-how; and
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

The third parties we rely on for manufacturing and packaging are also subject to regulatory review, and any regulatory compliance problems with these third parties could significantly delay or disrupt our clinical or commercialization activities. Third-party manufacturers may not be able to comply with cGMP regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our products. Additionally, macro-economic conditions may adversely affect these third parties, causing them to suffer liquidity or operational problems. If a key third-party vendor becomes insolvent or is forced to lay off workers assisting with our projects, our results and development timing could suffer.

Our product candidates and any products that we may develop may compete with other product candidates and products for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us.

Our current and anticipated future dependence upon others for the manufacture of our product candidates or products may adversely affect our future profit margins and our ability to commercialize any products that receive marketing approval on a timely and competitive basis.

***We depend on contract research organizations (“CROs”) and other contracted third parties to perform nonclinical and clinical testing and certain other research and development activities. As a result, the outcomes of the activities performed by these organizations will be, to a certain extent, beyond our control.***

The nature of outsourcing a substantial portion of our business will require that we rely on CROs and other contractors to assist us with research and development, clinical testing activities, patient enrollment, data collection, and regulatory submissions to the FDA or other regulatory bodies. As a result, our success will depend partially on the success of these third parties in performing their responsibilities. Although we intend to pre-qualify our CROs and other contractors and we believe that the contractors selected will be fully capable of performing their contractual obligations, we cannot directly control the adequacy and timeliness of the resources and expertise that they apply to these activities. Additionally, macro-economic conditions may affect our development partners and vendors, which could adversely affect their ability to timely perform their tasks. If our contractors do not perform their obligations in an adequate and timely manner, the pace of clinical development, regulatory approval and commercialization of our drug candidates could be significantly delayed and our prospects could be adversely affected.

#### **Risks Related to Our Intellectual Property.**

***If we are unable to obtain and maintain intellectual property protection for our technology and products or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and products similar or identical to ours, and our ability to successfully commercialize our technology and products may be impaired.***

Our success depends in large part on our ability to obtain and maintain patent protection in the European Union, the United States and other countries with respect to our proprietary technology and products. We seek to protect our proprietary position by filing patent applications in the United States and internationally that are related to our novel technologies and product candidates. This patent portfolio includes issued patents and pending patent applications covering pharmaceutical methods of use.

The patent prosecution process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. We may choose not to seek patent protection for certain innovations and may choose not to pursue patent protection in certain jurisdictions, and under the laws of certain jurisdictions, patents or other intellectual property rights may be unavailable or limited in scope. It is also possible that we will fail to identify patentable aspects of our discovery and nonclinical development output before it is too late to obtain patent protection. Moreover, in some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we license from third parties. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States. For example, India and China do not allow patents for methods of treating the human body. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot know with certainty whether we were the first to make the inventions claimed in our owned or licensed patents or pending patent applications, or that we were the first to file for patent protection of such inventions. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Our pending and future patent applications may not result in patents being issued which protect our technology or products, in whole or in part, or which effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the European Union, the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. On September 16, 2011, the Leahy-Smith America Invents Act (the "Leahy-Smith Act"), was signed into law. The Leahy-Smith Act includes a number of significant changes to United States patent law. These include provisions that affect the way patent applications are prosecuted and may also affect patent litigation. The United States Patent and Trademark Office ("USPTO") recently developed new regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and in particular, the first to file provisions, only became effective on March 16, 2013. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

Moreover, we may be subject to a third-party pre-issuance submission of prior art to the USPTO, or become involved in opposition, derivation, reexamination, inter partes review, post-grant review or interference proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

Even if our owned and licensed patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our owned or licensed patents by developing similar or alternative technologies or products in a non-infringing manner.

The issuance of a patent is not conclusive as to its inventorship, scope, validity, or enforceability, and our owned and licensed patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to our own.

The risks described elsewhere pertaining to our patents and other intellectual property rights also apply to the intellectual property rights that we license, and any failure to obtain, maintain and enforce these rights could have a material adverse effect on our business. In some cases, we may not have control over the prosecution, maintenance or enforcement of the patents that we license, and our licensors may fail to take the steps that we believe are necessary or desirable in order to obtain, maintain and enforce the licensed patents. Any inability on our part to protect adequately our intellectual property may have a material adverse effect on our business, operating results and financial position.

***Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.***

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the USPTO and various governmental patent agencies outside of the United States in several stages over the lifetime of the patents and/or applications. The USPTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. In certain situations, non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to enter the market and this circumstance would have a material adverse effect on our business.

***If we fail to comply with our obligations in the agreements under which we license intellectual property and other rights from third parties or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.***

We have acquired rights to our OP-02 technology through a license agreement with Otodyne, Inc. and may in the future enter into other license agreements with third parties for other intellectual property rights or assets. These license agreements may impose various diligence, milestone payment, royalty, and other obligations on us. If we fail to comply with our obligations under these agreements, or we are subject to a bankruptcy, we may be required to make certain payments to the licensor, we may lose the exclusivity of our license, or the licensor may have the right to terminate the license, in which event we would not be able to develop or market products covered by the license. Additionally, the milestone and other payments associated with these licenses will make it less profitable for us to develop our drug candidates than if we had developed the licensed technology internally.

In some cases, patent prosecution of our licensed technology may be controlled solely by the licensor. If our licensors fail to obtain and maintain patent or other protection for the proprietary intellectual property we license from them, we could lose our rights to the intellectual property or our exclusivity with respect to those rights, and our competitors could market competing products using the intellectual property. In certain cases, we may control the prosecution of patents resulting from licensed technology. In the event we breach any of our obligations related to such prosecution, we may incur significant liability to our licensing partners. If disputes over intellectual property and other rights that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

***We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time-consuming and unsuccessful.***

Because competition in our industry is intense, competitors may infringe or otherwise violate our issued patents, patents of our licensors or other intellectual property. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents. In addition, in a patent infringement proceeding, a court may decide that a patent of ours is invalid or unenforceable, in whole or in part, construe the patent's claims narrowly, or refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated or interpreted narrowly. We may also elect to enter into license agreements in order to settle patent infringement claims or to resolve disputes prior to litigation, and any such license agreements may require us to pay royalties and other fees that could be significant. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure.

***We may need to license certain intellectual property from third parties, and such licenses may not be available or may not be available on commercially reasonable terms.***

A third party may hold intellectual property, including patent rights, that are important or necessary to the development of our products. It may be necessary for us to use the patented or proprietary technology of third parties to commercialize our products, in which case we would be required to obtain a license from these third parties on commercially reasonable terms, or our business could be harmed, possibly materially. If we were not able to obtain a license, or were not able to obtain a license on commercially reasonable terms, our business could be harmed, possibly materially.

***Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business.***

Our commercial success depends upon our ability, and the ability of our collaborators, to develop, manufacture, market and sell our product candidates and use our proprietary technologies without infringing the proprietary rights of third parties. There is considerable intellectual property litigation in the biotechnology and pharmaceutical industries. We may become party to, or threatened with, future adversarial proceedings or litigation regarding intellectual property rights with respect to our products and technology, including interference or derivation proceedings before the USPTO. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future.

If we are found to infringe a third party's intellectual property rights, we could be required to obtain a license from such third party to continue developing and marketing our products and technology. However, we may not be able to obtain

any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. We could be forced, including by court order, to cease commercializing the infringing technology or product. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

***If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.***

In addition to seeking patents for some of our technology and product candidates, we also rely on trade secrets, including unpatented know-how, technology and other proprietary information, to maintain our competitive position. Any NDAs or similar agreements entered into by the Company may not be with all relevant parties, or adequately protect the confidentiality of our trade secrets. Moreover, to the extent we enter into such agreements, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them, or those to whom they communicate them, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our competitive position would be harmed.

#### **Risks Related to Our Employee Matters, Managing Growth and Macroeconomic Conditions**

***Our future success depends on our ability to retain executives and key employees and to attract, retain and motivate qualified personnel in the future.***

We are highly dependent on the product development, clinical and business development expertise of the principal members of our management, scientific and clinical team. Although we have entered into employment agreements with our executives and key employees, each of them may terminate their employment with us at any time. We do not maintain "key person" insurance for any of our executives or other employees.

Recruiting and retaining qualified scientific, clinical, manufacturing, sales and marketing personnel is critical to our success. Due to the small size of the Company and the limited number of employees, each of our executives and key employees serves in a critical role. The loss of the services of our executive officers or other key employees could impede the achievement of our development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval of, and commercialize products. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating drug product, nonclinical development, clinical development, regulatory strategy, and commercial strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to provide services to us. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited.

***We expect to expand our research and development function, as well as our corporate operations, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.***

We expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of drug development, regulatory affairs and, if any of our product candidates receives marketing approval, sales, marketing and distribution. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The expansion of our operations may lead to significant costs

and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

***We may be subject to claims that our employees or directors have wrongfully used or disclosed alleged trade secrets of their former employers.***

Many of our employees and certain of our directors were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees and directors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these employees or directors have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's or director's former employer. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

***Unfavorable global economic conditions could adversely affect our business, financial condition or results of operations.***

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. A severe or prolonged economic downturn, such as the recent global financial crisis, could result in a variety of risks to our business, including our ability to raise additional capital when needed on acceptable terms, if at all. This is particularly true in Europe, where the United Kingdom's vote to leave the European Union has created additional economic uncertainty. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

***Our business and operations would suffer in the event of system failures.***

Despite the implementation of security measures, our internal computer systems and those of the CROs, collaborators and third-parties on whom we rely are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. Furthermore, we have little or no control over the security measures and computer systems of our third-party collaborators. While we and, to our knowledge, our third-party collaborators have not experienced any such system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations or our third-party collaborators, it could result in a material disruption of our drug development programs. For example, the loss of research data could delay development of our product candidates and the loss of clinical trial data from completed or ongoing or planned clinical trials could result in delays in our regulatory approval efforts and we may incur substantial costs to attempt to recover or reproduce the data. Similarly, we have no control over the security measures and computer systems of the regulatory bodies to whom we provide financial and other sensitive information. If any disruption or security breach resulted in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and/or the further development of our product candidates could be delayed.

**Risks Related to Our Common Stock**

***We expect our stock price to be volatile, and the market price of our common stock may drop unexpectedly.***

The market price of our common stock could be subject to significant fluctuations. Market prices for securities of early-stage pharmaceutical, biopharmaceutical, and other life sciences companies have historically been particularly volatile. Some of the factors that may cause the market price of our common stock to fluctuate include:

- our ability to obtain regulatory approvals for our product candidates or other product candidates, and delays or failures to obtain such approvals;
- failure of any of our product candidates, if approved, to achieve commercial success;
- issues in manufacturing our approved products, if any, or product candidates;
- the results of our current and any future clinical trials of our product candidates;
- the entry into, or termination of, key agreements, including key commercial partner agreements;

- the initiation of, material developments in, or conclusion of litigation to enforce or defend any of our intellectual property rights or defend against the intellectual property rights of others;
- announcements by commercial partners or competitors of new commercial products, clinical progress or the lack thereof, significant contracts, commercial relationships or capital commitments;
- the introduction of technological innovations or new therapies that compete with our potential products;
- the loss of key employees;
- changes in estimates or recommendations by securities analysts, if any, who cover our common stock;
- general and industry-specific economic conditions that may affect our research and development expenditures;
- changes in the structure of healthcare payment systems; and
- period-to-period fluctuations in our financial results.

Moreover, the stock markets in general have experienced substantial volatility that has often been unrelated to the operating performance of individual companies. These broad market fluctuations may also adversely affect the trading price of our common stock.

In the past, following periods of volatility in the market price of a company's securities, stockholders have often instituted class action securities litigation against those companies. Such litigation, if instituted, could result in substantial costs and diversion of management attention and resources, which could significantly harm our profitability and reputation.

***If securities analysts do not publish research or reports about our business, or if they publish negative evaluations, the price of our common stock could decline.***

The trading market for our common stock may be impacted by the availability or lack of research and reports that third-party industry or financial analysts publish about the Company. There are many large, publicly traded companies active in the biopharmaceutical industry, which may mean it will be less likely that we receive widespread analyst coverage. Furthermore, if one or more of the analysts who do cover the Company downgrade our stock, our stock price would likely decline. If we do not receive adequate coverage by reputable analysts that have an understanding of our business and industry, we could fail to achieve visibility in the market, which in turn could cause our stock price to decline.

***Our executive officers, directors and principal stockholders, if they choose to act together, will have the ability to control all matters submitted to stockholders for approval.***

Our executive officers and directors, combined with our principal stockholders, beneficially own shares representing approximately 73.7% of our capital stock as of June 30, 2018. As a result, if these stockholders were to choose to act together, they would be able to control all matters submitted to our stockholders for approval, as well as our management and affairs. For example, these persons, if they choose to act together, would control the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. This concentration of ownership control may:

- delay, defer or prevent a change in control;
- entrench our management and the board of directors; or
- impede a merger, consolidation, takeover or other business combination involving the Company that other stockholders may desire.

***We will incur costs and demands upon management as a result of complying with the laws and regulations affecting public companies.***

We will incur significant legal, accounting and other expenses that Otic did not incur as a private company, including costs associated with public company reporting requirements. We will also incur costs associated with corporate governance requirements, including requirements under the Sarbanes-Oxley Act and rules and regulations promulgated by the SEC and Nasdaq. These rules and regulations are expected to increase our legal and financial compliance costs and to make some activities more time-consuming and costly. These rules and regulations may also make it difficult and expensive for the Company to obtain directors' and officers' liability insurance. As a result, it may be more difficult for the Company to attract



and retain qualified individuals to serve on our board of directors or as executive officers of the Company, which may adversely affect investor confidence in the Company and could cause our business or stock price to suffer.

***If we fail to establish and maintain proper and effective internal control over financial reporting, our operating results and our ability to operate our business could be harmed.***

Ensuring that we will have adequate internal financial and accounting controls and procedures in place so that we can produce accurate financial statements on a timely basis is a costly and time-consuming effort that needs to be re-evaluated frequently. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with GAAP.

Through the fiscal year ended December 31, 2014, Otic's financial statements have been audited in accordance with generally accepted auditing standards in Israel. The consolidated financial statements for the years ended December 31, 2017, 2016, and 2015 were audited in accordance with generally accepted auditing standards in the United States.

For the fiscal year ended December 31, 2017, our financial statements were audited in accordance with the standards of the Public Company Accounting Oversight Board (United States). In addition, we are required to be compliant with public company internal control requirements mandated under Section 302 and 906 of the Sarbanes-Oxley Act. We will be implementing measures designed to improve our internal controls over financial reporting, including bringing in additional accounting resources and establishing new accounting and financial reporting procedures to establish an appropriate level of internal controls over financial reporting. However, we are still in the process of implementing these measures and cannot provide assurances that we will be successful in doing so. If we are unable to successfully implement internal controls over financial reporting, the accuracy and timing of our financial reporting, and our stock price, may be adversely affected and we may be unable to maintain compliance with the applicable stock exchange listing requirements.

Implementing any appropriate changes to our internal controls may distract the officers and employees of the Company, entail substantial costs to modify its existing processes and take significant time to complete. These changes may not, however, be effective in maintaining the adequacy of the internal controls of the Company, and any failure to maintain that adequacy, or consequent inability to produce accurate financial statements on a timely basis, could increase operating costs and harm the business. In addition, investors' perceptions that the internal controls of the Company are inadequate or that we are unable to produce accurate financial statements on a timely basis may harm the stock price of the Company.

***Provisions in our corporate charter documents and under Delaware law could make an acquisition of the Company, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.***

Provisions in our corporate charter and bylaws may discourage, delay or prevent a merger, acquisition or other change in control of the Company that stockholders may consider favorable, including transactions in which our stockholders might otherwise receive a premium for their shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because the board of directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by stockholders to replace or remove the current management by making it more difficult for stockholders to replace members of the board of directors. Among other things, these provisions:

- establish a classified board of directors such that not all members of the board are elected at one time;
- allow the authorized number of our directors to be changed only by resolution of our board of directors;
- limit the manner in which stockholders can remove directors from the board;
- establish advance notice requirements for stockholder proposals that can be acted on at stockholder meetings and nominations to our board of directors;
- require that stockholder actions must be effected at a duly called stockholder meeting and prohibit actions by our stockholders by written consent;
- limit who may call stockholder meetings;
- authorize the board of directors to issue preferred stock without stockholder approval, which could be used to institute a "poison pill" that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our board of directors; and

• require the approval of the holders of at least 75% of the votes that all our stockholders would be entitled to cast to amend or repeal certain provisions of the Company's charter or bylaws.

Moreover, because the Company is incorporated in Delaware, it is governed by the provisions of Section 203 of the DGCL, which prohibits a person who owns in excess of 15% of its outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

*We do not expect to pay any cash dividends in the foreseeable future.*

We expect to retain our future earnings to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be the sole source of gain, if any, for any stockholders for the foreseeable future.

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

None.

**Item 3. Defaults Upon Senior Securities.**

None.

**Item 4. Mine Safety Disclosures.**

None.

**Item 5. Other Information.**

Effective as of August 1, 2018, the Board of Directors amended the Company's 2014 Stock Incentive Plan (the "2014 Plan") and the Company's 2014 Employee Stock Purchase Plan (the "ESPP" and, together with the 2014 Plan, the "Plans") to reduce the share reserves under the Plans. These reductions were made to equitably adjust the share reserves in accordance with the terms of the Plans. As a result of these equitable adjustments: (1) the number of shares of common stock authorized for issuance under the 2014 Plan (excluding shares underlying outstanding awards as of August 1, 2018) was reduced to 766,500 shares and the maximum number of shares that can be added to the 2014 Plan under evergreen provision set forth in Section 4(a)(1)(C) of the 2014 Plan was reduced to 550,000 shares annually; and (2) the number of shares of common stock authorized for future issuance under the ESPP was reduced to 209,500 shares (excluding shares previously issued under the ESPP prior to August 1, 2018) and the maximum number of shares that can be added to the ESPP under the evergreen provision set forth in the ESPP was reduced to 135,000 shares annually. The 2014 Plan and ESPP were amended and restated as of August 1, 2018 to reflect these equitable adjustments..

**Item 6. Exhibits.**

The exhibits filed or furnished as part of this Quarterly Report on Form 10-Q are set forth on the Exhibit Index, which Exhibit Index is incorporated herein by reference.

Exhibit Index

Exhibit Number	Description
10.1*	<a href="#">First Amendment to Lease Agreement, dated April 9, 2018, by and between The Irvine Company LLC and Novus Therapeutics, Inc.</a>
10.2*	<a href="#">Novus Therapeutics, Inc., 2014 Stock Incentive Plan</a>
10.3*	<a href="#">Novus Therapeutics, Inc., 2014 Employee Stock Purchase Plan</a>
31.1*	<a href="#">Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</a>
31.2*	<a href="#">Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</a>
32.1*	<a href="#">Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</a>
32.2*	<a href="#">Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</a>
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

\* Filed herewith.

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.

Novus Therapeutics, Inc.

Date: August 6, 2018

By: \_\_\_\_\_  
*/s/ Gregory J. Flesher*  
**Gregory J. Flesher**  
**Chief Executive Officer**  
**and Director (Principal**  
**Executive Officer)**

Date: August 6, 2018

By: \_\_\_\_\_  
*/s/ Jon S. Kuwahara*  
**Jon S. Kuwahara**  
**Senior Vice President Finance &**  
**Administration (Principal Financial and**  
**Accounting Officer)**

**FIRST AMENDMENT TO LEASE**

**I. PARTIES AND DATE.**

April 19, 2018

This Amendment to Lease ("**Amendment**") dated

, is by and between **THE**

**IRVINE COMPANY**  
**NOVUS THERAPEUTICS, INC.**, a Delaware corporation ("**Tenant**").

**LLC,**

a

Delaware

**II. RECITALS.**

Landlord and Tenant (as successor in interest to Otic Pharma, Inc., a Delaware corporation) entered into an office space lease dated September 2, 2015 (the "**Lease**") for space consisting of 5,197 rentable square feet ("**Premises**") known as Suite No. 550 in the building located at 19900 MacArthur Boulevard, Irvine, California (the "**Building**").

Landlord and Tenant each desire to modify the Lease to extend the Lease Term, adjust the Basic Rent, and make such other modifications as are set forth in "III. **MODIFICATIONS**" next below.

**III. MODIFICATIONS.**

A. Basic Lease Provisions. The Basic Lease Provisions are hereby amended as follows:

1. Item 5 is hereby deleted in its entirety and the following substituted in lieu thereof:

"5. Lease Term: The Term of this Lease shall expire at midnight on September 30, 2021."

2. Effective as of October 1, 2018, Item 6 shall be amended by adding the following:

Months of Term or Period	Monthly Rate Per Rentable Square Foot	Monthly Basic Rent (rounded to the nearest dollar)
10/1/18 to 9/30/19	\$2.97	\$15,435.00
10/1/19 to 9/30/20	\$3.10	\$16,111.00
10/1/20 to 9/30/21	\$3.24	\$16,838.00

3. Effective as of October 1, 2018, Item 7 shall be deleted in its entirety and the following shall be substituted in lieu thereof:

"7. Property Tax Base: The Property Taxes per rentable square foot incurred by Landlord and attributable to the twelve month period ending June 30, 2019 (the "**Base Year**").

Project Cost Base: The Project Costs per rentable square foot incurred by Landlord and attributable to the Base Year.

Expense Recovery Period: Every 12 month period during the Term (or portion thereof during the first and last Lease years) ending June 30."

B. Security Deposit. No additional security deposit shall be required in connection with this Amendment.

C. Operating Expenses. Notwithstanding any contrary provision in the Lease, Landlord hereby agrees that Tenant shall not be obligated to pay Landlord for Tenant's Share of Operating Expense excess accruing during the period commencing October 1, 2018 and ending September 30, 2019.

D. Parking. Notwithstanding any contrary provision in Exhibit F to the Lease, "Parking," during the period commencing October 1, 2018 and ending September 30, 2021, the parking charge for the Parking Passes shall be \$50.00 per Parking Pass per month. From and after October 1, 2021, the parking charge shall be at Landlord's scheduled parking rates from time to time.

E. Tenant Improvements. Landlord shall cause its contractor to make such improvements to the Premises as may be specified by Tenant and approved by Landlord ("**Tenant Improvements**"). All such improvements shall be set forth at one time by Tenant as part of a single plan, it being understood that Landlord shall not be required to undertake multiple jobs. All materials and finishes utilized in completing the Tenant Improvements shall be Landlord's building standard. Should Landlord submit any matter to Tenant for approval, Tenant shall approve or reasonably disapprove same (with reasons specified) within 3 business days.

Landlord's total contribution for the Tenant Improvements shall not exceed \$21,655.00 ("**Landlord Contribution**"), based on \$5.00 per usable square foot of the Premises. It is understood that Landlord shall be entitled to a supervision/administrative fee equal to 3% of the total hard and soft construction cost, which fee shall be paid from the Landlord Contribution. Any excess cost shall be borne solely by Tenant and shall be paid to Landlord within 10 days following Landlord's billing for such excess cost. Tenant understands and agrees that any portion of the Landlord Contribution not utilized by Tenant as part of the single improvement project on or before June 30, 2019, shall inure to the benefit of Landlord and Tenant shall not be entitled to any credit or payment or to apply any such savings toward additional work; provided, however, that Tenant may, upon written request delivered to Landlord not later than October 1, 2018, apply any unused sums of the Landlord Contribution to the Basic Rent amortized on a straight-line basis over the Term commencing October 1, 2018 and ending September 30, 2021. Landlord and Tenant shall memorialize any such reduction in the Basic Rent on a form provided by Landlord.

Notwithstanding the foregoing, Tenant may utilize all or a portion of the Landlord Contribution toward the out-of-pocket expenses incurred by Tenant for the purchase, refurbishment and/or installation of furniture for the Premises, and telephone and data cabling costs. Tenant shall be reimbursed for such expenses by submitting copies of all supporting third-party invoices to Landlord by June 30, 2019. Landlord shall reimburse Tenant in one installment within 30 days following receipt of all such invoices.

It is understood that the Tenant Improvements shall be done during Tenant's occupancy of the Premises. In this regard, Tenant agrees to assume any risk of injury, loss or damage which may result and that no rental abatement shall result while the Tenant Improvements are completed in the Premises. Tenant further agrees that it shall be solely responsible for relocating its office equipment, furniture and furnishings in the Premises to accommodate such improvement work.

- F. Release of Guarantor's Liability. It is understood that the Lease is presently guaranteed by OTIC Pharma Ltd., an Israel company ("**Guarantor**"), pursuant to a Guarantee of Lease dated September 2, 2015. Effective as of the date of this Amendment, and provided that Tenant is not then in Default under the Lease and is not a debtor in any bankruptcy or insolvency proceedings, Guarantor shall be released from any further obligations under that Guarantee.

#### IV. GENERAL.

- A. Effect of Amendments. The Lease shall remain in full force and effect except to the extent that it is modified by this Amendment.
- B. Entire Agreement. This Amendment embodies the entire understanding between Landlord and Tenant with respect to the modifications set forth in "III. MODIFICATIONS" above and can be changed only by a writing signed by Landlord and Tenant.
- C. Counterparts; Digital Signatures. If this Amendment is executed in counterparts, each is hereby declared to be an original; all, however, shall constitute but one and the same amendment. In any action or proceeding, any photographic, photostatic, or other copy of this Amendment may be introduced into evidence without foundation. The parties agree to accept a digital image (including but not limited to an image in the form of a PDF, JPEG, GIF file, or other e-signature) of this Amendment, if applicable, reflecting the execution of one or both of the parties, as a true and correct original.
- D. Defined Terms. All words commencing with initial capital letters in this Amendment and defined in the Lease shall have the same meaning in this Amendment as in the Lease, unless they are otherwise defined in this Amendment.
- E. Authority. If Tenant is a corporation, limited liability company or partnership, or is comprised of any of them, each individual executing this Amendment for the corporation, limited liability company or partnership represents that he or she is duly authorized to execute and deliver this Amendment on behalf of such entity and that this Amendment is binding upon such entity in accordance with its terms.
- F. California Certified Access Specialist Inspection. Pursuant to California Civil Code § 1938, Landlord hereby states that the Premises have not undergone inspection by a Certified Access Specialist (CASp) (defined in California Civil Code § 55.52(a)(3)). Pursuant to Section 1938 of the California Civil Code, Landlord hereby provides the following notification to Tenant: "A Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the subject premises, the commercial property owner or lessor may not prohibit the lessee or tenant from obtaining a CASp inspection of the subject premises for the occupancy or potential occupancy of the lessee or tenant, if requested by the lessee or tenant. The parties shall mutually agree on the arrangements

for the time and manner of the CASp inspection, the payment of the fee for the CASp inspection, and the cost of making any repairs necessary to correct violations of construction related accessibility standards within the premises." If Tenant requests to perform a CASp inspection of the Premises, Tenant shall, at its cost, retain a CASp approved by Landlord (provided that Landlord may designate the CASp, at Landlord's option) to perform the inspection of the Premises at a time agreed upon by the parties. Tenant shall provide Landlord with a copy of any report or certificate issued by the CASp (the "**CASp Report**") and Tenant shall, at its cost, promptly complete any modifications necessary to correct violations of construction related accessibility standards identified in the CASp Report, notwithstanding anything to the contrary in this Lease. Tenant agrees to keep the information in the CASp Report confidential except as necessary for the Tenant to complete such modifications.

- G. **Attorneys' Fees.** The provisions of the Lease respecting payment of attorneys' fees shall also apply to this Amendment.
- H. **Nondisclosure of Lease Terms.** Tenant acknowledges that the content of this Amendment and any related documents are confidential information. Except to the extent disclosure is required by law, Tenant shall keep such confidential information strictly confidential and shall not disclose such confidential information to any person or entity other than Tenant's financial, legal and space-planning consultants, provided, however, that Tenant may disclose the terms to prospective subtenants or assignees under the Lease or pursuant to legal requirement.
- I. **Brokers.** Article 18 of the Lease is amended to provide that the parties recognize the following parties as the brokers who negotiated this Amendment, and agree that Landlord shall be responsible for payment of brokerage commissions to such brokers pursuant to its separate agreements with such brokers: Irvine Management Company ("**Landlord's Broker**") is the agent of Landlord exclusively and Hughes Marino, Inc. / Irvine ("**Tenant's Broker**") is the agent of Tenant exclusively. By the execution of this Amendment, each of Landlord and Tenant hereby acknowledge and confirm (a) receipt of a copy of a Disclosure Regarding Real Estate Agency Relationship conforming to the requirements of California Civil Code 2079.16, and (b) the agency relationships specified herein, which acknowledgement and confirmation is expressly made for the benefit of Tenant's Broker. If there is no Tenant's Broker so identified herein, then such acknowledgement and confirmation is expressly made for the benefit of Landlord's Broker. By the execution of this Amendment, Landlord and Tenant are executing the confirmation of the agency relationships set forth herein. The warranty and indemnity provisions of Article 18 of the Lease, as amended hereby, shall be binding and enforceable in connection with the negotiation of this Amendment.

V. **EXECUTION.**

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DocuSigned by:  
Gregory J. Fleisher  
FD403324E8094CF...

DocuSigned by:  
Christopher J. Popma  
39682F1024E943A...

DocuSigned by:  
Steven M. Case  
F2AEB2D6FE85486...

Landlord and Tenant executed this Amendment on the date as set forth in "I. PARTIES AND

DATE." above.

**LANDLORD:**

THE IRVINE COMPANY LLC,  
a Delaware limited liability company

**TENANT:**

NOVUS THERAPEUTICS,  
INC.,  
a Delaware corporation

By

Steven M. Case  
  
Executive Vice President Office  
Properties

By

Printed Name Gregory J.  
Fleisher  
Title CEO

By

Christopher J. Popma  
  
Regional Vice President, Operations Office  
Properties

By

Printed Name Title

DS  
SML



NOVUS THERAPEUTICS, INC.  
(f/k/a TOKAI PHARMACEUTICALS, INC.)2014 STOCK INCENTIVE PLAN1. Purpose

The purpose of this 2014 Stock Incentive Plan (the “**Plan**”) of Novus Therapeutics, Inc. (f/k/a Tokai Pharmaceuticals, Inc.), a Delaware corporation (the “**Company**”), is to advance the interests of the Company’s stockholders by enhancing the Company’s ability to attract, retain and motivate persons who are expected to make important contributions to the Company and by providing such persons with equity ownership opportunities and performance-based incentives that are intended to better align the interests of such persons with those of the Company’s stockholders. Except where the context otherwise requires, the term “**Company**” shall include any of the Company’s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations thereunder (the “**Code**”) and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors of the Company (the “**Board**”).

2. Eligibility

All of the Company’s employees, officers and directors, as well as consultants and advisors to the Company (as such terms are defined and interpreted for purposes of Form S-8 under the Securities Act of 1933, as amended (the “**Securities Act**”), or any successor form) are eligible to be granted Awards under the Plan. Each person who is granted an Award under the Plan is deemed a “**Participant**.” “**Award**” means Options (as defined in Section 5), SARs (as defined in Section 6), Restricted Stock (as defined in Section 7), Restricted Stock Units (as defined in Section 7) and Other Stock-Based Awards (as defined in Section 8).

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may construe and interpret the terms of the Plan and any Award agreements entered into under the Plan. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient and it shall be the sole and final judge of such expediency. All decisions by the Board shall be made in the Board’s sole discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (a “**Committee**”). All references in the Plan to the “**Board**” shall mean the Board or a Committee of the Board or the officers referred to in Section 3(c) to the extent that the Board’s powers or authority under the Plan have been delegated to such Committee or officers.

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(c) Delegation to Officers. To the extent permitted by applicable law, the Board may delegate to one or more officers of the Company the power to grant Options and other Awards that constitute rights under Delaware law (subject to any limitations under the Plan) to employees or officers of the Company and to exercise such other powers under the Plan as the Board may determine, *provided* that the Board shall fix the terms of such Awards to be granted by such officers (including the exercise price of such Awards, which may include a formula by which the exercise price will be determined) and the maximum number of shares subject to such Awards that the officers may grant; *provided further*, however, that no officer shall be authorized to grant such Awards to any "executive officer" of the Company (as defined by Rule 3b-7 under the Securities Exchange Act of 1934, as amended (the "*Exchange Act*")) or to any "officer" of the Company (as defined by Rule 16a-1 under the Exchange Act). The Board may not delegate authority under this Section 3(c) to grant Restricted Stock, unless Delaware law then permits such delegation.

4. Stock Available for Awards

(a) Number of Shares; Share Counting.

(1) Authorized Number of Shares. Subject to adjustment under Section 9, on or after August 1, 2018, Awards may be made under the Plan (any or all of which Awards may be in the form of Incentive Stock Options, as defined in Section 5(b)) for up to such number of shares of common stock, \$0.001 par value per share, of the Company (the "*Common Stock*") as is equal to the sum of:

(A) 766,500 shares of Common Stock; plus

(B) such additional number of shares of Common Stock as is equal to the number of shares of Common Stock subject to awards granted under the Tokai Pharmaceuticals, Inc. 2007 Stock Incentive Plan, as amended, which awards expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by the Company at their original issuance price pursuant to a contractual repurchase right (subject, however, in the case of Incentive Stock Options to any limitations of the Code); plus

(C) an annual increase to be added on the first day of each fiscal year, beginning with the fiscal year ending December 31, 2019 and continuing for each fiscal year until, and including, the fiscal year ending December 31, 2024, equal to the least of (i) 550,000 shares of Common Stock, (ii) 4.0% of the outstanding shares on such date and (iii) an amount determined by the Board.

Shares issued under the Plan may consist in whole or in part of authorized but unissued shares or treasury shares.

(2) Share Counting. For purposes of counting the number of shares available for the grant of Awards under the Plan:

(A) all shares of Common Stock covered by SARs shall be counted against the number of shares available for the grant of Awards under the Plan; *provided, however*, that (i) SARs that may be settled only in cash shall not be so counted and (ii) if the Company grants an SAR in tandem with an Option for the same number of shares of Common Stock and

provides that only one such Award may be exercised (a “**Tandem SAR**”), only the shares covered by the Option, and not the shares covered by the Tandem SAR, shall be so counted, and the expiration of one in connection with the other’s exercise will not restore shares to the Plan;

(B) if any Award (including awards granted under this Plan prior to, on or after August 1, 2018) (i) expires or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right) or (ii) results in any Common Stock not being issued (including as a result of an SAR that was settleable either in cash or in stock actually being settled in cash), the unused Common Stock covered by such Award shall be added to the number of shares available for the future grant of Awards and again be available for the grant of Awards; *provided, however*, that (1) in the case of Incentive Stock Options, the foregoing shall be subject to any limitations under the Code, (2) in the case of the exercise of an SAR, the number of shares counted against the shares available under the Plan shall be the full number of shares subject to the SAR multiplied by the percentage of the SAR actually exercised, regardless of the number of shares actually used to settle such SAR upon exercise and (3) the shares covered by a Tandem SAR shall not again become available for grant upon the expiration or termination of such Tandem SAR; and

(C) shares of Common Stock delivered (either by actual delivery, attestation, or net exercise) to the Company by a Participant to (i) purchase shares of Common Stock upon the exercise of an Award or (ii) satisfy tax withholding obligations (including shares retained from the Award creating the tax obligation) shall not be added back to the number of shares available for the future grant of Awards.

(b) Substitute Awards. In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Awards in substitution for any options or other stock or stock-based awards granted by such entity or an affiliate thereof. Substitute Awards may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the Plan. Substitute Awards shall not count against the overall share limit set forth in Section 4(a)(1), except as may be required by reason of Section 422 and related provisions of the Code.

5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an “**Option**”) and determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable.

(b) Incentive Stock Options. An Option that the Board intends to be an “incentive stock option” as defined in Section 422 of the Code (an “**Incentive Stock Option**”) shall only be granted to employees of Novus Therapeutics, Inc., any of Novus Therapeutics, Inc.’s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code, and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. An

Option that is not intended to be an Incentive Stock Option shall be designated a "**Nonstatutory Stock Option**." The Company shall have no liability to a Participant, or any other party, if an Option (or any part thereof) that is intended to be an Incentive Stock Option is not an Incentive Stock Option or if the Company converts an Incentive Stock Option to a Nonstatutory Stock Option.

(c) **Exercise Price.** The Board shall establish the exercise price of each Option and specify the exercise price in the applicable Option agreement. The exercise price shall be not less than 100% of the fair market value per share of Common Stock as determined by (or in a manner approved by) the Board ("**Fair Market Value**") on the date the Option is granted; *provided* that if the Board approves the grant of an Option with an exercise price to be determined on a future date, the exercise price shall be not less than 100% of the Fair Market Value on such future date.

(d) **Duration of Options.** Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement; *provided, however,* that no Option will be granted with a term in excess of 10 years.

(e) **Exercise of Options.** Options may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with payment in full (in the manner specified in Section 5(f)) of the exercise price for the number of shares for which the Option is exercised. Shares of Common Stock subject to the Option will be delivered by the Company as soon as practicable following exercise.

(f) **Payment Upon Exercise.** Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(1) in cash or by check, payable to the order of the Company;

(2) except as may otherwise be provided in the applicable Option agreement or approved by the Board, in its sole discretion, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) to the extent provided for in the applicable Option agreement or approved by the Board, in its sole discretion, by delivery (either by actual delivery or attestation) of shares of Common Stock owned by the Participant valued at their Fair Market Value, provided (i) such method of payment is then permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board in its discretion and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(4) to the extent provided for in the applicable Nonstatutory Stock Option agreement or approved by the Board in its sole discretion, by delivery of a notice of "net exercise" to the Company, as a result of which the Participant would receive (i) the number of shares underlying the portion of the Option being exercised, less (ii) such number of shares as is equal to (A) the aggregate exercise price for the portion of the Option being exercised divided by (B) the Fair Market Value on the date of exercise;

(5) to the extent permitted by applicable law and provided for in the applicable Option agreement or approved by the Board, in its sole discretion, by payment of such other lawful consideration as the Board may determine; or

(6) by any combination of the above permitted forms of payment.

(g) Limitation on Repricing. Unless such action is approved by the Company's stockholders, the Company may not (except as provided for under Section 9): (1) amend any outstanding Option granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Option, (2) cancel any outstanding option (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan (other than Awards granted pursuant to Section 4(b)) covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled option, (3) cancel in exchange for a cash payment any outstanding Option with an exercise price per share above the then-current Fair Market Value, or (4) take any other action under the Plan that constitutes a "repricing" within the meaning of the rules of the NASDAQ Stock Market ("**NASDAQ**").

#### 6. Stock Appreciation Rights

(a) General. The Board may grant Awards consisting of stock appreciation rights ("**SARs**") entitling the holder, upon exercise, to receive an amount of Common Stock or cash or a combination thereof (such form to be determined by the Board) determined by reference to appreciation, from and after the date of grant, in the Fair Market Value of a share of Common Stock over the measurement price established pursuant to Section 6(b). The date as of which such appreciation is determined shall be the exercise date.

(b) Measurement Price. The Board shall establish the measurement price of each SAR and specify it in the applicable SAR agreement. The measurement price shall not be less than 100% of the Fair Market Value on the date the SAR is granted; *provided* that if the Board approves the grant of an SAR effective as of a future date, the measurement price shall be not less than 100% of the Fair Market Value on such future date.

(c) Duration of SARs. Each SAR shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable SAR agreement; *provided, however*, that no SAR will be granted with a term in excess of 10 years.

(d) Exercise of SARs. SARs may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with any other documents required by the Board.

(e) Limitation on Repricing. Unless such action is approved by the Company's stockholders, the Company may not (except as provided for under Section 9): (1) amend any outstanding SAR granted under the Plan to provide a measurement price per share that is lower than the then-current measurement price per share of such outstanding SAR, (2) cancel any outstanding SAR (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan (other than Awards granted pursuant to Section 4(b)) covering the same or a different number of shares of Common Stock and having an exercise or measurement price per share lower than the then-

current measurement price per share of the cancelled SAR, (3) cancel in exchange for a cash payment any outstanding SAR with a measurement price per share above the then-current Fair Market Value, or (4) take any other action under the Plan that constitutes a “repricing” within the meaning of the rules of NASDAQ.

7. Restricted Stock; Restricted Stock Units

(a) General. The Board may grant Awards entitling recipients to acquire shares of Common Stock (“**Restricted Stock**”), subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award. The Board may also grant Awards entitling the recipient to receive shares of Common Stock or cash to be delivered at the time such Award vests (“**Restricted Stock Units**”) (Restricted Stock and Restricted Stock Units are each referred to herein as a “**Restricted Stock Award**”).

(b) Terms and Conditions for All Restricted Stock Awards. The Board shall determine the terms and conditions of a Restricted Stock Award, including the conditions for vesting and repurchase (or forfeiture) and the issue price, if any.

(c) Additional Provisions Relating to Restricted Stock.

(1) Dividends. Unless otherwise provided in the applicable Award agreement, any dividends (whether paid in cash, stock or property) declared and paid by the Company with respect to shares of Restricted Stock (“**Accrued Dividends**”) shall be paid to the Participant only if and when such shares become free from the restrictions on transferability and forfeitability that apply to such shares. Each payment of Accrued Dividends will be made no later than the end of the calendar year in which the dividends are paid to stockholders of that class of stock or, if later, the 15th day of the third month following the lapsing of the restrictions on transferability and the forfeitability provisions applicable to the underlying shares of Restricted Stock.

(2) Stock Certificates. The Company may require that any stock certificates issued in respect of shares of Restricted Stock, as well as dividends or distributions paid on such Restricted Stock, shall be deposited in escrow by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the Participant or if the Participant has died, to his or her Designated Beneficiary. “**Designated Beneficiary**” means (i) the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant’s death or (ii) in the absence of an effective designation by a Participant, the Participant’s estate.

(d) Additional Provisions Relating to Restricted Stock Units.

(1) Settlement. Upon the vesting of and/or lapsing of any other restrictions (i.e., settlement) with respect to each Restricted Stock Unit, the Participant shall be entitled to receive from the Company such number of shares of Common Stock or (if so provided in the applicable Award agreement) an amount of cash equal to the Fair Market Value of such number of shares of Common

Stock as are set forth in the applicable Restricted Stock Unit agreement. The Board may, in its discretion, provide that settlement of Restricted Stock Units shall be deferred, on a mandatory basis or at the election of the Participant in a manner that complies with Section 409A of the Code.

(2) Voting Rights. A Participant shall have no voting rights with respect to any Restricted Stock Units.

(3) Dividend Equivalents. The Award agreement for Restricted Stock Units may provide Participants with the right to receive an amount equal to any dividends or other distributions declared and paid on an equal number of outstanding shares of Common Stock ("Dividend Equivalents"). Dividend Equivalents may be settled in cash and/or shares of Common Stock and shall be subject to the same restrictions on transfer and forfeitability as the Restricted Stock Units with respect to which paid, in each case to the extent provided in the Award agreement.

8. Other Stock-Based Awards

(a) General. Other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property, may be granted hereunder to Participants ("Other Stock-Based Awards"). Such Other Stock-Based Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock-Based Awards may be paid in shares of Common Stock or cash, as the Board shall determine.

(b) Terms and Conditions. Subject to the provisions of the Plan, the Board shall determine the terms and conditions of each Other Stock-Based Award, including any purchase price applicable thereto.

9. Adjustments for Changes in Common Stock and Certain Other Events

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under the Plan, (ii) the share counting rules set forth in Section 4(a), (iii) the number and class of securities and exercise price per share of each outstanding Option, (iv) the share and per-share provisions and the measurement price of each outstanding SAR, (v) the number of shares subject to and the repurchase price per share subject to each outstanding Restricted Stock Award and (vi) the share and per-share-related provisions and the purchase price, if any, of each outstanding Other Stock-Based Award, shall be equitably adjusted by the Company (or substituted Awards may be made, if applicable) in the manner determined by the Board. Without limiting the generality of the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to an outstanding Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock

acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(b) Reorganization Events.

(1) Definition. A “**Reorganization Event**” shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Awards Other than Restricted

Stock.

(A) In connection with a Reorganization Event, the Board may take any one or more of the following actions as to all or any (or any portion of) outstanding Awards other than Restricted Stock on such terms as the Board determines (except to the extent specifically provided otherwise in an applicable Award agreement or another agreement between the Company and the Participant): (i) provide that such Awards shall be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to a Participant, provide that all of the Participant’s unvested and/or unexercised Awards will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant (to the extent then exercisable) within a specified period following the date of such notice, (iii) provide that outstanding Awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the “**Acquisition Price**”), make or provide for a cash payment to Participants with respect to each Award held by a Participant equal to (A) the number of shares of Common Stock subject to the vested portion of the Award (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such Reorganization Event) multiplied by (B) the excess, if any, of (I) the Acquisition Price over (II) the exercise, measurement or purchase price of such Award and any applicable tax withholdings, in exchange for the termination of such Award, (v) provide that, in connection with a liquidation or dissolution of the Company, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise, measurement or purchase price thereof and any applicable tax withholdings) and (vi) any combination of the foregoing. In taking any of the actions permitted under this Section 9(b)(2), the Board shall not be obligated by the Plan to treat all Awards, all Awards held by a Participant, or all Awards of the same type, identically.

(B) Notwithstanding the terms of Section 9(b)(2)(A), in the case of outstanding Restricted Stock Units that are subject to Section 409A of the Code: (i) if the applicable Restricted Stock Unit agreement provides that the Restricted Stock Units shall be settled upon a “change in control event” within the meaning of Treasury Regulation Section 1.409A-3(i)(5)(i), and the Reorganization Event constitutes such a “change in control event”, then no assumption or substitution shall be permitted pursuant to Section 9(b)(2)(A)(i) and the Restricted



Stock Units shall instead be settled in accordance with the terms of the applicable Restricted Stock Unit agreement; and (ii) the Board may only undertake the actions set forth in clauses (iii), (iv) or (v) of Section 9(b)(2)(A) if the Reorganization Event constitutes a “change in control event” as defined under Treasury Regulation Section 1.409A-3(i)(5)(i) and such action is permitted or required by Section 409A of the Code; if the Reorganization Event is not a “change in control event” as so defined or such action is not permitted or required by Section 409A of the Code, and the acquiring or succeeding corporation does not assume or substitute the Restricted Stock Units pursuant to clause (i) of Section 9(b)(2)(A), then the unvested Restricted Stock Units shall terminate immediately prior to the consummation of the Reorganization Event without any payment in exchange therefor.

(C) For purposes of Section 9(b)(2)(A)(i), an Award (other than Restricted Stock) shall be considered assumed if, following consummation of the Reorganization Event, such Award confers the right to purchase or receive pursuant to the terms of such Award, for each share of Common Stock subject to the Award immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); *provided, however*, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise or settlement of the Award to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determined to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

(3) Consequences of a Reorganization Event on Restricted Stock. Upon the occurrence of a Reorganization Event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company with respect to outstanding Restricted Stock shall inure to the benefit of the Company’s successor and shall, unless the Board determines otherwise, apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to such Restricted Stock; *provided, however*, that the Board may provide for termination or deemed satisfaction of such repurchase or other rights under the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, either initially or by amendment. Upon the occurrence of a Reorganization Event involving the liquidation or dissolution of the Company, except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, all restrictions and conditions on all Restricted Stock then outstanding shall automatically be deemed terminated or satisfied.

10. General Provisions Applicable to Awards

(a) **Transferability of Awards.** Awards shall not be sold, assigned, transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an Incentive Stock Option, pursuant to a qualified domestic relations order, and, during the life of the Participant, shall be exercisable only by the Participant; *provided, however*, that the Board may permit or provide in an Award for the gratuitous transfer of the Award by the Participant to or for the benefit of any immediate family member, family trust or other entity established for the benefit of the Participant and/or an immediate family member thereof if the Company would be eligible to use a Form S-8 under the Securities Act for the registration of the sale of the Common Stock subject to such Award to such proposed transferee; *provided further*, that the Company shall not be required to recognize any such permitted transfer until such time as such permitted transferee shall, as a condition to such transfer, deliver to the Company a written instrument in form and substance satisfactory to the Company confirming that such transferee shall be bound by all of the terms and conditions of the Award. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees. For the avoidance of doubt, nothing contained in this Section 10(a) shall be deemed to restrict a transfer to the Company.

(b) **Documentation.** Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) **Board Discretion.** Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) **Termination of Status.** The Board shall determine the effect on an Award of the disability, death, termination or other cessation of employment, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which, the Participant, or the Participant's legal representative, conservator, guardian or Designated Beneficiary, may exercise rights under the Award.

(e) **Withholding.** The Participant must satisfy all applicable federal, state, and local or other income and employment tax withholding obligations before the Company will deliver stock certificates or otherwise recognize ownership of Common Stock under an Award. The Company may decide to satisfy the withholding obligations through additional withholding on salary or wages. If the Company elects not to or cannot withhold from other compensation, the Participant must pay the Company the full amount, if any, required for withholding or have a broker tender to the Company cash equal to the withholding obligations. Payment of withholding obligations is due before the Company will issue any shares on exercise, vesting or release from forfeiture of an Award or at the same time as payment of the exercise or purchase price, unless the Company determines otherwise. If provided for in an Award or approved by the Board in its sole discretion, a Participant may satisfy such tax obligations in whole or in part by delivery (either by actual delivery or attestation) of shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their Fair Market Value; *provided, however*, except as otherwise provided by the Board, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such

supplemental taxable income). Shares used to satisfy tax withholding requirements cannot be subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements.

(f) Amendment of Award. Except as otherwise provided in Sections 5(g) and 6(e) with respect to repricings and Section 11(d) with respect to actions requiring stockholder approval, the Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock Option to a Nonstatutory Stock Option. The Participant's consent to such action shall be required unless (i) the Board determines that the action, taking into account any related action, does not materially and adversely affect the Participant's rights under the Plan or (ii) the change is permitted under Section 9.

(g) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously issued or delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and regulations and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(h) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in whole or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part, as the case may be.

11. Miscellaneous

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award by virtue of the adoption of the Plan, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares.

(c) Effective Date and Term of Plan. The Plan shall become effective upon the effectiveness of the registration statement on Form S-1 for the Company's initial public offering of its Common Stock (the "Effective Date"). No Awards shall be granted under the Plan after the expiration of 10 years from the Effective Date, but Awards previously granted may extend beyond that date.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time provided that (i) to the extent required by Section 162(m) of the Code, no Award granted to a Participant that is intended to comply with Section 162(m) of the Code after the

date of such amendment shall become exercisable, realizable or vested, as applicable to such Award, unless and until the Company's stockholders approve such amendment in the manner required by Section 162(m) of the Code; and (ii) no amendment that would require stockholder approval under the rules of the NASDAQ Stock Market may be made effective unless and until the Company's stockholders approve such amendment. In addition, if at any time the approval of the Company's stockholders is required as to any other modification or amendment under Section 422 of the Code or any successor provision with respect to Incentive Stock Options, the Board may not effect such modification or amendment without such approval. Unless otherwise specified in the amendment, any amendment to the Plan adopted in accordance with this Section 11(d) shall apply to, and be binding on the holders of, all Awards outstanding under the Plan at the time the amendment is adopted, provided the Board determines that such amendment, taking into account any related action, does not materially and adversely affect the rights of Participants under the Plan. No Award shall be made that is conditioned upon stockholder approval of any amendment to the Plan unless the Award provides that (i) it will terminate or be forfeited if stockholder approval of such amendment is not obtained within no more than 12 months from the date of grant and (2) it may not be exercised or settled (or otherwise result in the issuance of Common Stock) prior to such stockholder approval.

(e) Authorization of Sub-Plans (including for Grants to non-U.S. Employees). The Board may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable securities, tax or other laws of various jurisdictions. The Board shall establish such sub-plans by adopting supplements to the Plan containing (i) such limitations on the Board's discretion under the Plan as the Board deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board shall deem necessary or desirable. All supplements adopted by the Board shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction which is not the subject of such supplement.

(f) Compliance with Section 409A of the Code. Except as provided in individual Award agreements initially or by amendment, if and to the extent (i) any portion of any payment, compensation or other benefit provided to a Participant pursuant to the Plan in connection with his or her employment termination constitutes "nonqualified deferred compensation" within the meaning of Section 409A of the Code and (ii) the Participant is a specified employee as defined in Section 409A(a)(2)(B)(i) of the Code, in each case as determined by the Company in accordance with its procedures, by which determinations the Participant (through accepting the Award) agrees that he or she is bound, such portion of the payment, compensation or other benefit shall not be paid before the day that is six months plus one day after the date of "separation from service" (as determined under Section 409A of the Code) (the "New Payment Date"), except as Section 409A of the Code may then permit. The aggregate of any payments that otherwise would have been paid to the Participant during the period between the date of separation from service and the New Payment Date shall be paid to the Participant in a lump sum on such New Payment Date, and any remaining payments will be paid on their original schedule.

The Company makes no representations or warranty and shall have no liability to the Participant or any other person if any provisions of or payments, compensation or other benefits under the Plan are determined to constitute nonqualified deferred compensation subject to Section 409A of the Code but do not to satisfy the conditions of that section.

(g) Limitations on Liability. Notwithstanding any other provisions of the Plan, no individual acting as a director, officer, employee or agent of the Company will be liable to any Participant, former Participant, spouse, beneficiary, or any other person for any claim, loss, liability, or expense incurred in connection with the Plan, nor will such individual be personally liable with respect to the Plan because of any contract or other instrument he or she executes in his or her capacity as a director, officer, employee or agent of the Company. The Company will indemnify and hold harmless each director, officer, employee or agent of the Company to whom any duty or power relating to the administration or interpretation of the Plan has been or will be delegated, against any cost or expense (including attorneys' fees) or liability (including any sum paid in settlement of a claim with the Board's approval) arising out of any act or omission to act concerning the Plan unless arising out of such person's own fraud or bad faith.

(h) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the State of Delaware, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than the State of Delaware.

NOVUS THERAPEUTICS, INC.  
(f/k/a TOKAI PHARMACEUTICALS, INC.)

2014 EMPLOYEE STOCK PURCHASE PLAN

The purpose of this Plan is to provide eligible employees of Novus Therapeutics, Inc. (f/k/a Tokai Pharmaceuticals, Inc.) (the “Company”) and certain of its subsidiaries with opportunities to purchase shares of the Company’s common stock, \$0.001 par value (the “Common Stock”), commencing at such time as the Board of Directors of the Company (the “Board”) shall determine. Subject to adjustment under Section 15 hereof, the number of shares of Common Stock that have been approved for issuance under this Plan from and after August 1, 2018 shall be the sum of:

(a) 209,500 shares of Common Stock; plus

(b) an annual increase to be added on the first day of each fiscal year, commencing on January 1, 2019 and ending on December 31, 2024, equal to the least of (i) 135,000 shares of Common Stock, (ii) one percent (1%) of the outstanding shares on such date and (iii) an amount determined by the Board.

This Plan is intended to qualify as an “employee stock purchase plan” as defined in Section 423 of the Internal Revenue Code of 1986, as amended (the “Code”), and the regulations issued thereunder, and shall be interpreted consistent therewith.

1. Administration. The Plan will be administered by the Board or by a Committee appointed by the Board (the “Committee”). The Board or the Committee has authority to make rules and regulations for the administration of the Plan and its interpretation and decisions with regard thereto shall be final and conclusive.

2. Eligibility. All employees of the Company and all employees of any subsidiary of the Company (as defined in Section 424(f) of the Code) designated by the Board or the Committee from time to time (a “Designated Subsidiary”), are eligible to participate in any one or more of the offerings of Options (as defined in Section 9) to purchase Common Stock under the Plan provided that:

(a) they are customarily employed by the Company or a Designated Subsidiary for more than 20 hours a week and for more than five months in a calendar year;

(b) they have been employed by the Company or a Designated Subsidiary for at least six (6) months prior to enrolling in the Plan; and

(c) they are employees of the Company or a Designated Subsidiary on the first day of the applicable Plan Period (as defined below).

No employee may be granted an Option hereunder if such employee, immediately after the Option is granted, owns 5% or more of the total combined voting power or value of the stock of the Company or any subsidiary. For purposes of the preceding sentence, the attribution rules

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of Section 424(d) of the Code shall apply in determining the stock ownership of an employee, and all stock that the employee has a contractual right to purchase shall be treated as stock owned by the employee.

The Board retains the discretion to determine which eligible employees may participate in an offering pursuant to and consistent with Treasury Regulation Sections 1.423-2(e) and (f).

3. **Offerings.** The Company will make one or more offerings (“Offerings”) to employees to purchase stock under this Plan. Offerings will begin at such time as the Board shall determine. Each Offering will consist of a six-month period (a “Plan Period”) during which payroll deductions will be made and held for the purchase of Common Stock at the end of the Plan Period. The Board or the Committee may, at its discretion, choose a different Plan Period of not more than twelve (12) months for Offerings.

4. **Participation.** An employee eligible on the first day of a Plan Period of any Offering may participate in such Offering by completing and forwarding either a written or electronic payroll deduction authorization form to the employee’s appropriate payroll office at least 15 days prior to the commencement of the applicable Plan Period. The form will authorize a regular payroll deduction from the Compensation received by the employee during the Plan Period. Unless an employee files a new form or withdraws from the Plan, his or her deductions and purchases will continue at the same rate for future Offerings under the Plan as long as the Plan remains in effect. The term “Compensation” means the amount of money reportable on the employee’s Federal Income Tax Withholding Statement, excluding overtime, shift premium, incentive or bonus awards, allowances and reimbursements for expenses such as relocation allowances for travel expenses, income or gains associated with the grant or vesting of restricted stock, income or gains on the exercise of Company stock options or stock appreciation rights, and similar items, whether or not shown or separately identified on the employee’s Federal Income Tax Withholding Statement, but including, in the case of salespersons, sales commissions to the extent determined by the Board or the Committee.

5. **Deductions.** The Company will maintain payroll deduction accounts for all participating employees. With respect to any Offering made under this Plan, an employee may authorize a payroll deduction in any percentage amount (in whole percentages) up to a maximum of 15% of the Compensation he or she receives during the Plan Period or such shorter period during which deductions from payroll are made. The Board or the Committee may, at its discretion, designate a lower maximum contribution rate. The minimum payroll deduction is such percentage of Compensation as may be established from time to time by the Board or the Committee.

6. **Deduction Changes.** An employee may decrease or discontinue his or her payroll deduction once during any Plan Period, by filing either a written or electronic new payroll deduction authorization form. However, an employee may not increase his or her payroll deduction during a Plan Period. If an employee elects to discontinue his or her payroll deductions during a Plan Period, but does not elect to withdraw his or her funds pursuant to Section 8 hereof, funds deducted prior to his or her election to discontinue will be applied to the purchase of Common Stock on the Exercise Date (as defined below).

7. Interest. Interest will not be paid on any employee accounts, except to the extent that the Board or the Committee, in its sole discretion, elects to credit employee accounts with interest at such rate as it may from time to time determine.

8. Withdrawal of Funds. An employee may at any time prior to the close of business on the tenth business day prior to the end of a Plan Period and for any reason permanently draw out the balance accumulated in the employee's account and thereby withdraw from participation in an Offering. Partial withdrawals are not permitted. The employee may not begin participation again during the remainder of the Plan Period during which the employee withdrew his or her balance. The employee may participate in any subsequent Offering in accordance with terms and conditions established by the Board or the Committee.

9. Purchase of Shares.

(a) Number of Shares. On the first day of each Plan Period, the Company will grant to each eligible employee who is then a participant in the Plan an option (an "Option") to purchase on the last business day of such Plan Period (the "Exercise Date") at the applicable purchase price (the "Option Price") up to that number of shares of Common Stock determined by multiplying \$2,083 by the number of full months in the Plan Period and dividing the result by the closing price (as determined below) on the first day of such Plan Period; provided, however, that no employee may be granted an Option which permits his or her rights to purchase Common Stock under this Plan and any other employee stock purchase plan (as defined in Section 423(b) of the Code) of the Company and its subsidiaries, to accrue at a rate which exceeds \$25,000 of the fair market value of such Common Stock (determined at the date such Option is granted) for each calendar year in which the Option is outstanding at any time; and, provided, further, however, that the Committee may, in its discretion, set a fixed maximum number of shares of Common Stock that each eligible employee may purchase per Plan Period which number may not be greater than the number of shares of Common Stock determined by using the formula in the first clause of this Section 9(a) and which number shall be subject to the second clause of this Section 9(a).

(b) Option Price. The Board or the Committee shall determine the Option Price for each Plan Period, including whether such Option Price shall be determined based on the lesser of the closing price of the Common Stock on (i) the first business day of the Plan Period or (ii) the Exercise Date, or shall be based solely on the closing price of the Common Stock on the Exercise Date; provided, however, that such Option Price shall be at least 85% of the applicable closing price. In the absence of a determination by the Board or the Committee, the Option Price will be 85% of the lesser of the closing price of the Common Stock on (i) the first business day of the Plan Period or (ii) the Exercise Date. The closing price shall be (a) the closing price (for the primary trading session) on any national securities exchange on which the Common Stock is listed or (b) the average of the closing bid and asked prices in the over-the-counter-market, whichever is applicable, as published in The Wall Street Journal or another source selected by the Board or the Committee. If no sales of Common Stock were made on such a day, the price of the Common Stock shall be the reported price for the next preceding day on which sales were made.



(c) Exercise of Option. Each employee who continues to be a participant in the Plan on the Exercise Date shall be deemed to have exercised his or her Option at the Option Price on such date and shall be deemed to have purchased from the Company the number of whole shares of Common Stock reserved for the purpose of the Plan that his or her accumulated payroll deductions on such date will pay for, but not in excess of the maximum numbers determined in the manner set forth above.

(d) Return of Unused Payroll Deductions. Any balance remaining in an employee's payroll deduction account at the end of a Plan Period will be automatically refunded to the employee, except that any balance that is less than the purchase price of one share of Common Stock will be carried forward into the employee's payroll deduction account for the following Offering, unless the employee elects not to participate in the following Offering under the Plan, in which case the balance in the employee's account shall be refunded.

10. Issuance of Certificates. Certificates representing shares of Common Stock purchased under the Plan may be issued only in the name of the employee, in the name of the employee and another person of legal age as joint tenants with rights of survivorship, or (in the Company's sole discretion) in the name of a brokerage firm, bank, or other nominee holder designated by the employee. The Company may, in its sole discretion and in compliance with applicable laws, authorize the use of book entry registration of shares in lieu of issuing stock certificates.

11. Rights on Retirement, Death or Termination of Employment. If a participating employee's employment ends before the last business day of a Plan Period, no payroll deduction shall be taken from any pay then due and owing to the employee and the balance in the employee's account shall be paid to the employee. In the event of the employee's death before the last business day of a Plan Period, the Company shall, upon notification of such death, pay the balance of the employee's account (a) to the executor or administrator of the employee's estate or (b) if no such executor or administrator has been appointed to the knowledge of the Company, to such other person(s) as the Company may, in its discretion, designate. If, before the last business day of the Plan Period, the Designated Subsidiary by which an employee is employed ceases to be a subsidiary of the Company, or if the employee is transferred to a subsidiary of the Company that is not a Designated Subsidiary, the employee shall be deemed to have terminated employment for the purposes of this Plan.

12. Optionees Not Stockholders. Neither the granting of an Option to an employee nor the deductions from his or her pay shall make such employee a stockholder of the shares of Common Stock covered by an Option under this Plan until he or she has purchased and received such shares.

13. Options Not Transferable. Options under this Plan are not transferable by a participating employee other than by will or the laws of descent and distribution, and are exercisable during the employee's lifetime only by the employee.

14. Application of Funds. All funds received or held by the Company under this Plan may be combined with other corporate funds and may be used for any corporate purpose.

15. Adjustment for Changes in Common Stock and Certain Other Events.

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under this Plan, (ii) the share limitations set forth in Section 9, and (iii) the Option Price shall be equitably adjusted to the extent determined by the Board or the Committee.

(b) Reorganization Events.

(1) Definition. A "Reorganization Event" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Options. In connection with a Reorganization Event, the Board or the Committee may take any one or more of the following actions as to outstanding Options on such terms as the Board or the Committee determines: (i) provide that Options shall be assumed, or substantially equivalent Options shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to employees, provide that all outstanding Options will be terminated immediately prior to the consummation of such Reorganization Event and that all such outstanding Options will become exercisable to the extent of accumulated payroll deductions as of a date specified by the Board or the Committee in such notice, which date shall not be less than ten (10) days preceding the effective date of the Reorganization Event, (iii) upon written notice to employees, provide that all outstanding Options will be cancelled as of a date prior to the effective date of the Reorganization Event and that all accumulated payroll deductions will be returned to participating employees on such date, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "Acquisition Price"), change the last day of the Plan Period to be the date of the consummation of the Reorganization Event and make or provide for a cash payment to each employee equal to (A) (1) the Acquisition Price times (2) the number of shares of Common Stock that the employee's accumulated payroll deductions as of immediately prior to the Reorganization Event could purchase at the Option Price, where the Acquisition Price is treated as the fair market value of the Common Stock on the last day of the applicable Plan Period for purposes of determining the Option Price under Section 9(b) hereof, and where the number of shares that could be purchased is subject to the limitations set forth in Section 9(a), minus (B) the result of multiplying such number of shares by such Option Price, (v) provide that, in connection with a liquidation or dissolution of the Company, Options shall convert into the right to receive liquidation proceeds (net of the Option Price thereof) and (vi) any combination of the foregoing.

For purposes of clause (i) above, an Option shall be considered assumed if, following consummation of the Reorganization Event, the Option confers the right to purchase, for each share of Common Stock subject to the Option immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); provided, however, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise of Options to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determines to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

16. **Amendment of the Plan.** The Board may at any time, and from time to time, amend or suspend this Plan or any portion thereof, except that (a) if the approval of any such amendment by the stockholders of the Company is required by Section 423 of the Code, such amendment shall not be effected without such approval, and (b) in no event may any amendment be made that would cause the Plan to fail to comply with Section 423 of the Code.

17. **Insufficient Shares.** If the total number of shares of Common Stock specified in elections to be purchased under any Offering plus the number of shares purchased under previous Offerings under this Plan exceeds the maximum number of shares issuable under this Plan, the Board or the Committee will allot the shares then available on a pro-rata basis.

18. **Termination of the Plan.** This Plan may be terminated at any time by the Board. Upon termination of this Plan all amounts in the accounts of participating employees shall be promptly refunded.

19. **Governmental Regulations.** The Company's obligation to sell and deliver Common Stock under this Plan is subject to listing on a national stock exchange (to the extent the Common Stock is then so listed or quoted) and the approval of all governmental authorities required in connection with the authorization, issuance or sale of such stock.

20. **Governing Law.** The Plan shall be governed by Delaware law except to the extent that such law is preempted by federal law.

21. **Issuance of Shares.** Shares may be issued upon exercise of an Option from authorized but unissued Common Stock, from shares held in the treasury of the Company, or from any other proper source.

22. **Notification upon Sale of Shares.** Each employee agrees, by entering the Plan, to promptly give the Company notice of any disposition of shares purchased under the Plan where such disposition occurs within two years after the date of grant of the Option pursuant to which

such shares were purchased. 23. Grants to Employees in Foreign Jurisdictions. The Company may, to comply with the laws of a foreign jurisdiction, grant Options to employees of the Company or a Designated Subsidiary who are citizens or residents of such foreign jurisdiction (without regard to whether they are also citizens of the United States or resident aliens (within the meaning of Section 7701(b)(1)(A) of the Code)) with terms that are less favorable (but not more favorable) than the terms of Options granted under the Plan to employees of the Company or a Designated Subsidiary who are resident in the United States. Notwithstanding the preceding provisions of this Plan, employees of the Company or a Designated Subsidiary who are citizens or residents of a foreign jurisdiction (without regard to whether they are also citizens of the United States or resident aliens (within the meaning of Section 7701(b)(1)(A) of the Code)) may be excluded from eligibility under the Plan if (a) the grant of an Option under the Plan to a citizen or resident of the foreign jurisdiction is prohibited under the laws of such jurisdiction or (b) compliance with the laws of the foreign jurisdiction would cause the Plan to violate the requirements of Section 423 of the Code. The Company may add one or more appendices to this Plan describing the operation of the Plan in those foreign jurisdictions in which employees are excluded from participation or granted less favorable Options.

24. Authorization of Sub-Plans. The Board may from time to time establish one or more sub-plans under the Plan with respect to one or more Designated Subsidiaries, provided that such sub-plan complies with Section 423 of the Code.

25. Withholding. If applicable tax laws impose a tax withholding obligation, each affected employee shall, no later than the date of the event creating the tax liability, make provision satisfactory to the Board for payment of any taxes required by law to be withheld in connection with any transaction related to Options granted to or shares acquired by such employee pursuant to the Plan. The Company may, to the extent permitted by law, deduct any such taxes from any payment of any kind otherwise due to an employee.

26. Effective Date and Approval of Stockholders. The Plan shall become effective upon the effectiveness of the registration statement on Form S-1 for the Company's initial public offering of its Common Stock, subject to approval by the stockholders of the Company as required by Section 423 of the Code, which approval must occur within twelve months of the adoption of the Plan by the Board.

Adopted by the Board of Directors on August 28, 2014

Approved by the stockholders on  
August 29, 2014

## CERTIFICATIONS

I, Gregory J. Fleisher, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Novus 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. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 6, 2018

By: /s/ Gregory J. Fleisher  
Gregory J. Fleisher  
Chief Executive Officer  
(Principal Executive Officer)

## CERTIFICATIONS

I, Jon S. Kuwahara, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Novus 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. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 6, 2018

By: /s/ Jon S. Kuwahara  
Jon S. Kuwahara  
Senior Vice President Finance & Administration  
(Principal 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 Novus Therapeutics, Inc. (the "Company") for the period ended June 30, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Gregory J. Flesher, President and Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of her 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: August 6, 2018

By: /s/ Gregory J. Flesher  
Gregory J. Flesher  
Chief Executive Officer  
(Principal Executive 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 Novus Therapeutics, Inc. (the "Company") for the period ended June 30, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Jon S. Kuwahara, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of 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: August 6, 2018

By: /s/ Jon S. Kuwahara  
Jon S. Kuwahara  
Senior Vice President Finance & Administration  
(Principal Financial and Accounting Officer)