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: 001-36003

CONATUS PHARMACEUTICALS INC.

(Exact name of registrant as specified in its charter)

Delaware	**20-3183915**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
16745 W. Bernardo Dr., Suite 200 San Diego, CA	**92127**
(Address of Principal Executive Offices)	**(Zip Code)**

(858) 376-2600
(Registrant's Telephone Number, Including Area Code)

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

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

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

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

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

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

As of July 26, 2018, the registrant had 30,171,048 shares of common stock ($0.0001 par value) outstanding.

CONATUS PHARMACEUTICALS INC.

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PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

Conatus Pharmaceuticals Inc.
Condensed Balance Sheets
(In thousands, except par value data)
(Unaudited)

	June 30, 2018	December 31, 2017
Assets		
Current assets:		
Cash and cash equivalents	$ 11,639	$ 16,079
Marketable securities	46,079	58,774
Collaboration receivables	4,853	3,367
Prepaid and other current assets	2,176	1,004
Total current assets	64,747	79,224
Property and equipment, net	130	179
Other assets	2,023	2,538
Total assets	$ 66,900	$ 81,941
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable and accrued expenses	$ 11,635	$ 11,962
Accrued compensation	1,485	2,008
Current portion of deferred revenue	14,430	14,172
Total current liabilities	27,550	28,142
Deferred revenue, less current portion	5,749	12,519
Convertible note payable	13,530	13,158
Deferred rent	99	126
Stockholders' equity:		
Preferred stock, $0.0001 par value; 10,000 shares authorized; no shares issued and outstanding	—	—
Common stock, $0.0001 par value; 200,000 shares authorized; 30,145 shares issued and outstanding at June 30, 2018; 30,035 shares issued and outstanding at December 31, 2017	3	3
Additional paid-in capital	198,143	196,077
Accumulated other comprehensive loss	(41)	(77)
Accumulated deficit	(178,133)	(168,007)
Total stockholders' equity	19,972	27,996
Total liabilities and stockholders' equity	$ 66,900	$ 81,941

See accompanying notes to condensed financial statements.

Conatus Pharmaceuticals Inc.
Condensed Statements of Operations and Comprehensive Loss
(In thousands, except per share data)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Revenues:				
Collaboration revenue	$ 8,774	$ 10,008	$ 18,511	$ 17,006
Total revenues	8,774	10,008	18,511	17,006
Operating expenses:				
Research and development	10,737	13,218	22,818	21,144
General and administrative	2,594	2,194	5,307	4,957
Total operating expenses	13,331	15,412	28,125	26,101
Loss from operations	(4,557)	(5,404)	(9,614)	(9,095)
Other income (expense):				
Interest income	244	218	477	389
Interest expense	(187)	(187)	(372)	(284)
Other income (expense)	3	(44)	(6)	(50)
Total other income (expense)	60	(13)	99	55
Net loss	(4,497)	(5,417)	(9,515)	(9,040)
Other comprehensive income (loss):				
Net unrealized gains (losses) on marketable securities	71	(3)	36	(16)
Comprehensive loss	$ (4,426)	$ (5,420)	$ (9,479)	$ (9,056)
Net loss per share, basic and diluted	$ (0.15)	$ (0.19)	$ (0.32)	$ (0.33)
Weighted average shares outstanding used in computing net loss per share, basic and diluted	30,114	28,103	30,081	27,139

See accompanying notes to condensed financial statements.

Conatus Pharmaceuticals Inc.
Condensed Statements of Cash Flows
(In thousands)
(Unaudited)

	Six Months Ended June 30,	
	2018	**2017**
Operating activities		
Net loss	$ (9,515)	$ (9,040)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	54	54
Stock-based compensation expense	1,912	2,063
Amortization of premiums and discounts on marketable securities, net	(127)	10
Accrued interest included in convertible note payable	372	279
Changes in operating assets and liabilities:		
Collaboration receivables	(1,486)	(4,500)
Prepaid and other current assets	277	(136)
Other assets	(246)	(872)
Accounts payable and accrued expenses	(334)	3,262
Accrued compensation	(523)	(985)
Deferred revenue	(7,811)	(10,007)
Deferred rent	(20)	(14)
Net cash used in operating activities	(17,447)	(19,886)
Investing activities		
Maturities of marketable securities	36,925	28,309
Purchase of marketable securities	(24,067)	(81,836)
Capital expenditures	(5)	(21)
Net cash provided by (used in) investing activities	12,853	(53,548)
Financing activities		
Proceeds from issuance of convertible note payable, net	—	12,500
Principal payment on promissory note	—	(1,000)
Proceeds from issuance of common stock, net	—	30,741
Repurchase of common stock	—	(11,203)
Proceeds from stock issuances related to exercise of stock options and employee stock purchase plan	154	78
Net cash provided by financing activities	154	31,116
Net decrease in cash and cash equivalents	(4,440)	(42,318)
Cash and cash equivalents at beginning of period	16,079	58,083
Cash and cash equivalents at end of period	$ 11,639	$ 15,765
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ —	$ 5
Supplemental schedule of noncash financing activities:		
Costs related to issuance of common stock included in accounts payable and accrued expenses	$ —	$ 131

See accompanying notes to condensed financial statements.

1. Organization and Basis of Presentation

Conatus Pharmaceuticals Inc. (the Company) was incorporated in the state of Delaware on July 13, 2005. The Company is a biotechnology company focused on the development and commercialization of novel medicines to treat liver disease.

As of June 30, 2018, the Company has devoted substantially all of its efforts to product development and has not realized product sales revenues from its planned principal operations.

The Company has a limited operating history, and the sales and income potential of the Company's business and market are unproven. The Company has experienced net losses since its inception and, as of June 30, 2018, had an accumulated deficit of $178.1 million. The Company expects to continue to incur net losses for at least the next several years. Successful transition to attaining profitable operations is dependent upon achieving a level of revenues adequate to support the Company's cost structure. If the Company is unable to generate revenues adequate to support its cost structure, the Company may need to raise additional equity or debt financing.

The accompanying unaudited interim condensed financial statements have been prepared in accordance with U.S. generally accepted accounting principles (GAAP) and the rules and regulations of the Securities and Exchange Commission (SEC) related to a quarterly report on Form 10-Q. Certain information and note disclosures normally included in annual financial statements prepared in accordance with GAAP have been condensed or omitted pursuant to those rules and regulations. The unaudited interim condensed financial statements reflect all adjustments which, in the opinion of management, are necessary for a fair statement of the results for the periods presented. All such adjustments are of a normal and recurring nature. The operating results presented in these unaudited interim condensed financial statements are not necessarily indicative of the results that may be expected for any future periods. These unaudited interim condensed financial statements should be read in conjunction with the audited financial statements and the notes thereto for the year ended December 31, 2017 included in the Company's annual report on Form 10-K filed with the SEC on March 8, 2018.

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of condensed financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Concentrations of Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash, cash equivalents and marketable securities. The Company maintains deposits in federally insured financial institutions in excess of federally insured limits. The Company has not experienced any losses in such accounts and believes it is not exposed to significant risk on its cash. Additionally, the Company established guidelines regarding approved investments and maturities of investments, which are designed to maintain safety and liquidity.

Cash and Cash Equivalents

The Company considers all highly liquid investments with an original maturity from the date of purchase of three months or less to be cash equivalents. Cash and cash equivalents include cash in readily available checking and money market accounts.

Marketable Securities

The Company classifies its marketable securities as available-for-sale and records such assets at estimated fair value in the condensed balance sheets, with unrealized gains and losses, if any, reported as a component of other comprehensive income (loss) within the condensed statements of operations and comprehensive loss and as a separate component of stockholders' equity. The Company classifies marketable securities with remaining maturities greater than one year as current assets because such marketable securities are available to fund the Company's current operations. The Company invests its excess cash balances primarily in corporate debt securities and money market funds with strong credit ratings. Realized gains and losses are calculated on the specific identification method and recorded as interest income. There were no realized gains and losses for the six-month periods ended June 30, 2018 and 2017.

At each balance sheet date, the Company assesses available-for-sale securities in an unrealized loss position to determine whether the unrealized loss is other-than-temporary. The Company considers factors including: the significance of the decline in value compared to the cost basis, underlying factors contributing to a decline in the prices of securities in a single asset class, the length of time the market value of the security has been less than its cost basis, the security's relative performance versus its peers, sector or asset class, expected market volatility and the market and economy in general. When the Company determines that a decline in the fair value below its cost basis is other-than-temporary, the Company recognizes an impairment loss in the period in which the other-than-temporary decline occurred. There have been no other-than-temporary declines in the value of marketable securities, as it is more likely than not the Company will hold the securities until maturity or a recovery of the cost basis.

Fair Value of Financial Instruments

The carrying amounts of prepaid and other current assets, accounts payable and accrued expenses are reasonable estimates of their fair value because of the short maturity of these items.

Stock-Based Compensation

Stock-based compensation expense for stock option grants under the Company's stock option plans is recorded at the estimated fair value of the award as of the grant date and is recognized as expense on a straight-line basis over the requisite service period of the stock-based award, and forfeitures are recognized as they occur. Stock-based compensation expense for employee stock purchases under the Company's 2013 Employee Stock Purchase Plan (the ESPP) is recorded at the estimated fair value of the purchase as of the plan enrollment date and is recognized as expense on a straight-line basis over the applicable six-month ESPP offering period. The estimation of stock option and ESPP fair value requires management to make estimates and judgments about, among other things, employee exercise behavior, forfeiture rates and volatility of the Company's common stock. The judgments directly affect the amount of compensation expense that will be recognized.

Property and Equipment

Property and equipment, which consists of furniture and fixtures, computers and office equipment and leasehold improvements, are stated at cost and depreciated over the estimated useful lives of the assets (three to five years) using the straight-line method. Leasehold improvements are amortized over the shorter of their estimated useful lives or the lease term.

Long-Lived Assets

The Company regularly reviews the carrying value and estimated lives of all of its long-lived assets, including property and equipment, to determine whether indicators of impairment may exist which warrant adjustments to carrying values or estimated useful lives. The determinants used for this evaluation include management's estimate of the asset's ability to generate positive income from operations and positive cash flow in future periods, as well as the strategic significance of the assets to the Company's business objective. Should an impairment exist, the impairment loss would be measured based on the excess of the carrying amount of the asset's fair value. The Company has not recognized any impairment losses through June 30, 2018.

Revenue Recognition

Under the relevant accounting literature, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. The Company performs the following five steps in order to determine revenue recognition for contracts: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when, or as, the entity satisfies a performance obligation.

At contract inception, the Company identifies the performance obligations in the contract by assessing whether the goods or services promised within each contract are distinct. Revenue is then recognized for the amount of the transaction price that is allocated to the respective performance obligation when, or as, the performance obligation is satisfied.

In a contract with multiple performance obligations, the Company must develop estimates and assumptions that require judgment to determine the underlying stand-alone selling price for each performance obligation, which determines how the transaction price is allocated among the performance obligations. The estimation of the stand-alone selling price(s) may include estimates regarding forecasted revenues or costs, development timelines, discount rates, and probabilities of technical and regulatory success. The Company evaluates each performance obligation to determine if it can be satisfied at a point in time or over time. Any change made to estimated progress towards completion of a performance obligation and, therefore, revenue recognized will be recorded as a change in estimate. In addition, variable consideration must be evaluated to determine if it is constrained and, therefore, excluded from the transaction price.

If a license to the Company's intellectual property is determined to be distinct from the other performance obligations identified in a contract, the Company recognizes revenues from the transaction price allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are bundled with other promises, the Company utilizes judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from the allocated transaction price. The Company evaluates the measure of progress at each reporting period and, if necessary, adjusts the measure of performance and related revenue or expense recognition as a change in estimate.

At the inception of each arrangement that includes milestone payments, the Company evaluates whether the milestones are considered probable of being reached. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the Company's or a collaboration partner's control, such as regulatory approvals, are generally not considered probable of being achieved until those approvals are received. At the end of each reporting period, the Company re-evaluates the probability of achievement of milestones that are within its or a collaboration partner's control, such as operational developmental milestones and any related constraint, and, if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which will affect collaboration revenues and earnings in the period of adjustment. Revisions to the Company's estimate of the transaction price may also result in negative collaboration revenues and earnings in the period of adjustment.

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

In December 2016, the Company entered into an Option, Collaboration and License Agreement (the Collaboration Agreement) and an Investment Agreement (the Investment Agreement) with Novartis Pharma AG (Novartis). The Company concluded that there were two significant performance obligations under the Collaboration Agreement: the license and the research and development services, but that the license is not distinct from the research and development services as Novartis cannot obtain value from the license without the research and development services, which the Company is uniquely able to perform.

The Company concluded that progress towards completion of the performance obligations related to the Collaboration Agreement is best measured in an amount proportional to the collaboration expenses incurred and the total estimated collaboration expenses. The Company periodically reviews and updates the estimated collaboration expenses, when appropriate, which adjusts the percentage of revenue that is recognized for the period. While such changes to the Company's estimates have no impact on the Company's reported cash flows, the amount of revenue recorded in the period could be materially impacted. The transaction price of the Collaboration Agreement consists of the upfront payment, option exercise fee, deemed revenue from the premium paid by Novartis under the Investment Agreement and reimbursable research and development costs, net of certain expenses directly related to execution of the agreement.

Potential future payments for variable consideration, such as clinical, regulatory or commercial milestones, will be recognized when it is probable that, if recorded, a significant reversal will not take place. Potential future royalty payments will be recorded as revenue when the associated sales occur.

See Note 8 – Collaboration and License Agreements for further information.

Research and Development Expenses

All research and development costs are expensed as incurred.

Income Taxes

The Company's policy related to accounting for uncertainty in income taxes prescribes a recognition threshold and measurement attribute criteria for the financial statement recognition and measurement of tax positions taken or expected to be taken in a tax return. For those benefits to be recognized, a tax position must be more likely than not to be sustained upon examination by taxing authorities. As of December 31, 2017, there are no unrecognized tax benefits included in the condensed balance sheet that would, if recognized, affect the Company's effective tax rate, and the Company has noted no material changes through June 30, 2018. The Company has not recognized interest and penalties in the condensed balance sheets or condensed statements of operations and comprehensive loss. The Company is subject to U.S. and California taxation. As of December 31, 2017, the Company's tax years beginning 2005 to date are subject to examination by taxing authorities.

Comprehensive Loss

The Company is required to report all components of comprehensive loss, including net loss, in the condensed financial statements in the period in which they are recognized. Comprehensive loss is defined as the change in equity during a period from transactions and other events and circumstances from nonowner sources, including unrealized gains and losses on marketable securities. Comprehensive gains (losses) have been reflected in the condensed statements of operations and comprehensive loss for all periods presented.

Segment Reporting

Operating segments are identified as components of an enterprise about which separate discrete financial information is used in making decisions regarding resource allocation and assessing performance. To date, the Company has viewed its operations and managed its business as one segment operating primarily in the United States.

Net Loss Per Share

Basic net loss per share is calculated by dividing the net loss by the weighted average number of common shares outstanding during the period. Diluted net loss per share is computed by dividing the net loss by the weighted average number of common shares and common share equivalents outstanding for the period. Common stock equivalents are only included when their effect is dilutive. The Company's potentially dilutive securities have been excluded from the computation of diluted net loss per share in the periods in which they would be anti-dilutive. For all periods presented, there is no difference in the number of shares used to compute basic and diluted shares outstanding due to the Company's net loss position.

The following table sets forth the outstanding potentially dilutive securities that have been excluded in the calculation of diluted net loss per share because to do so would be anti-dilutive (in thousands):

	June 30,	
	2018	2017
Warrants to purchase common stock	13	150
Common stock options issued and outstanding	5,528	4,329
Shares issuable upon conversion of convertible note payable	2,846	2,465
ESPP shares pending issuance	6	4
Total	8,393	6,948

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2014-09, *Revenue from Contracts with Customers (Topic 606).* This guidance requires that an entity recognize revenue to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. For public companies, ASU No. 2014-09 is effective for annual reporting periods beginning after December 15, 2017 and interim periods within that reporting period. The Company adopted this guidance effective January 1, 2018, as required, utilizing the modified retrospective method. The change in accounting standard primarily affects the Company's recognition of collaboration revenue under the Collaboration Agreement. Under prior guidance, the Company recognized collaboration revenue under the Collaboration Agreement over the estimated time-based performance period for license-related payments and when costs were incurred for reimbursable costs. Under current guidance, the Company recognizes collaboration revenue and some related expenses in an amount proportional to the collaboration expenses incurred and the total estimated collaboration expenses. Another feature of the new standard is that recognition of variable consideration such as milestone payments may be accelerated. Under the modified retrospective adoption method, the Company recognized the retrospective cumulative effect of applying the standard for contracts that have remaining obligations as of the effective date, namely the Collaboration Agreement, to the opening balance of retained earnings (accumulated deficit) and will apply the standard to all new contracts initiated on or after the effective date. Adoption of this guidance resulted in a net increase in the accumulated deficit of $0.6 million. Additionally, adoption of this guidance had no impact on the Company's income tax expense, and the Company expects the impact on its tax provision to be immaterial due to the full valuation allowance. Under prior guidance, revenue recognized under the Collaboration Agreement would have been $17.1 million for the six months ended June 30, 2018, which is $1.4 million lower than the amount recognized under current guidance.

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842).* This guidance requires organizations that lease assets with lease terms of more than 12 months to recognize on the balance sheet the assets and liabilities for the rights and obligations created by those leases. The ASU also requires disclosures to give financial statement users information on the amount, timing and uncertainty of cash flows arising from leases, including qualitative and quantitative information. For public companies, ASU No. 2016-02 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. Early adoption is permitted. The Company is currently evaluating the impact of the pending adoption of ASU No. 2016-02 on its financial statements and related disclosures.

In June 2018, the FASB issued ASU No. 2018-07, *Compensation-Stock Compensation (Topic 718).* This guidance simplifies the accounting for nonemployee stock-based compensation and largely aligns such compensation with the accounting requirements for employee stock-based awards. For public companies, ASU No. 2018-07 is effective for fiscal years beginning after December 15, 2018, including interim periods within that fiscal year. Early adoption is permitted, but no earlier than an entity's adoption date of ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*. The Company early adopted this guidance effective June 30, 2018. The adoption of this guidance had an immaterial impact on the Company's financial statements and related disclosures.

3. Fair Value Measurements

The accounting guidance defines fair value, establishes a consistent framework for measuring fair value and expands disclosure for each major asset and liability category measured at fair value on either a recurring or nonrecurring basis. Fair value is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the accounting guidance establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1: Includes financial instruments for which quoted market prices for identical instruments are available in active markets.

Level 2: Includes financial instruments for which there are inputs other than quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets with insufficient volume or infrequent transaction (less active markets) or model-driven valuations in which significant inputs are observable or can be derived principally from, or corroborated by, observable market data.

Level 3: Includes financial instruments for which fair value is derived from valuation techniques in which one or more significant inputs are unobservable, including management's own assumptions.

Below is a summary of assets, including cash equivalents and marketable securities, measured at fair value as of June 30, 2018 and December 31, 2017 (in thousands):

		Fair Value Measurements Using		
	June 30, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Money market funds	$ 10,134	$ 10,134	$ —	$ —
Corporate debt securities	46,079	—	46,079	—
Total	$ 56,213	$ 10,134	$ 46,079	$ —

		Fair Value Measurements Using		
	December 31, 2017	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Money market funds	$ 12,218	$ 12,218	$ —	$ —
Corporate debt securities	61,774	—	61,774	—
Total	$ 73,992	$ 12,218	$ 61,774	$ —

The Company's marketable securities, consisting principally of debt securities, are classified as available-for-sale, are stated at fair value, and consist of Level 2 financial instruments in the fair value hierarchy. The Company determines the fair value of its debt security holdings based on pricing from a service provider. The service provider values the securities based on using market prices from a variety of industry-standard independent data providers. Such market prices may be quoted prices in active markets for identical assets (Level 1 inputs) or pricing determined using inputs other than quoted prices that are observable either directly or indirectly (Level 2 inputs), such as yield curve, volatility factors, credit spreads, default rates, loss severity, current market and contractual prices for the underlying instruments or debt, broker and dealer quotes, as well as other relevant economic measures.

4. Marketable Securities

The Company invests its excess cash in money market funds and debt instruments of financial institutions, corporations, government sponsored entities and municipalities. The following tables summarize the Company's marketable securities (in thousands):

As of June 30, 2018	Maturity (in years)	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
Corporate debt securities	1 or less	$ 46,120	$ 2	$ (43)	$ 46,079
Total		$ 46,120	$ 2	$ (43)	$ 46,079

As of December 31, 2017	Maturity (in years)	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
Corporate debt securities	1 or less	$ 58,851	$ —	$ (77)	$ 58,774
Total		$ 58,851	$ —	$ (77)	$ 58,774

5. Property and Equipment

Property and equipment consist of the following (in thousands):

	June 30, 2018	December 31, 2017
Furniture and fixtures	$ 334	$ 334
Computer equipment and office equipment	153	143
Leasehold improvements	147	152
	634	629
Less accumulated depreciation and amortization	(504)	(450)
Total	$ 130	$ 179

6. Note Payable

In July 2010, the Company issued to Pfizer Inc. (Pfizer) a $1.0 million promissory note (the Pfizer Note). The Pfizer Note bore interest at a rate of 7% per annum and was scheduled to mature on July 29, 2020. Interest was payable on a quarterly basis. On January 24, 2017, the Company voluntarily prepaid the entire balance of the outstanding principal and accrued and unpaid interest of the Pfizer Note in the amount of $1,004,861.

Prior to the prepayment of the Pfizer Note, the Company recorded the Pfizer Note on the balance sheet at face value. Based on borrowing rates available to the Company for loans with similar terms, the Company believed that the fair value of the Pfizer Note approximated its carrying value. The fair value measurement was categorized within Level 3 of the fair value hierarchy.

On February 15, 2017, the Company issued a convertible promissory note (the Novartis Note) in the principal amount of $15.0 million, pursuant to the Investment Agreement. The Novartis Note bears interest on the unpaid principal balance at a rate of 6% per annum and has a scheduled maturity date of December 31, 2019. The Company may prepay or convert all or part of the Novartis Note into shares of the Company's common stock, at its option, until December 31, 2019. Novartis has the option to convert all or part of the Novartis Note into shares of the Company's common stock upon a change in control of the Company or termination of the Collaboration Agreement by Novartis pursuant to certain provisions. If converted, the principal and accrued interest under the Novartis Note will convert into the Company's common stock at a conversion price equal to 120% of the 20-day trailing average closing price per share of the common stock immediately prior to the conversion date. In the event the aggregate number of shares of common stock issued upon the conversion would exceed the lesser of 19.0% of the Company's outstanding shares on a fully-diluted basis (i) at the inception of the Investment Agreement or (ii) on the conversion date, then only the lesser amount shall convert into

shares of common stock and Novartis shall be repaid in cash for any remaining principal and unpaid interest after such conversion. Upon the occurrence of certain events of default, the Novartis Note requires the Company to repay the principal balance of the Novartis Note and any unpaid accrued interest. The ability to borrow and repay the debt at a discount using shares of the Company's common stock was deemed to be additional, foregone revenue attributable to the Collaboration Agreement, which the Company imputed and recorded as both a receivable from Novartis and a liability (deferred revenue) of $2.5 million at the inception of the Collaboration Agreement and the Investment Agreement. On February 15, 2017, the Company recorded the $15.0 million proceeds from the issuance of the Novartis Note as a convertible note payable in the amount of $12.5 million and a reduction of the outstanding receivable from Novartis of $2.5 million. The convertible note payable, along with the related accrued interest, totaled $13.5 million as of June 30, 2018.

The Company elected to account for the Novartis Note under the fair value option. At June 30, 2018, the Company concluded that the fair value of the Novartis Note remained at $13.5 million due to its conversion features. The fair value measurement is categorized within Level 2 of the fair value hierarchy.

7. Stockholders' Equity

Warrants

In 2013, the Company issued warrants exercisable for 1,124,026 shares of Series B preferred stock, at an exercise price of $0.90 per share, to certain existing investors in conjunction with a private placement (the 2013 Warrants) and warrants exercisable for 111,112 shares of Series B preferred stock, at an exercise price of $0.90 per share, to Oxford Finance LLC and Silicon Valley Bank in conjunction with the Company's entry into a loan and security agreement (the Lender Warrants). Upon completion of the Company's initial public offering (IPO), the 2013 Warrants and the Lender Warrants became exercisable for 136,236 and 13,468 shares of common stock, respectively, at an exercise price of $7.43 per share. The 2013 Warrants expired on May 30, 2018, and the Lender Warrants will expire on July 3, 2023.

Stock Options

The following table summarizes the Company's stock option activity under all stock option plans for the six months ended June 30, 2018 (options in thousands):

	Total Options	Weighted-Average Exercise Price
Balance at December 31, 2017	4,826	$ 5.05
Granted	901	5.14
Exercised	(95)	1.09
Forfeited/cancelled/expired	(104)	4.44
Balance at June 30, 2018	5,528	$ 5.15

Stock-Based Compensation

The Company recorded stock-based compensation of $0.9 million and $0.8 million for the three months ended June 30, 2018 and 2017, respectively, and $1.9 million and $2.1 million for the six months ended June 30, 2018 and 2017, respectively.

Common Stock Reserved for Future Issuance

The following shares of common stock were reserved for future issuance at June 30, 2018 (in thousands):

Warrants to purchase common stock	13
Common stock options issued and outstanding	5,528
Common stock authorized for future option grants	818
Common stock authorized for the ESPP	516
Shares issuable upon conversion of convertible note payable	2,846
Total	9,721

8. Collaboration and License Agreements

In December 2016, the Company entered into the Collaboration Agreement with Novartis, pursuant to which the Company granted Novartis an exclusive option to collaborate with the Company to develop products containing emricasan. Pursuant to the Collaboration Agreement, the Company received a non-refundable upfront payment of $50.0 million from Novartis.

In May 2017, Novartis exercised its option under the Collaboration Agreement. In July 2017, the Company received a $7.0 million option exercise payment, at which time the license under the Collaboration Agreement became effective (the License Effective Date). Under the Collaboration Agreement, the Company is eligible to receive up to an aggregate of $650.0 million in milestone payments over the term of the Collaboration Agreement, contingent on the achievement of certain development, regulatory and commercial milestones, as well as royalties or profit and loss sharing on future product sales in the United States, if any.

Pursuant to the Collaboration Agreement, the Company is responsible for completing its three ongoing Phase 2b trials. Novartis will generally pay 50% of the Company's Phase 2b and observational study costs pursuant to an agreed upon budget. Upon completion of the ongoing Phase 2b trials, Novartis will assume 100% of the observational study costs. Novartis will assume full responsibility for emricasan's Phase 3 development and all combination product development.

Unless terminated earlier, the Collaboration Agreement will remain in effect on a product-by-product and country-by-country basis until Novartis' royalty obligations expire. Novartis has certain termination rights in the event of a mandated clinical trial hold for any product containing emricasan as its sole active ingredient. Additionally, Novartis has the right to terminate the Collaboration Agreement without cause upon 180 days prior written notice to the Company. In such event, the license granted to Novartis will be terminated and revert to the Company. In the event Novartis terminates the Collaboration Agreement due to the Company's uncured material breach or insolvency, the license granted to Novartis pursuant to the Collaboration Agreement will become irrevocable, and Novartis will be required to continue to make all milestone and royalty payments otherwise due to the Company under the Collaboration Agreement, provided that if the Company materially breaches the Collaboration Agreement such that the rights licensed to Novartis or the commercial prospects of the emricasan products are seriously impaired, the milestone and royalty payments will be reduced by 50%.

Concurrent with entry into the Collaboration Agreement, the Company entered into the Investment Agreement with Novartis whereby the Company is able to borrow up to $15.0 million at a rate of 6% per annum, under one or two notes, which will mature on December 31, 2019. The Company may elect at its sole discretion to convert all or part of the outstanding principal and accrued interest into fully paid shares of common stock, at 120% of the 20-day trailing average closing price per share of the common stock immediately prior to the conversion date. Novartis has the option to convert all or part of the note(s) into shares of the Company's common stock upon a change in control of the Company or termination of the Collaboration Agreement by Novartis pursuant to certain provisions. In the event the conversion of the notes would exceed the lesser of 19.0% of the Company's outstanding shares on a fully-diluted basis (i) at the inception of the Investment Agreement or (ii) on the conversion date, then only the lesser amount shall convert into shares of common stock and Novartis shall be repaid in cash for any remaining principal and unpaid interest after such conversion. On February 15, 2017, the Company issued the Novartis Note in the principal amount of $15.0 million pursuant to the Investment Agreement.

9. Commitments

In February 2014, the Company entered into a noncancelable operating lease agreement (the Lease) for certain office space with a lease term from July 2014 through December 2019 and a renewal option for an additional five years. In May 2015, the Company entered into a first amendment to the Lease (the First Lease Amendment) for additional office space starting in September 2015 through September 2020. The First Lease Amendment also extended the term of the Lease to September 2020. The monthly base rent under the Lease and the First Lease Amendment increases approximately 3% annually from approximately $33,000 in 2015 to approximately $39,000 in 2020. Future minimum payments under this noncancelable operating lease total $1.0 million at June 30, 2018.

Rent expense was $0.1 million for each of the three-month periods ended June 30, 2018 and 2017 and $0.2 million for each of the six-month periods ended June 30, 2018 and 2017.

In July 2010, the Company entered into a stock purchase agreement with Pfizer, pursuant to which the Company acquired all of the outstanding stock of Idun Pharmaceuticals, Inc., which was subsequently spun off to the Company's stockholders in January 2013. Under the stock purchase agreement, the Company may be required to make payments to Pfizer totaling $18.0 million upon the achievement of specified regulatory milestones.

10. Subsequent Events

On August 2, 2018, the Company entered into an At Market Issuance Sales Agreement with Stifel, Nicolaus & Company, Incorporated (Stifel), pursuant to which the Company may sell from time to time, at its option, up to an aggregate of $35.0 million of shares of common stock through Stifel, as sales agent. As of the filing date of this Form 10-Q, there have been no shares sold under this agreement.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis and the unaudited interim condensed financial statements included in this quarterly report on Form 10-Q should be read in conjunction with the financial statements and notes thereto for the year ended December 31, 2017 and the related Management's Discussion and Analysis of Financial Condition and Results of Operations, both of which are contained in our annual report on Form 10-K filed with the Securities and Exchange Commission, or SEC, on March 8, 2018.

Forward-Looking Statements

This quarterly report on Form 10-Q contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements other than statements of historical facts contained in this quarterly report, including statements regarding our future results of operations and financial position, business strategy, prospective products, product approvals, research and development costs, timing and likelihood of success, plans and objectives of management for future operations and future results of anticipated products, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "expect," "plan," "anticipate," "could," "intend," "target," "project," "contemplate," "believe," "estimate," "predict," "potential" or "continue" or the negative of these terms or other similar expressions. The forward-looking statements in this quarterly report are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this quarterly report and are subject to a number of risks, uncertainties and assumptions, including those described in Part II, Item 1A, "Risk Factors." The events and circumstances reflected in our forward-looking statements may not be achieved or occur, and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise.

Overview

We are a biotechnology company focused on the development and commercialization of novel medicines to treat liver disease. We are developing emricasan, a first-in-class, orally active pan-caspase protease inhibitor, for the treatment of patients with chronic liver disease. Emricasan is designed to reduce the activities of human caspases, which are enzymes that mediate inflammation and apoptosis. We believe that by reducing the activity of these enzymes, caspase inhibitors have the potential to interrupt the progression of a variety of diseases.

We plan to continue advancing toward registration of emricasan for patients with fibrosis or cirrhosis due to nonalcoholic steatohepatitis, or NASH. Our current clinical program for emricasan includes the following randomized, double-blind, placebo-controlled Phase 2b clinical trials:

- *Phase 2b ENCORE-PH (Portal Hypertension) Clinical Trial*: In November 2016, we initiated a clinical trial to evaluate the effect of emricasan in approximately 240 compensated or early decompensated NASH cirrhosis patients with severe portal hypertension. Top-line results are expected in the fourth quarter of 2018. In addition, this trial has a 24-week treatment extension that is intended to further evaluate clinical outcomes.
- *Phase 2b ENCORE-NF (NASH Fibrosis) Clinical Trial*: In January 2016, we initiated a clinical trial to evaluate emricasan in approximately 330 patients with liver fibrosis resulting from NASH. Top-line results are expected in the first half of 2019.
- *Phase 2b ENCORE-LF (Liver Function) Clinical Trial*: In May 2017, we initiated a clinical trial to evaluate emricasan in approximately 210 patients with decompensated NASH cirrhosis. Top-line results are expected in the second half of 2019.

In April 2018, we announced top-line results from our exploratory Phase 2b POLT-HCV-SVR proof-of-concept clinical trial of emricasan in post-orthotopic liver transplant, or POLT, recipients with reestablished liver fibrosis post-transplant as a result of recurrent hepatitis C virus, or HCV, infection who have successfully achieved a sustained viral response, or SVR, following HCV antiviral therapy, or POLT-HCV-SVR patients, with residual fibrosis or cirrhosis. Although the trial did not meet its primary endpoint in the heterogeneous overall trial population, emricasan provided evidence of an anti-fibrotic treatment effect in the subgroup of patients with advanced fibrosis and early cirrhosis.

In February 2018, we initiated a non-treatment observational study pursuant to which subjects from the four trials above will be followed for an up to three-year safety follow-up.

In May 2017, Novartis Pharma AG, or Novartis, exercised its option under the Option, Collaboration and License Agreement, or the Collaboration Agreement, we entered into with Novartis in December 2016. Pursuant to such exercise, we granted Novartis an exclusive, worldwide license to our intellectual property rights relating to emricasan to collaborate with us for the global development and commercialization of products containing emricasan either as a single active ingredient or in combination with other Novartis compounds for liver cirrhosis or liver fibrosis for the treatment, diagnosis and prevention of disease in all indications in humans. The license became effective upon our receipt of a $7.0 million option exercise payment in July 2017.

Pursuant to the Collaboration Agreement, we are responsible for completing the three ENCORE trials described above. We share the costs of the ENCORE trials equally with Novartis. In addition, until the completion of the ENCORE trials, we will equally share the costs of the non-treatment observational study. After the completion of the ENCORE trials, Novartis will assume 100% of the observational study costs. Novartis is responsible for 100% of certain expenses for required registration-supportive nonclinical activities. Novartis is also responsible for the development of emricasan beyond the ENCORE trials and the observational study described above, including the Phase 3 development of emricasan single agent products and all development for emricasan combination products, and Novartis has agreed to use commercially reasonable efforts to develop and commercialize emricasan products. A joint steering committee comprised of representatives from our company and Novartis oversees the collaboration, development and commercialization of emricasan products.

Under the Collaboration Agreement, Novartis paid us an upfront payment of $50.0 million and the option exercise payment of $7.0 million. In addition, we are eligible to receive up to an aggregate of $650.0 million in milestone payments, as well as royalties.

We also plan to expand our development pipeline by internally developing new preclinical product candidates leveraging our expertise with caspase inhibition and/or by in-licensing or acquiring preclinical or clinical product candidates consistent with our product development and regulatory expertise. We will continue to evaluate the potential of IDN-7314 as a product candidate as a component of our pipeline expansion plans. In addition to liver disease, we may pursue the development of product candidates in other disease areas.

Since our inception, our primary activities have been organizational activities, including recruiting personnel, conducting research and development, including clinical trials, and raising capital. We have no products approved for sale, and we have not generated any revenues from product sales to date. We have funded our operations since inception primarily through sales of equity securities and convertible promissory notes and payments made under the Collaboration Agreement, and we have incurred significant operating losses since our inception. We have never been profitable and have incurred net losses of $17.4 million and $29.7 million for the years ended December 31, 2017 and 2016, respectively, and $9.5 million for the six months ended June 30, 2018. As of June 30, 2018, we had an accumulated deficit of $178.1 million.

We expect to continue to incur significant operating losses and negative cash flows from operating activities for the foreseeable future as we continue the clinical development of emricasan and seek regulatory approval for and, if approved, pursue commercialization of emricasan. In May 2017, we completed a public offering of 5,980,000 shares of our common stock at a public offering price of $5.50 per share. We received net proceeds of $30.6 million, after deducting underwriting discounts and commissions and offering-related transaction costs. Immediately following the offering, we used $11.2 million of the net proceeds to repurchase and retire 2,166,836 shares of our common stock from funds affiliated with Advent Private Equity, or Advent, at a price of $5.17 per share.

As of June 30, 2018, we had cash, cash equivalents and marketable securities of $57.7 million. Although it is difficult to predict future liquidity requirements, we believe that our existing cash, cash equivalents and marketable securities will be sufficient to fund our operations for at least the next 12 months from the date of the filing of this Form 10-Q. We will need to raise additional capital to fund further operations, including the development of internally developed and/or in-licensed product candidates other than emricasan or the co-commercialization of emricasan with Novartis. We may obtain additional financing in the future through the issuance of our common stock in future public offerings, through other equity or debt financings or through collaborations or partnerships with other companies.

Successful transition to profitability is dependent upon achieving a level of revenues adequate to support our cost structure. We cannot assure you that we will ever be profitable or generate sustained positive cash flow from operating activities and, unless and until we do, we will need to raise substantial additional capital through equity or debt financings or through collaborations or partnerships with other companies. We may not be able to raise additional capital on terms acceptable to us, or at all, and any failure to raise capital as and when needed could have a material adverse effect on our results of operations, financial condition and our ability to execute on our business plan.

JOBS Act

In April 2012, the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, was signed into law. The JOBS Act contains provisions that, among other things, reduce certain reporting requirements for an "emerging growth company." As an "emerging growth company," we are electing not to take advantage of the extended transition period afforded by the JOBS Act for the implementation of new or revised accounting standards, and as a result, we will comply with new or revised accounting standards on the relevant dates on which adoption of such standards is required for non-emerging growth companies. Section 107 of the JOBS Act provides that our decision not to take advantage of the extended transition period is irrevocable. In addition, we are in the process of evaluating the benefits of relying on the other exemptions and reduced reporting requirements provided by the JOBS Act. Subject to certain conditions set forth in the JOBS Act, if as an "emerging growth company" we choose to rely on such exemptions, we may not be required to, among other things, (i) provide an auditor's attestation report on our system of internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, (ii) provide all of the compensation disclosure that may be required of non-emerging growth public companies under the Dodd-Frank Wall Street Reform and Consumer Protection Act, (iii) comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements (auditor discussion and analysis) and (iv) disclose certain executive compensation-related items such as the correlation between executive compensation and performance and comparisons of the Chief Executive Officer's compensation to median employee compensation. These exemptions will apply for a period of five years following the completion of our initial public offering, or IPO, or until we no longer meet the requirements of being an "emerging growth company," whichever is earlier.

Financial Overview

Revenues

Our revenues to date have been generated primarily from the Collaboration Agreement with Novartis. Under the terms of the Collaboration Agreement, we received an upfront payment of $50.0 million. In May 2017, Novartis exercised its option, and we received a $7.0 million option exercise payment in July 2017. We are eligible to receive up to $650.0 million in additional payments for development, regulatory and commercial sales milestones, as well as royalties or profit and loss sharing on future product sales in the United States, if any.

We currently have no products approved for sale, and we have not generated any revenues from product sales to date. We have not submitted any product candidate for regulatory approval. If we fail to achieve clinical success in the development of emricasan in a timely manner and/or obtain regulatory approval for this product candidate, or to successfully develop other product candidates, our ability to generate future revenues would be materially adversely affected.

Research and Development Expenses

The majority of our operating expenses to date have been incurred in research and development activities. Starting in late 2011, research and development expenses have been focused on the development of emricasan. Since acquiring emricasan in 2010, we have incurred $130.3 million of research and development expenses in the development of emricasan through June 30, 2018. Our business model is currently focused on the development of emricasan in various liver diseases and is dependent upon our continuing to conduct research and a significant amount of clinical development. Our research and development expenses consist primarily of:

- expenses incurred under agreements with contract research organizations, or CROs, investigative sites and consultants that conduct our clinical trials and our preclinical studies;
- employee-related expenses, which include salaries and benefits;
- the cost of finalizing our chemistry, manufacturing and controls, or CMC, capabilities and providing clinical trial materials; and
- costs associated with other research activities and regulatory approvals.

Research and development costs are expensed as incurred.

At this time, due to the inherently unpredictable nature of preclinical and clinical development, we are unable to estimate with any certainty the costs we will incur in the continued development of emricasan. Clinical development timelines, the probability of success and development costs can differ materially from expectations.

The costs of clinical trials may vary significantly over the life of a project owing to factors that include but are not limited to the following:

- per patient trial costs;
- the number of patients that participate in the clinical trials;
- the number of sites included in the clinical trials;
- the countries in which the clinical trials are conducted;
- the length of time required to enroll eligible patients;
- the number of doses that patients receive;
- the drop-out or discontinuation rates of patients;
- potential additional safety monitoring or other studies requested by regulatory agencies;
- the duration of patient follow-up; and
- the efficacy and safety profile of the product candidate.

We are currently focused on advancing emricasan in multiple indications, and our future research and development expenses will depend on its clinical success. In addition, we cannot forecast with any degree of certainty to what extent Novartis will develop and commercialize emricasan under the Collaboration Agreement.

Research and development expenditures will continue to be significant as we continue clinical development of emricasan over at least the next several years. We expect to incur significant development costs as we conduct our ongoing Phase 2b trials of emricasan and develop product candidates other than emricasan.

We do not expect emricasan to be commercially available, if at all, for at least the next several years.

General and Administrative Expenses

General and administrative expenses consist principally of salaries and related costs for personnel in executive, finance, business development and administrative functions. Other general and administrative expenses include costs related to being a public company, as well as insurance, facilities, travel, patent filing and maintenance, legal and consulting expenses.

If we exercise our option to co-commercialize emricasan pursuant to the Collaboration Agreement, we may incur expenses associated with activities related to commercializing emricasan. Some expenses may be incurred prior to receiving regulatory approval of emricasan. We do not expect to receive any such regulatory approval for at least the next several years.

Interest Income

Interest income consists primarily of interest income earned on our cash, cash equivalents and marketable securities.

Interest Expense

Interest expense consists of accrued interest on our $15.0 million convertible promissory note payable to Novartis, or the Novartis Note, which was issued in February 2017, and coupon interest on our $1.0 million promissory note payable to Pfizer Inc., or the Pfizer Note, which was voluntarily prepaid in January 2017.

Other Income (Expense)

Other income (expense) includes non-operating transactions such as those caused by currency fluctuations between transaction dates and settlement dates and the conversion of account balances held in foreign currencies to U.S. dollars.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of financial condition and results of operations is based on our condensed financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenues and expenses during the reporting periods. These items are monitored and analyzed by us for changes in facts and circumstances, and material changes in these estimates could occur in the future. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Changes in estimates are reflected in reported results for the period in which they become known. Actual results may differ materially from these estimates under different assumptions or conditions.

There were no significant changes during the six months ended June 30, 2018 to the critical accounting policies described in "Item 7 – Management's Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies and Significant Judgments and Estimates" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2017 filed with the SEC on March 8, 2018, other than the critical accounting policy below, which relates to the adoption of a new revenue recognition standard.

Revenue Recognition

Under the relevant accounting literature, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. We perform the following five steps in order to determine revenue recognition for contracts: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when, or as, we satisfy a performance obligation.

At contract inception, we identify the performance obligations in the contract by assessing whether the goods or services promised within each contract are distinct. Revenue is then recognized for the amount of the transaction price that is allocated to the respective performance obligation when, or as, the performance obligation is satisfied.

In a contract with multiple performance obligations, we must develop estimates and assumptions that require judgment to determine the underlying stand-alone selling price for each performance obligation, which determines how the transaction price is allocated among the performance obligations. The estimation of the stand-alone selling price(s) may include estimates regarding forecasted revenues or costs, development timelines, discount rates, and probabilities of technical and regulatory success. We evaluate each performance obligation to determine if it can be satisfied at a point in time or over time. Any change made to estimated progress towards completion of a performance obligation and, therefore, revenue recognized will be recorded as a change in estimate. In addition, variable consideration must be evaluated to determine if it is constrained and, therefore, excluded from the transaction price.

If a license to our intellectual property is determined to be distinct from the other performance obligations identified in a contract, we recognize revenues from the transaction price allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are bundled with other promises, we utilize judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from the allocated transaction price. We evaluate the measure of progress at each reporting period and, if necessary, adjust the measure of performance and related revenue or expense recognition as a change in estimate.

At the inception of each arrangement that includes milestone payments, we evaluate whether the milestones are considered probable of being reached. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within our or a collaboration partner's control, such as regulatory approvals, are generally not considered probable of being achieved until those approvals are received. At the end of each reporting period, we re-evaluate the probability of achievement of milestones that are within our or a collaboration partner's control, such as operational developmental milestones and any related constraint, and, if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which will affect collaboration revenues and earnings in the period of adjustment. Revisions to our estimate of the transaction price may also result in negative collaboration revenues and earnings in the period of adjustment.

For arrangements that include sales-based royalties, including commercial milestone payments based on the level of sales, and a license is deemed to be the predominant item to which the royalties relate, we will recognize revenue at the later of (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied, or partially satisfied. To date, we have not recognized any royalty revenue from collaborative arrangements.

In December 2016, we entered into the Collaboration Agreement and an Investment Agreement, the Investment Agreement, with Novartis. We concluded that there were two significant performance obligations under the Collaboration Agreement: the license and the research and development services, but that the license is not distinct from the research and development services as Novartis cannot obtain value from the license without the research and development services, which we are uniquely able to perform.

We concluded that progress towards completion of the performance obligations related to the Collaboration Agreement is best measured in an amount proportional to the collaboration expenses incurred and the total estimated collaboration expenses. We periodically review and update the estimated collaboration expenses, when appropriate, which adjusts the percentage of revenue that is recognized for the period. While such changes to our estimates have no impact on our reported cash flows, the amount of revenue recorded in the period could be materially impacted. The transaction price of the Collaboration Agreement consists of the upfront payment, option exercise fee, deemed revenue from the premium paid by Novartis under the Investment Agreement and reimbursable research and development costs, net of certain expenses directly related to execution of the agreement.

Potential future payments for variable consideration, such as clinical, regulatory or commercial milestones, will be recognized when it is probable that, if recorded, a significant reversal will not take place. Potential future royalty payments will be recorded as revenue when the associated sales occur.

Results of Operations

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

Total Revenues

Total revenues were $8.8 million for the three months ended June 30, 2018, as compared to $10.0 million for the same period in 2017. The decrease of $1.2 million was primarily due to lower research and development expenses resulting in corresponding lower revenues related to the Collaboration Agreement, partially offset by the effect of our adoption of the new revenue recognition standard described above.

Under prior guidance, we recognized collaboration revenue under the Collaboration Agreement over the estimated time-based performance period for license-related payments and when costs were incurred for reimbursable costs. Under the new revenue recognition standard, which we adopted on January 1, 2018, we recognize collaboration revenue and some related expenses in an amount proportional to the collaboration expenses incurred and the total estimated collaboration expenses. We periodically review and update the estimated collaboration expenses, when appropriate, which adjusts the percentage of revenue that is recognized for the period. Such changes could materially impact the amount of revenue recorded in the period.

Research and Development Expenses

Research and development expenses were $10.7 million for the three months ended June 30, 2018, as compared to $13.2 million for the same period in 2017. The decrease of $2.5 million was primarily due to lower spending related to our ENCORE-NF and ENCORE-PH clinical trials and manufacturing activities, partially offset by higher spending related to our ENCORE-LF clinical trial and new product candidate development.

General and Administrative Expenses

General and administrative expenses were $2.6 million for the three months ended June 30, 2018, as compared to $2.2 million for the same period in 2017. The increase of $0.4 million was primarily due to higher personnel costs.

Changes in components of Other Income (Expense) were as follows:

Interest Income

Interest income was $244,000 for the three months ended June 30, 2018, as compared to $218,000 for the same period in 2017. Interest income consisted of interest earned on our cash, cash equivalents and marketable securities and fluctuates based on changes in investment balances and interest rates.

Interest Expense

Interest expense was $187,000 for each of the three-month periods ended June 30, 2018 and 2017 and consisted of interest related to the Novartis Note, which was issued in February 2017.

Other Income (Expense)

Other income was $3,000 for the three months ended June 30, 2018, as compared to other expense of $44,000 for the same period in 2017. Other income (expense) represents non-operating transactions such as those caused by currency fluctuations between transaction dates and settlement dates.

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

Total Revenues

Total revenues were $18.5 million for the six months ended June 30, 2018, as compared to $17.0 million for the same period in 2017. The increase of $1.5 million was primarily due to higher research and development expenses resulting in corresponding higher revenues related to the Collaboration Agreement and the effect of our adoption of the new revenue recognition standard described above.

Research and Development Expenses

Research and development expenses were $22.8 million for the six months ended June 30, 2018, as compared to $21.1 million for the same period in 2017. The increase of $1.7 million was primarily due to higher spending related to our ENCORE-LF and ENCORE-PH clinical trials and new product candidate development, partially offset by lower spending related to our ENCORE-NF clinical trial.

General and Administrative Expenses

General and administrative expenses were $5.3 million for the six months ended June 30, 2018, as compared to $5.0 million for the same period in 2017. The increase of $0.3 million was primarily due to higher personnel costs.

Changes in components of Other Income (Expense) were as follows:

Interest Income

Interest income was $477,000 for the six months ended June 30, 2018, as compared to $389,000 for the same period in 2017. Interest income consisted of interest earned on our cash, cash equivalents and marketable securities and fluctuates based on changes in investment balances and interest rates.

Interest Expense

Interest expense was $372,000 for the six months ended June 30, 2018, as compared to $284,000 for the same period in 2017. The increase was primarily due to higher interest expense related to the Novartis Note, which was issued in February 2017.

Other Income (Expense)

Other expense was $6,000 for the six months ended June 30, 2018, as compared to $50,000 for the same period in 2017. Other income (expense) represents non-operating transactions such as those caused by currency fluctuations between transaction dates and settlement dates.

Liquidity and Capital Resources

Since inception, we have incurred losses and negative cash flows from operating activities, except for the year ended December 31, 2016, where we had positive net cash flows from operating activities due to the upfront payment related to the Collaboration Agreement with Novartis. As of June 30, 2018, we had an accumulated deficit of $178.1 million. We anticipate that we will continue to incur net losses for the foreseeable future as we continue the development and potential commercialization of emricasan.

Prior to our IPO in July 2013, we funded our operations primarily through private placements of equity and convertible debt securities. In July 2013, we completed our IPO of 6,000,000 shares of common stock at an offering price of $11.00 per share. We received net proceeds of $58.6 million, after deducting underwriting discounts and commissions and offering-related transaction costs.

In August 2014, we entered into an At Market Issuance Sales Agreement, or the 2014 Sales Agreement, with MLV & Co. LLC, or MLV, pursuant to which we could sell from time to time, at our option, up to an aggregate of $50.0 million of shares of our common stock through MLV, as sales agent. We terminated the 2014 Sales Agreement in December 2016. We sold 6,305,526 shares of our common stock pursuant to the 2014 Sales Agreement at a weighted average price per share of $2.35 and received net proceeds of $14.2 million, after deducting offering-related transaction costs and commissions.

In April 2015, we completed a public offering of 4,025,000 shares of our common stock at a public offering price of $5.75 per share. We received net proceeds of $21.4 million, after deducting underwriting discounts and commissions and offering-related transaction costs. In May 2017, we completed a public offering of 5,980,000 shares of our common stock at a public offering price of $5.50 per share. We received net proceeds of $30.6 million, after deducting underwriting discounts and commissions and offering-related transaction costs. Immediately following the offering, we used $11.2 million of the net proceeds to repurchase and retire 2,166,836 shares of our common stock from Advent at a price of $5.17 per share, which is equal to the net proceeds per share we received from the offering, before expenses, pursuant to a stock purchase agreement we entered into with Advent in May 2017.

In December 2016, we entered into the Collaboration Agreement with Novartis pursuant to which we granted Novartis an exclusive option to collaborate with us for the global development and commercialization of emricasan. Under the Collaboration Agreement, Novartis paid us an upfront payment of $50.0 million. In May 2017, Novartis exercised its option, and we received a $7.0 million option exercise payment in July 2017. Concurrent with the entry into the Collaboration Agreement, we entered into the Investment Agreement, whereby we agreed to sell and Novartis agreed to purchase, convertible promissory notes, in one or two closings, for an aggregate principal amount of up to $15.0 million. In February 2017, we issued the Novartis Note in the principal amount of $15.0 million. The maturity date of the Novartis Note is December 31, 2019. The Novartis Note bears interest on the unpaid principal balance at a rate of 6% per annum. We may prepay or convert the Novartis Note into shares of our common stock, at our option, until December 31, 2019. Novartis may convert the Novartis Note into shares of our common stock upon a change of control of our company or termination of the Collaboration Agreement by Novartis pursuant to certain provisions. If converted, the principal and accrued interest under the Novartis Note will convert into shares of our common stock at a conversion price equal to 120% of the 20-day trailing average closing price per share of the common stock immediately prior to the conversion date. Upon the occurrence of certain events of default, the Novartis Note requires us to repay the principal balance and any unpaid accrued interest.

On August 2, 2018, we entered into an At Market Issuance Sales Agreement, or the 2018 Sales Agreement, with Stifel, Nicolaus & Company, Incorporated, or Stifel, pursuant to which we may sell from time to time, at our option, up to an aggregate of $35.0 million of shares of our common stock through Stifel, as sales agent. Sales of our common stock made pursuant to the 2018 Sales Agreement, if any, will be made on the Nasdaq Global Market, or Nasdaq, under our Registration Statement on Form S-3 filed on August 17, 2017 by means of ordinary brokers' transactions at market prices. Additionally, under the terms of the 2018 Sales Agreement, we may also sell shares of our common stock through Stifel, on Nasdaq or otherwise, at negotiated prices or at prices related to the prevailing market price. We will pay a commission rate equal to up to 3.0% of the gross sales price per share sold. The 2018 Sales Agreement will automatically terminate upon the sale of an aggregate of $35.0 million of shares of our common stock pursuant to the 2018 Sales Agreement. In addition, the 2018 Sales Agreement may be terminated by us or Stifel at any time upon ten days' notice to the other party, or by Stifel at any time in certain circumstances, including the occurrence of an event that would be reasonably likely to have a material adverse effect on our assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders' equity or results of operations. As of the date of the filing of this Form 10-Q, we have not sold any shares under the 2018 Sales Agreement.

At June 30, 2018, we had cash, cash equivalents and marketable securities of $57.7 million. We believe our existing cash, cash equivalents and marketable securities will be sufficient to fund our operations for at least the next 12 months from the date of the filing of this Form 10-Q. To fund further operations, we will need to raise additional capital. We plan to continue to fund losses from operations and capital funding needs through future equity and debt financing, as well as potential collaborations. 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. No assurances can be provided 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 make reductions in spending, extend payment terms with suppliers, liquidate assets where possible, and/or suspend or curtail planned programs. Any of these actions could materially harm our business, results of operations and future prospects.

The following table sets forth a summary of the net cash flow activity for each of the periods set forth below (in thousands):

	Six Months Ended June 30,	
	2018	2017
Net cash used in operating activities	$ (17,447)	$ (19,886)
Net cash provided by (used in) investing activities	12,853	(53,548)
Net cash provided by financing activities	154	31,116
Net decrease in cash and cash equivalents	$ (4,440)	$ (42,318)

Net cash used in operating activities was $17.4 million and $19.9 million for the six months ended June 30, 2018 and 2017, respectively. The primary use of cash was to fund our operations related to the development of emricasan.

Net cash provided by investing activities was $12.9 million for the six months ended June 30, 2018, which consisted primarily of proceeds from maturities of marketable securities, partially offset by cash used to purchase marketable securities. Net cash used in investing activities was $53.5 million for the six months ended June 30, 2017, which consisted primarily of cash used to purchase marketable securities, partially offset by proceeds from maturities of marketable securities.

Net cash provided by financing activities was $0.2 million for the six months ended June 30, 2018. Net cash provided by financing activities was $31.1 million for the six months ended June 30, 2017, which consisted primarily of net proceeds from our public offering in May 2017 and proceeds from the issuance of the Novartis Note in February 2017, partially offset by the repurchase of shares from Advent in May 2017 and the voluntary prepayment of the Pfizer Note in January 2017.

Contractual Obligations and Commitments

As of June 30, 2018, there have been no material changes outside the ordinary course of our business to the contractual obligations we reported in "Item 7 – Management's Discussion and Analysis of Financial Condition and Results of Operations – Contractual Obligations and Commitments" in our annual report on Form 10-K for the year ended December 31, 2017 filed with the SEC on March 8, 2018.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements (as defined by applicable regulations of the SEC) that are reasonably likely to have a current or future material effect on our financial condition, results of operations, liquidity, capital expenditures or capital resources.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

As of June 30, 2018, there have been no material changes in our market risk from that described in "Item 7A. Quantitative and Qualitative Disclosures About Market Risk" in our annual report on Form 10-K for the year ended December 31, 2017 filed with the Securities and Exchange Commission on March 8, 2018.

ITEM 4. CONTROLS AND PROCEDURES

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of 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, as of the end of the period covered by this quarterly report on Form 10-Q. Based on such evaluation, our principal executive officer and principal financial officer have concluded that, as of such date, our disclosure controls and procedures were effective.

Inherent Limitations of Disclosure Controls and Procedures and Internal Control Over Financial Reporting

Our management, including our principal executive officer and principal financial officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting during the quarter ended June 30, 2018, that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are currently not a party to any material legal proceedings.

ITEM 1A. RISK FACTORS

There have been no material changes to the risk factors included in "Item 1A. Risk Factors" in our annual report on Form 10-K for the year ended December 31, 2017 filed with the Securities and Exchange Commission on March 8, 2018, other than the risk factor below.

If Novartis terminates the Option, Collaboration and License Agreement, or the Collaboration Agreement, and we fail to obtain additional financing, we may be unable to complete the development and commercialization of emricasan.

Our operations have consumed substantial amounts of cash since inception. We expect to continue to spend substantial amounts to continue the clinical development of emricasan, including our ongoing clinical trials. We believe the payments under the Collaboration Agreement and our existing capital resources will fund our share of the development costs for emricasan. If Novartis terminates the Collaboration Agreement, we will require significant additional amounts in order to continue clinical development and, if approved, launch and commercialize emricasan. To date, our operations have been primarily funded through the proceeds from the issuance of our common and preferred stock, including the proceeds from our initial public offering, or IPO, completed in July 2013 and follow-on public offerings completed in April 2015 and May 2017, as well as sales of common stock under our prior At Market Issuance Sales Agreement with MLV & Co. LLC.

In August 2018, we entered into an At Market Issuance Sales Agreement, or the Sales Agreement, with Stifel, Nicolaus & Company, Incorporated, or Stifel, pursuant to which we may sell from time to time, at our option, up to an aggregate of $35.0 million of shares of our common stock through Stifel, as sales agent. Sales of our common stock made pursuant to the Sales Agreement, if any, will be made on the Nasdaq Global Market, or Nasdaq, under our Registration Statement on Form S-3 filed on August 17, 2017 by means of ordinary brokers' transactions at market prices. Additionally, under the terms of the Sales Agreement, we may also sell shares of our common stock through Stifel, on Nasdaq or otherwise, at negotiated prices or at prices related to the prevailing market price. We will pay a commission rate equal to up to 3.0% of the gross sales price per share sold. The Sales Agreement will automatically terminate upon the sale of an aggregate of $35.0 million of shares of our common stock pursuant to the Sales Agreement. In addition, the Sales Agreement may be terminated by us or Stifel at any time upon ten days' notice to the other party, or by Stifel at any time in certain circumstances, including the occurrence of an event that would be reasonably likely to have a material adverse effect on our assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders' equity or results of operations. As of the date of the filing of this Form 10-Q, we have not sold any shares under the Sales Agreement. There can be no assurance that Stifel will be successful in consummating sales under the Sales Agreement based on prevailing market conditions or in the quantities or at the prices that we deem appropriate.

We expect to fund our near-term operations primarily with the upfront payment of $50.0 million that we received from Novartis in December 2016 pursuant to the Collaboration Agreement, proceeds from the issuance of a convertible promissory note in the principal amount of $15.0 million, which we issued to Novartis in February 2017, and potential sale of common stock under the Sales Agreement.

We believe that our existing cash, cash equivalents and marketable securities will be sufficient to fund our operations for at least the next 12 months from the date of the filing of this Form 10-Q. However, changing circumstances may cause us to consume capital significantly faster than we currently anticipate, and we may need to spend more money than currently expected because of circumstances beyond our control. We will require additional capital for the development and commercialization of product candidates other than emricasan.

We may seek to obtain additional financing in the future through the issuance of our common stock under the Sales Agreement or in public offerings, through other equity or debt financings or through collaborations or partnerships with other companies. We cannot be certain that additional funding will be available on acceptable terms, or at all. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we may have to significantly delay, scale back or discontinue the development or commercialization of emricasan or other research and development initiatives.

Any of the above events could significantly harm our business, prospects, financial condition and results of operations and cause the price of our common stock to decline.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Unregistered Sales of Equity Securities

None.

Use of Proceeds

None.

Issuer Purchases of Equity Securities

None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

Entry into a Material Definitive Agreement

On August 2, 2018, we entered into an At Market Issuance Sales Agreement, or the Sales Agreement, with Stifel, Nicolaus & Company, Incorporated, or Stifel, pursuant to which we may sell from time to time, at our option, up to an aggregate of $35.0 million of shares of our common stock through Stifel, as sales agent. Sales of our common stock made pursuant to the Sales Agreement, if any, will be made on the Nasdaq Global Market, or Nasdaq, under our Registration Statement on Form S-3 filed on August 17, 2017 by means of ordinary brokers' transactions at market prices. Additionally, under the terms of the Sales Agreement, we may also sell shares of our common stock through Stifel, on Nasdaq or otherwise, at negotiated prices or at prices related to the prevailing market price. Stifel will use its commercially reasonable efforts consistent with its normal trading and sales practices to sell our common stock from time to time, based upon our instructions (including any price, time or size limits or other customary parameters or conditions we may impose). We cannot provide any assurances that we will issue any shares pursuant to the Sales Agreement. We will pay a commission rate equal to up to 3.0% of the gross sales price per share sold. We have also agreed to provide Stifel with customary indemnification and contribution rights.

The Sales Agreement will automatically terminate upon the sale of an aggregate of $35.0 million of shares of our common stock pursuant to the Sales Agreement. In addition, the Sales Agreement may be terminated by us or Stifel at any time upon ten days' notice to the other party, or by Stifel at any time in certain circumstances, including the occurrence of an event that would be reasonably likely to have a material adverse effect on our assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders' equity or results of operations.

The foregoing description of the Sales Agreement is not complete and is qualified in its entirety by reference to the Sales Agreement, a copy of which is filed as Exhibit 1.1 to this quarterly report on Form 10-Q and is incorporated herein by reference.

ITEM 6. EXHIBITS

A list of exhibits is set forth on the Exhibit Index immediately preceding the signature page of this quarterly report on Form 10-Q and is incorporated herein by reference.

EXHIBIT INDEX

Exhibit Number	Description
1.1	At Market Issuance Sales Agreement, dated August 2, 2018, between the Registrant and Stifel, Nicolaus & Company, Incorporated
3.1(1)	Amended and Restated Certificate of Incorporation
3.2(1)	Amended and Restated Bylaws
4.1(2)	Specimen Common Stock Certificate
4.2(3)	First Amended and Restated Investor Rights Agreement, dated February 9, 2011
4.3(3)	Form of Warrant issued to investors in the Registrant's 2013 bridge financing
4.4(2)	Form of Warrant issued to lenders under the Loan and Security Agreement, dated July 3, 2013, by and among the Registrant, Oxford Finance LLC, Silicon Valley Bank and the other lenders party thereto
5.1	Opinion of Latham & Watkins LLP
23.1	Consent of Latham & Watkins LLP (included in Exhibit 5.1)
31.1	Certification of Principal Executive Officer pursuant to Rules 13a-14 and 15d-14 promulgated pursuant to the Securities Exchange Act of 1934, as amended
31.2	Certification of Principal Financial Officer pursuant to Rules 13a-14 and 15d-14 promulgated pursuant to the Securities Exchange Act of 1934, as amended
32.1*	Certification of Principal Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2*	Certification of Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

(1) Incorporated by reference to the Registrant's Current Report on Form 8-K, filed with the SEC on August 1, 2013.
(2) Incorporated by reference to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (Registration No. 333-189305), filed with the SEC on July 8, 2013.
(3) Incorporated by reference to the Registrant's Registration Statement on Form S-1 (Registration No. 333- 189305), filed with the SEC on June 14, 2013.
* This certification is being furnished solely to accompany this quarterly report pursuant to 18 U.S.C. Section 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Registrant, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

SIGNATURES

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

CONATUS PHARMACEUTICALS INC.

Date: August 2, 2018

/s/ Steven J. Mento, Ph.D.
Steven J. Mento, Ph.D.
President and Chief Executive Officer
(principal executive officer)

Date: August 2, 2018

/s/ Keith W. Marshall, Ph.D.
Keith W. Marshall, Ph.D.
Executive Vice President, Chief Operating Officer and Chief Financial Officer
(principal financial officer)

Exhibit 1.1

CONATUS PHARMACEUTICALS INC.

Common Stock
(par value $0.0001 per share)

At Market Issuance Sales Agreement

August 2, 2018

Stifel, Nicolaus & Company, Incorporated
787 Seventh Avenue
New York, New York 10019
Ladies and Gentlemen:

Conatus Pharmaceuticals Inc., a Delaware corporation (the "Company"), confirms its agreement (this "Agreement") with Stifel, Nicolaus & Company, Incorporated ("Stifel"), as follows:

1. Issuance and Sale of Shares. The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell through Stifel, shares (the "Placement Shares") of the Company's common stock, par value $0.0001 per share (the "Common Stock"), *provided however,* that in no event shall the Company issue or sell through Stifel such number of Placement Shares that (a) exceeds the number of shares of Common Stock registered on the effective Registration Statement (as defined below) pursuant to which the offering is being made, or (b) exceeds the number of authorized but unissued shares of Common Stock (the lesser of (a) and (b), the "Maximum Amount"). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this Section 1 on the number of Placement Shares issued and sold under this Agreement shall be the sole responsibility of the Company and that Stifel shall have no obligation in connection with such compliance. The issuance and sale of Placement Shares through Stifel will be effected pursuant to the Registration Statement (as defined below), although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue any Placement Shares.

The Company has filed, in accordance with the provisions of the Securities Act of 1933, as amended, and the rules and regulations thereunder (the "Securities Act"), with the Securities and Exchange Commission (the "Commission"), a registration statement on Form S-3 (File No. 333-220014), including a prospectus relating to certain securities, including the Placement Shares, to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder (the "Exchange Act"). The Company will, if necessary, prepare a prospectus supplement to the prospectus included as part of such registration statement specifically relating to the Placement Shares (the "Prospectus Supplement"). The Company will furnish to Stifel, for use by Stifel, copies of the prospectus included as part of such registration statement, as supplemented, if at all, by the Prospectus Supplement, relating to the Placement Shares. Except where the context otherwise requires, such registration statement, including all documents filed as part

thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act or deemed to be a part of such registration statement pursuant to Rule 430B of the Securities Act, is herein called the "Registration Statement." The prospectus relating to the Placement Shares, including all documents incorporated or deemed incorporated therein by reference to the extent such information has not been superseded or modified in accordance with Rule 412 under the Securities Act (as qualified by Rule 430B(g) of the Securities Act), included in the Registration Statement, as it may be supplemented by the Prospectus Supplement, in the form in which such prospectus and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act, is herein called the "Prospectus." Any reference herein to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated or deemed incorporated by reference therein, and any reference herein to the terms "amend," "amendment" or "supplement" with respect to the Registration Statement or the Prospectus shall be deemed to refer to and include the filing after the execution hereof of any document deemed to be incorporated by reference (the "Incorporated Documents").

For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include the most recent copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval System, or if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, "EDGAR").

2. Placements. Each time that the Company wishes to issue and sell Placement Shares hereunder (each, a "Placement"), it will notify Stifel by email notice (or other method mutually agreed to in writing by the Parties) of the number of Placement Shares to be issued, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one day and any minimum price below which sales may not be made (a "Placement Notice"), the form of which is attached hereto as Schedule 1. The receipt of each such Placement Notice shall promptly be acknowledged by Stifel by email confirmation to the Company. The Placement Notice shall originate from any of the individuals from the Company set forth on Schedule 3 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from Stifel set forth on Schedule 3, as such Schedule 3 may be amended from time to time. Provided that the Company is otherwise in compliance with the terms of this Agreement, the Placement Notice shall be effective immediately upon receipt by Stifel unless and until (i) Stifel declines to accept the terms contained therein for any reason, in its sole discretion, within three (3) business days from the time the Placement Notice was received, (ii) the entire amount of the Placement Shares thereunder has been sold, (iii) the Company suspends or terminates the Placement Notice or (iv) this Agreement has been terminated under the provisions of Section 13. The gross sales price of any Placement Shares sold pursuant to this Agreement by Stifel acting pursuant to this Agreement shall be the market price prevailing at the time of sale for shares of the Company's Common Stock sold by Stifel on the Exchange (as defined below) or otherwise, at prices relating to prevailing market prices or at negotiated prices. The amount of any discount, commission or other compensation to be paid

by the Company to Stifel in connection with the sale of the Placement Shares shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor Stifel will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to Stifel and Stifel does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of Sections 2 or 3 of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3. Sale of Placement Shares by Stifel.

a. Subject to the terms and conditions of this Agreement, for the period specified in a Placement Notice, Stifel will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of such national securities exchange that the Company's Common Stock is listed on (the "Exchange"), to sell the Placement Shares up to the amount specified in, and otherwise in accordance with the terms of, such Placement Notice. Stifel will provide written confirmation to the Company no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the compensation payable by the Company to Stifel pursuant to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by Stifel (as set forth in Section 5(b)) from the gross proceeds that it receives from such sales. Subject to the terms of a Placement Notice, Stifel agrees that all sales of Placement Shares by Stifel will be made only by methods permitted by law and deemed to be an "at the market offering" as defined in Rule 415 of the Securities Act, including without limitation sales made directly on the Exchange, on any other existing trading market for the Common Stock or to or through a market maker. Subject to the terms of a Placement Notice, Stifel may also sell Placement Shares by any other method permitted by law, including but not limited to negotiated transactions, subject to the Company's prior written approval. "Trading Day" means any day on which Common Stock is purchased and sold on the Exchange.

b. During the term of this Agreement, neither Stifel nor any of its affiliates or subsidiaries shall engage in (i) any short sale of any security of the Company, (ii) any sale of any security of the Company that Stifel does not own or any sale which is consummated by the delivery of a security of the Company borrowed by, or for the account of, Stifel, or (iii) any market making, bidding, purchasing, stabilization or other trading activity with regard to the Common Stock, or attempting to induce another person to do any of the foregoing, if such activity would be prohibited under Regulation M or other anti-manipulation rules under the Securities Act. Neither Stifel nor any of its affiliates or subsidiaries shall engage in any proprietary trading or trading for Stifel's (or its affiliates' or subsidiaries') own account.

4. Suspension of Sales. The Company or Stifel may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by

any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party set forth on Schedule 3), suspend any sale of Placement Shares; *provided, however*, that such suspension shall not affect or impair any party's obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. Each of the parties agrees that no such notice under this Section 4 shall be effective against any other party unless it is made to one of the individuals named on Schedule 3 hereto and acknowledged in accordance with the prior sentence, as such Schedule may be amended from time to time.

5. Sale and Delivery to Stifel; Settlement.

a. Sale of Placement Shares. The Company acknowledges and agrees that (i) there can be no assurance that Stifel will be successful in selling Placement Shares, (ii) Stifel will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by Stifel to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares as required under this Agreement and (iii) Stifel shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement, except as otherwise agreed by Stifel and the Company.

b. Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the second (2nd) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a "Settlement Date"). The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the "Net Proceeds") will be equal to the aggregate sales price received by Stifel, after deduction for (i) Stifel's commission, discount or other compensation for such sales payable by the Company S epcu t rli se un ae n2 tf , t oa n d (ii) govenmental or self-regulatory organization in respect of such sales. Stifel shall notify the C
referenced in subsection (ii) of the pr
the Company engages Stifel as agent fo
meaning of Rule 100 of Regulation M
commercial efforts to agree to compens

c. Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting Stifel's or its designee's account (provided Stifel shall have given the Company written notice of such designee at least two Trading Days prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. On each Settlement Date, Stifel will deliver the related Net

Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date, then in addition to and in no way limiting the rights and obligations set forth in Section 11(a) hereto, it will (i) hold Stifel harmless against any loss, claim, damage, or reasonable, documented expense (including reasonable and documented legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to Stifel (without duplication) any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

d. Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate number of Placement Shares sold pursuant to this Agreement would exceed the lesser of (A) together with all sales of Placement Shares under this Agreement, the Maximum Amount, (B) the amount available for offer and sale under the currently effective Registration Statement and (C) the amount authorized from time to time to be issued and sold under this Agreement by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to Stifel in writing. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to this Agreement at a price lower than the minimum price authorized from time to time by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to Stifel in writing. Further, under no circumstances shall the Company cause or permit the aggregate offering amount of Placement Shares sold pursuant to this Agreement to exceed the Maximum Amount.

e. At each Applicable Time (as defined below), Settlement Date, and each date on which an Annual Report on Form 10-K or Quarterly Report on Form 10-Q, or any amendment therto, is filed by the Company in respect of any quarter in which sales of Placement Shares were made by or through Stifel under this Agreement or Placement Notice (each a "Company Periodic Report Date"), the Company shall be deemed to have affirmed each representation and warranty contained in this Agreement. Any obligation of Stifel to use its commercially reasonable efforts to sell the Placement Shares on behalf of the Company as agent shall be subject to the continuing accuracy of the representations and warranties of the Company herein, to the performance by the Company of its obligations hereunder and to the continuing satisfaction of the additional conditions specified in Section 10 of this Agreement.

f. If either party has reason to believe that the exemptive provisions set forth in Rule 101(c)(1) of Regulation M under the Exchange Act are not satisfied with respect to the Placement Shares, it shall promptly notify the other party and Stifel may, in its sole discretion, suspend sales of the Placement Shares under this Agreement and any Placement Notice until such date as it determines is reasonably necessary to ensure compliance with Regulation M and any other applicable legal or regulatory requirements.

6. Representations and Warranties of the Company. Except as disclosed in the Registration Statement or Prospectus (including the Incorporated Documents), the Company represents and warrants to, and agrees with Stifel that as of the date of this Agreement and as of each Applicable Time (as defined below), Settlement Date and Company Periodic Report Date, unless such representation, warranty or agreement specifies a different date or time:

a. Registration Statement and Prospectus. The Company and, assuming no act or omission on the part of Stifel that would make such statement untrue, the transactions contemplated by this Agreement meet the requirements for and comply with the conditions for the use of Form S-3 under the Securities Act. The Registration Statement has been filed with the Commission. The Prospectus will name Stifel as the agent in the section entitled "Plan of Distribution." No stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto has been issued under the Securities Act . The Company has not received, and has no notice of, any order of the Commission preventing or suspending the use of the Registration Statement, or threatening or instituting proceedings for that purpose. The Company has complied with each request (if any) from the Commission for additional information. The Registration Statement and the offer and sale of Placement Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said Rule. Any statutes, regulations, contracts or other documents that are required to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement have been so described or filed. Copies of the Registration Statement, the Prospectus, and any such amendments or supplements and all documents incorporated by reference therein that were filed with the Commission on or prior to the date of this Agreement have been delivered, or are available through EDGAR, to Stifel and its counsel. The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the distribution of the Placement Shares, will not distribute any offering material in connection with the offering or sale of the Placement Shares other than the Registration Statement and the Prospectus and any Issuer Free Writing Prospectus (as defined below) to which Stifel has consented, any such consent not to be unreasonably withheld, conditioned or delayed. The Common Stock is currently quoted on the Exchange. The Company has not, in the 12 months preceding the date hereof, received notice from the Exchange to the effect that the Company is not in compliance with the listing or maintenance requirements of the Exchange. The Company has no reason to believe that it will not in the foreseeable future continue to be in compliance with all such listing and maintenance requirements. A registration statement relating to the Common Stock on Form 8-A or other applicable form under the Exchange Act has become effective.

b. No Misstatement or Omission. The Registration Statement, and any amendments thereto, has become effective under the Securities Act, and the Prospectus, and any amendment or supplement thereto, on the date of such Prospectus or amendment or supplement, conformed and will conform in all material respects with the requirements of the Securities Act. At each Settlement Date and Company Periodic Reporting Date, the Registration Statement and the Prospectus, as of such date, will conform in all material respects with the requirements of the Securities Act. The Registration Statement, when it became effective, did not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus and any amendment and supplement thereto, on the date thereof and at each Applicable Time (defined below), Settlement Date and Company Periodic Reporting Date, did not or will not include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances

under which they were made, not misleading. The documents incorporated by reference in the Prospectus or any Prospectus Supplement did not, and any further documents filed and incorporated by reference therein will not, when filed with the Commission, contain an untrue statement of a material fact or omit to state a material fact required to be stated in such document or necessary to make the statements in such document, in light of the circumstances under which they were made, not misleading. The foregoing shall not apply to statements in, or omissions from, any such document made in reliance upon, and in conformity with, information furnished to the Company by Stifel specifically for use in the preparation thereof.

c. Conformity with Securities Act and Exchange Act. The Registration Statement, the Prospectus, any Issuer Free Writing Prospectus or any amendment or supplement thereto, and the Incorporated Documents, when such documents were or are filed with the Commission under the Securities Act or the Exchange Act or became or become effective under the Securities Act, as the case may be, conformed or will conform in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable.

d. Financial Information. The consolidated financial statements of the Company included or incorporated by reference in the Registration Statement and the Prospectus, together with the related notes and schedules, present fairly, in all material respects, the consolidated financial position of the Company and the Subsidiaries (as defined below) as of the dates indicated and the consolidated results of operations, cash flows and changes in stockholders' equity of the Company for the periods specified and have been prepared in compliance with the requirements of the Securities Act and Exchange Act, as applicable, and in conformity with generally accepted accounting principles in the United States ("GAAP") applied on a consistent basis (except for such adjustments to accounting standards and practices as are noted therein) during the periods involved; the other financial and statistical data with respect to the Company and the Subsidiaries contained or incorporated by reference in the Registration Statement and the Prospectus, are accurately and fairly presented in all material respects and prepared on a basis materially consistent with the financial statements and books and records of the Company; there are no financial statements (historical or pro forma) that are required to be included or incorporated by reference in the Registration Statement, or the Prospectus that are not included or incorporated by reference as required; the Company and the Subsidiaries do not have any material liabilities or obligations, direct or contingent (including any off balance sheet obligations), not described in the Registration Statement, and the Prospectus which are required to be described in the Registration Statement or Prospectus; and all disclosures contained or incorporated by reference in the Registration Statement and the Prospectus, if any, regarding "non-GAAP financial measures" (as such term is defined by the rules and regulations of the Commission) comply in all material respects with Regulation G of the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable.

e. Conformity with EDGAR Filing. The Prospectus delivered to Stifel for use in connection with the sale of the Placement Shares pursuant to this Agreement will be identical to the versions of the Prospectus created to be transmitted to the Commission for filing via EDGAR, except to the extent permitted by Regulation S-T.

f. Organization. The Company and any subsidiary that is a significant subsidiary (as such term is defined in Rule 1-02 of Regulation S-X promulgated by the Commission) (each, a "Subsidiary", and collectively, the "Subsidiaries"), are, and will be, duly organized, validly existing as a corporation and in good standing under the laws of their respective jurisdictions of organization. The Company and the Subsidiaries are, and will be, duly licensed or qualified as a foreign corporation for transaction of business and in good standing under the laws of each other jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such license or qualification, and have all corporate power and authority necessary to own or hold their respective properties and to conduct their respective businesses as described in the Registration Statement and the Prospectus, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect or would reasonably be expected to have a material adverse effect on the assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders' equity or results of operations of the Company and the Subsidiaries taken as a whole, or prevent the consummation of the transactions contemplated hereby (a "Material Adverse Effect").

g. Subsidiaries. As of the date hereof, the Company's only Subsidiaries are set forth on Schedule 6(g). The Company owns directly or indirectly, all of the equity interests of the Subsidiaries free and clear of any lien, charge, security interest, encumbrance, right of first refusal or other restriction, and all the equity interests of the Subsidiaries are validly issued and are fully paid, nonassessable and free of preemptive and similar rights.

h. No Violation or Default. Neither the Company nor any Subsidiary is (i) in violation of its charter or by-laws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any Subsidiary is a party or by which the Company or any Subsidiary is bound or to which any of the property or assets of the Company or any Subsidiary is subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority having jurisdiction over the Company, except, in the case of each of clauses (ii) and (iii) above, for any such violation or default that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. To the Company's knowledge, no other party under any material contract or other agreement to which it or any Subsidiary is a party is in default in any respect thereunder where such default would reasonably be expected to have a Material Adverse Effect.

i. No Material Adverse Effect. Since the date of the most recent financial statements of the Company included or incorporated by reference in the Registration Statement and Prospectus, there has not been (i) any Material Adverse Effect, (ii) other than this Agreement, any transaction which is material to the Company and the Subsidiaries taken as a whole, (iii) any obligation or liability, direct or contingent (including any off-balance sheet obligations), incurred by the Company or the Subsidiaries, which is material to the Company and the Subsidiaries taken

as a whole, (iv) any material change in the capital stock (other than (A) the grant of additional options under the Company's existing stock option plans, (B) changes in the number of outstanding Common Stock of the Company due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, Common Stock outstanding on the date hereof, (C) as a result of the issuance of Placement Shares, (D) any repurchases of capital stock of the Company, (E) as described in a proxy statement filed on Schedule 14A or a Registration Statement on Form S-4, or (F) otherwise publicly announced) or outstanding long-term indebtedness of the Company or the Subsidiaries or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company or any Subsidiary, other than in each case above (A) in the ordinary course of business, (B) as otherwise disclosed in the Registration Statement or Prospectus (including any document deemed incorporated by reference therein) or (C) where such matter, item, change, or development would not cause the statements in the Registration Statement or the Prospectus to contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading.

j. Capitalization. The issued and outstanding shares of capital stock of the Company have been validly issued, are fully paid and non-assessable and, other than as disclosed in the Registration Statement or the Prospectus, are not subject to any preemptive rights, rights of first refusal or similar rights. The Company has an authorized, issued and outstanding capitalization as set forth in the Registration Statement and the Prospectus as of the dates referred to therein (other than (i) the grant of additional options or other equity awards under the Company's existing stock option plans, (ii) changes in the number of outstanding shares of Common Stock of the Company due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, Common Stock outstanding on the date hereof, (iii) as a result of the issuance of Placement Shares, or (iv) any repurchases of capital stock of the Company) and such authorized capital stock conforms in all material respects to the description thereof set forth in the Registration Statement and the Prospectus. The description of the Common Stock in the Registration Statement and the Prospectus is complete and accurate in all material respects. As of the date referred to therein, the Company did not have outstanding any options to purchase, or any rights or warrants to subscribe for, or any securities or obligations convertible into, or exchangeable for, or any contracts or commitments to issue or sell, any shares of capital stock or other securities.

k. S-3 Eligibility. (i) At the time of filing the Registration Statement and (ii) at the time of the most recent amendment thereto for the purposes of complying with Section 10(a)(3) of the Securities Act (whether such amendment was by post-effective amendment, incorporated report filed pursuant to Section 13 or 15(d) of the Exchange Act or form of prospectus), the Company met the then applicable requirements for use of Form S-3 under the Securities Act, including compliance with General Instruction I.B.1 of Form S-3. The Company satisfies the eligibility requirements in existence immediately prior to October 21, 1992 for the use of a registration statement on Form S-3 for the offering of the Placement Shares. To enable the Agent to rely on Rule 5110(b)(7)(C)(i) of FINRA, the Company represents that, (i) as of a date within 60 days of the date of this Agreement, the Company had (A) a non-affiliate, public common equity float of at least $150 million or (B) a non-affiliate, public common equity float of at least $100 million and annual trading volume of at least three million shares and (ii) as of the date of this Agreement, has been subject to the Exchange Act reporting requirements for a period of at least 36 months.

l. Authorization; Enforceability. The Company has full legal right, power and authority to enter into this Agreement and, except as set forth in paragraph 6(n) hereof, perform the transactions contemplated hereby. This Agreement has been duly authorized, executed and delivered by the Company and is a legal, valid and binding agreement of the Company enforceable against the Company in accordance with its terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification and contribution provisions of Section 11 hereof may be limited by federal or state securities laws and public policy considerations in respect thereof. The approval of the Company's stockholders is not required under the rules and regulations of any trading market for the Company to issue and deliver the Placement Shares as contemplated in this Agreement.

m. Authorization of Placement Shares. The Placement Shares, when issued and delivered pursuant to the terms approved by the board of directors of the Company or a duly authorized committee thereof, or a duly authorized executive committee, against payment therefor as provided herein, will be duly and validly authorized and issued and fully paid and nonassessable, free and clear of any pledge, lien, encumbrance, security interest or other claim (other than any pledge, lien, encumbrance, security interest or other claim arising from an act or omission of Stifel or a purchaser), including any statutory or contractual preemptive rights, resale rights, rights of first refusal or other similar rights, and will be registered pursuant to Section 12 of the Exchange Act. The Placement Shares, when issued, will conform in all material respects to the description thereof set forth in or incorporated into the Prospectus. No holder of Placement Shares will be subject to personal liability solely by reason of being such a holder.

n. No Consents Required. No consent, approval, authorization, order, registration or qualification of or with any court or arbitrator or any governmental or regulatory authority is required for the execution, delivery and performance by the Company of this Agreement, and the issuance and sale by the Company of the Placement Shares as contemplated hereby, except for the registration of the Placement Shares under the Securities Act and pursuant to the Registration Statement and such consents, approvals, authorizations, orders and registrations or qualifications as may be required under applicable state securities laws or by the by-laws and rules of the Financial Industry Regulatory Authority, Inc. ("FINRA") or the Exchange, including any notices that may be required by the Exchange, in connection with the sale of the Placement Shares by Stifel.

o. No Preferential Rights. (i) No person, as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act (each, a "Person"), has the right, contractual or otherwise, to cause the Company to issue or sell to such Person any Common Stock or shares of any other capital stock or other securities of the Company (other than upon the exercise of options or warrants to purchase Common Stock or upon the exercise of options that may be granted from time to time under the Company's stock option plans), (ii) no Person has any preemptive rights, rights of first refusal, or any other rights (whether pursuant to a "poison pill" provision or otherwise) to purchase any Common Stock or shares of any other capital stock or other securities of the Company from the Company which have not been duly waived with respect to the offering contemplated hereby, (iii) no Person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Common Stock, and (iv) no Person has the right, contractual or otherwise, to require the Company to register under the Securities Act

any Common Stock or shares of any other capital stock or other securities of the Company, or to include any such shares or other securities in the Registration Statement or the offering contemplated thereby, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Placement Shares as contemplated thereby or otherwise, except for such rights as have been waived or satisfied as of the date hereof.

p. Independent Public Accountant. Ernst & Young LLP (the "Accountant"), whose report on the consolidated financial statements of the Company is filed with the Commission as part of the Company's most recent Annual Report on Form 10-K filed with the Commission and incorporated into the Registration Statement, are and, during the periods covered by their report, were independent public accountants within the meaning of the Securities Act and the Public Company Accounting Oversight Board (United States). To the Company's knowledge, the Accountant is not in violation of the auditor independence requirements of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act") with respect to the Company.

q. Enforceability of Agreements. To the Company's knowledge, all agreements between the Company and third parties expressly referenced in the Prospectus, other than such agreements that have expired by their terms or whose termination is disclosed in documents filed by the Company on EDGAR, are legal, valid and binding obligations of the Company enforceable against the Company in accordance with their respective terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification provisions of certain agreements may be limited by federal or state securities laws or public policy considerations in respect thereof, and except for any unenforceability that, individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect.

r. No Litigation. There are no legal, governmental or regulatory actions, suits or proceedings pending, nor, to the Company's knowledge, any legal, governmental or regulatory investigations, to which the Company or a Subsidiary is a party or to which any property of the Company or any Subsidiary is the subject that, individually or in the aggregate, if determined adversely to the Company or any Subsidiary, would reasonably be expected to have a Material Adverse Effect or materially and adversely affect the ability of the Company to perform its obligations under this Agreement; to the Company's knowledge, no such actions, suits or proceedings are threatened or contemplated by any governmental or regulatory authority or threatened by others that, individually or in the aggregate, if determined adversely to the Company or any Subsidiary, would reasonably be expected to have a Material Adverse Effect; and (i) there are no current or pending legal, governmental or regulatory actions, suits or proceedings, or, to the Company's knowledge, investigations, that are required under the Securities Act to be described in the Prospectus that are not described in the Prospectus including any Incorporated Document; and (ii) there are no contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement that are not so filed.

s. Licenses and Permits. The Company and the Subsidiaries possess or have obtained, all licenses, certificates, consents, orders, approvals, permits and other authorizations issued by, and, to the Company's knowledge, have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of their respective properties or the conduct of their respective businesses as described in the Registration Statement and the Prospectus (the "Permits"), except where the failure to possess, obtain or make the same would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Neither the Company nor any Subsidiary have received written notice of any proceeding relating to revocation or modification of any such Permit or has any reason to believe that such Permit will not be renewed in the ordinary course, except where the failure to obtain any such renewal would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

t. No Material Defaults. Neither the Company nor any Subsidiary has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect. The Company has not filed a report pursuant to Section 13(a) or 15(d) of the Exchange Act since the filing of its last Annual Report on Form 10-K, indicating that it (i) has failed to pay any dividend or sinking fund installment on preferred stock or (ii) has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect.

u. Certain Market Activities. Neither the Company, nor any Subsidiary, nor, to the Company's knowledge, any of their respective directors, officers or controlling persons has taken, directly or indirectly, any action designed, or that has constituted or would reasonably be expected to cause or result in, under the Exchange Act or otherwise, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Placement Shares.

v. Broker/Dealer Relationships. Neither the Company nor any Subsidiary or any related entities (i) is required to register as a "broker" or "dealer" in accordance with the provisions of the Exchange Act or (ii) directly or indirectly through one or more intermediaries, controls or is a "person associated with a member" or "associated person of a member" (within the meaning set forth in the FINRA Manual). Except as described in the Registration Statement or the Prospectus, neither the Company nor, to the Company's knowledge, the Company's officers, directors or any of its affiliates (within the meaning of FINRA Conduct Rule 5121(f)(1)), directly or indirectly controls, is controlled by, or is under common control with, or is an associated person (within the meaning of Article I, Section 1(gg) of the By-laws of FINRA) of, any member firm of FINRA.

w. No Reliance. The Company has not relied upon Stifel or legal counsel for Stifel for any legal, tax or accounting advice in connection with the offering and sale of the Placement Shares.

x. Taxes. The Company and the Subsidiaries have filed all federal, state, local and foreign tax returns which have been required to be filed and paid all taxes shown thereon through the date hereof, to the extent that such taxes have become due and are not being contested in good faith, except where the failure to do so would not reasonably be expected to have a Material Adverse Effect. Except as otherwise disclosed in or contemplated by the Registration Statement or the Prospectus, no tax deficiency has been determined adversely to the Company or any Subsidiary which has had, or would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect. The Company has no knowledge of any federal, state or other governmental tax deficiency, penalty or assessment which has been or might be asserted or threatened against it which would reasonably be expected to have a Material Adverse Effect.

y. Title to Real and Personal Property. The Company and the Subsidiaries have good and valid title in fee simple to all items of real property and good and valid title to all personal property (excluding Intellectual Property, which is discussed in Section 6(z) below) described in the Registration Statement or Prospectus as being owned by them that are material to the businesses of the Company or such Subsidiary, in each case free and clear of all liens, encumbrances and claims, except for any failure to have good and marketable title for any liens, encumbrances and claims that (i) do not materially interfere with the use made of such property by the Company and the Subsidiaries or (ii) would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. Any real property described in the Registration Statement or Prospectus as being leased by the Company and the Subsidiaries is held by them under valid, existing and enforceable leases, except those that (A) do not materially interfere with the use made of such property by the Company or the Subsidiaries or (B) would not be reasonably expected, individually or in the aggregate, to have a Material Adverse Effect.

z. Intellectual Property. The Company and the Subsidiaries own or possess or can acquire on reasonable terms enforceable rights to use all patents, patent applications, trademarks (both registered and unregistered), service marks, trade names, trademark registrations, service mark registrations, copyrights, licenses and know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures) (collectively, the "Intellectual Property"), necessary for the conduct of their respective businesses as conducted as of the date hereof, except to the extent that the failure to own or possess or acquire adequate rights to use such Intellectual Property would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; the Company and the Subsidiaries have not received any written notice of any claim of infringement or conflict which asserted Intellectual Property rights of others, which infringement or conflict, if the subject of an unfavorable decision, would result in a Material Adverse Effect; there are no pending, or to the Company's knowledge, threatened judicial proceedings or interference proceedings against the Company or its Subsidiaries challenging the Company's or any of its Subsidiary's rights in or to or the validity of the scope of any of the Company's or any Subsidiary's patents, patent applications or proprietary information, except such proceedings that have been disclosed in writing to Stifel or would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; no other entity or individual has any right or claim in any of the Company's or any of its Subsidiary's patents, patent applications or any patent to be

issued therefrom by virtue of any contract, license or other agreement entered into between such entity or individual and the Company or any Subsidiary or by any non-contractual obligation, other than by written licenses granted by the Company or any Subsidiary except for such right or claim that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; the Company and the Subsidiaries have not received any written notice of any claim challenging the rights of the Company or its Subsidiaries in or to any Intellectual Property owned, licensed or optioned by the Company or any Subsidiary which claim, if the subject of an unfavorable decision would reasonably be expected to result in a Material Adverse Effect.

aa. Environmental Laws. The Company and the Subsidiaries (i) are in compliance with any and all applicable federal, state, local and foreign laws, rules, regulations, decisions and orders relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "Environmental Laws"); (ii) have received and are in compliance with all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses as described in the Registration Statement and the Prospectus; and (iii) have not received notice of any actual or potential liability for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, except, in the case of any of clauses (i), (ii) or (iii) above, for any such failure to comply or failure to receive required permits, licenses, other approvals or liability as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

bb. Disclosure Controls. The Company maintains systems of internal accounting controls designed to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company is not aware of any material weaknesses in its internal control over financial reporting. Since the date of the latest audited financial statements of the Company included in the Prospectus, there has been no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. The Company has established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15 and 15d-15) for the Company and designed such disclosure controls and procedures to ensure that material information relating to the Company and the Subsidiaries is made known to the certifying officers by others within those entities, particularly during the period in which the Company's Annual Report on Form 10-K or Quarterly Report on Form 10-Q, as the case may be, is being prepared. The Company's certifying officers have evaluated the effectiveness of the Company's controls and procedures as of a date within 90 days prior to the filing date of the Form 10-K for the fiscal year most recently ended (such date, the "Evaluation Date"). The Company presented in its Form 10-K for the fiscal year most recently ended the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the most recent Evaluation Date. Since the most recent Evaluation Date, there have been no

significant changes in the Company's internal controls (as such term is defined in Item 307(b) of Regulation S-K under the Securities Act) or, to the Company's knowledge, in other factors that could significantly affect the Company's internal controls. To the knowledge of the Company, the Company's "internal controls over financial reporting" and "disclosure controls and procedures" are effective.

cc. Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company's directors or officers, in their capacities as such, to comply with any applicable provisions of the Sarbanes-Oxley Act and the rules and regulations promulgated thereunder. Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company as applicable) has made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other documents required to be filed by the Company or furnished by it to the Commission during the past 12 months. For purposes of the preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Exchange Act Rules 13a-15 and 15d-15.

dd. Finder's Fees. Neither the Company nor any Subsidiary has incurred any liability for any finder's fees, brokerage commissions or similar payments in connection with the transactions herein contemplated, except as may otherwise exist with respect to Stifel pursuant to this Agreement.

ee. Labor Disputes. No labor disturbance by or dispute with employees of the Company or any Subsidiary exists or, to the knowledge of the Company, is threatened which would reasonably be expected to result in a Material Adverse Effect.

ff. Investment Company Act. Neither the Company nor any Subsidiary is or, after giving effect to the offering and sale of the Placement Shares, will be an "investment company" or an entity "controlled" by an "investment company," as such terms are defined in the Investment Company Act of 1940, as amended (the "Investment Company Act").

gg. Operations. The operations of the Company and the Subsidiaries are and have been conducted at all times in compliance with applicable financial record keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions to which the Company or the Subsidiaries are subject, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency having jurisdiction over the Company (collectively, the "Money Laundering Laws"), except as would not reasonably be expected to result in a Material Adverse Effect; and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

hh. Off-Balance Sheet Arrangements. There are no transactions, arrangements and other relationships between and/or among the Company, and/or, to the knowledge of the Company, any of its affiliates and any unconsolidated entity, including, but not limited to, any structured finance, special purpose or limited purpose entity (each, an "Off Balance Sheet Transaction") that would reasonably be expected to affect materially the Company's liquidity or the availability of or requirements for its capital resources, including those Off Balance Sheet Transactions described in the Commission's Statement about Management's Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), required to be described in the Registration Statement or the Prospectus which have not been described as required.

ii. Underwriter Agreements. The Company is not a party to any agreement with an agent or underwriter for any other "at the market" or continuous equity transaction.

jj. ERISA. To the knowledge of the Company, (i) each material employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("ERISA"), that is maintained, administered or contributed to by the Company or any of its affiliates for employees or former employees of the Company and the Subsidiaries has been maintained in material compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Internal Revenue Code of 1986, as amended (the "Code"); (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred with respect to any such plan excluding transactions effected pursuant to a statutory or administrative exemption; and (iii) for each such plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, no "accumulated funding deficiency" as defined in Section 412 of the Code has been incurred, whether or not waived, and the fair market value of the assets of each such plan (excluding for these purposes accrued but unpaid contributions) equals or exceeds the present value of all benefits accrued under such plan determined using reasonable actuarial assumptions, other than, in the case of (i), (ii) and (iii) above, as would not reasonably be expected to have a Material Adverse Effect.

kk. Forward-Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) (a "Forward-Looking Statement") contained in the Registration Statement and the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith. The Forward-Looking Statements incorporated by reference in the Registration Statement and the Prospectus from the Company's Annual Report on Form 10-K for the fiscal year most recently ended (i) except for any Forward-Looking Statement included in any financial statements and notes thereto, are, to the Company's knowledge, within the coverage of the safe harbor for forward looking statements set forth in Section 27A of the Securities Act, Rule 175(b) under the Securities Act or Rule 3b-6 under the Exchange Act, as applicable, (ii) were made by the Company with a reasonable basis and in good faith and reflect the Company's good faith commercially reasonable best estimate of the matters described therein as of the respective dates on which such statements were made, and (iii) have been prepared in accordance with Item 10 of Regulation S-K under the Securities Act.

ll. Margin Rules. Neither the issuance, sale and delivery of the Placement Shares nor the application of the proceeds thereof by the Company as described in the Registration Statement and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System.

mm. Insurance. The Company and the Subsidiaries carry, or are covered by, insurance in such amounts and covering such risks as the Company and the Subsidiaries reasonably believe are adequate for the conduct of their business and as is customary for companies of similar size engaged in similar businesses in similar industries.

nn. No Improper Practices. (i) Neither the Company nor, to the Company's knowledge, the Subsidiaries, nor to the Company's knowledge, any of their respective executive officers has, in the past five years, made any unlawful contributions to any candidate for any political office (or failed fully to disclose any contribution in violation of law) or made any contribution or other payment to any official of, or candidate for, any federal, state, municipal, or foreign office or other person charged with similar public or quasi-public duty in violation of any law or of the character required to be disclosed in the Prospectus; (ii) no relationship, direct or indirect, exists between or among the Company or, to the Company's knowledge, the Subsidiaries or any affiliate of any of them, on the one hand, and the directors, officers and stockholders of the Company or, to the Company's knowledge, the Subsidiaries, on the other hand, that is required by the Securities Act to be described in the Registration Statement and the Prospectus that is not so described; (iii) no relationship, direct or indirect, exists between or among the Company or the Subsidiaries or any affiliate of them, on the one hand, and the directors, officers, stockholders or directors of the Company or, to the Company's knowledge, the Subsidiaries, on the other hand, that is required by the rules of FINRA to be described in the Registration Statement and the Prospectus that is not so described; (iv) there are no material outstanding loans or advances or material guarantees of indebtedness by the Company or, to the Company's knowledge, the Subsidiaries to or for the benefit of any of their respective officers or directors or any of the members of the families of any of them; and (v) the Company has not offered, or caused any placement agent to offer, Common Stock to any person with the intent to influence unlawfully (A) a customer or supplier of the Company or the Subsidiaries to alter the customer's or supplier's level or type of business with the Company or the Subsidiaries or (B) a trade journalist or publication to write or publish favorable information about the Company or the Subsidiaries or any of their respective products or services, and, (vi) neither the Company nor the Subsidiaries nor, to the Company's knowledge, any employee or agent of the Company or the Subsidiaries has made any payment of funds of the Company or the Subsidiaries or received or retained any funds in violation of any law, rule or regulation (including, without limitation, the Foreign Corrupt Practices Act of 1977), which payment, receipt or retention of funds is of a character required to be disclosed in the Registration Statement or the Prospectus.

oo. Status Under the Securities Act. At the time of filing the Registration Statement and any post-effective amendment thereto, at the earliest time thereafter that the Company or another offering participant made a bona fide offer (within the meaning of Rule 164(h)(2) of the 1933 Act Regulations) of the Placement Shares and at the date hereof, the Company was not and is not an "ineligible issuer," as defined in Rule 405, without taking account of any determination by the Commission pursuant to Rule 405 that it is not necessary that the Company be considered an ineligible issuer.

pp. No Misstatement or Omission in an Issuer Free Writing Prospectus. Each Issuer Free Writing Prospectus, as of its issue date and as of each Applicable Time (as defined in Section 25 below), did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any incorporated document deemed to be a part thereof that has not been superseded or modified. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Company by Stifel specifically for use therein.

qq. No Conflicts. Neither the execution of this Agreement, nor the issuance, offering or sale of the Placement Shares, nor the consummation of any of the transactions contemplated herein and therein, nor the compliance by the Company with the terms and provisions hereof and thereof will conflict with, or will result in a breach of, any of the terms and provisions of, or has constituted or will constitute a default under, or has resulted in or will result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to the terms of any contract or other agreement to which the Company may be bound or to which any of the property or assets of the Company is subject, except (i) such conflicts, breaches or defaults as may have been waived and (ii) such conflicts, breaches and defaults that would not reasonably be expected to have a Material Adverse Effect; nor will such action result (x) in any violation of the provisions of the organizational or governing documents of the Company, or (y) in any material violation of the provisions of any statute or any order, rule or regulation applicable to the Company or of any court or of any federal, state or other regulatory authority or other government body having jurisdiction over the Company, except where such violation would not reasonably be expected to have a Material Adverse Effect.

rr. Compliance with Applicable Laws. The Company and the Subsidiaries: (A) are and at all times have been in material compliance with all applicable statutes, rules and regulations relating to the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product under development, manufactured or distributed by the Company or the Subsidiaries ("Applicable Laws"), (b) have not received any Form 483 from the FDA, notice of adverse finding, warning letter, or other written correspondence or notice from the FDA, the European Medicines Agency (the "EMA"), or any other federal, state, local or foreign governmental or regulatory authority alleging or asserting material noncompliance with any Applicable Laws or any licenses, certificates, approvals, clearances, authorizations, permits and supplements or amendments thereto required by any such Applicable Laws ("Authorizations"), which would, individually or in the aggregate, result in a Material Adverse Effect; (C) possess all material Authorizations and such Authorizations are valid and in full force and effect and neither the Company nor the Subsidiaries is in material violation of any term of any such Authorizations; (D) have not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from the FDA, the EMA, or any other federal, state, local or foreign governmental or regulatory authority or third party alleging that any Company product, operation or activity is in material violation of any Applicable Laws or Authorizations and has no knowledge that the FDA, the EMA, or any other federal, state, local or foreign governmental or regulatory

authority or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding against the Company; (E) have not received notice that the FDA, EMA, or any other federal, state, local or foreign governmental or regulatory authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any material Authorizations and has no knowledge that the FDA, EMA, or any other federal, state, local or foreign governmental or regulatory authority is considering such action; and (F) have filed, obtained, maintained or submitted all reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations except where the failure to file such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments would not result in a Material Adverse Effect, and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were materially complete and correct on the date filed (or were corrected or supplemented by a subsequent submission).

ss. Clinical Studies. All animal and other preclinical studies and clinical trials conducted by the Company or on behalf of the Company were, and, if still pending are, to the Company's knowledge, being conducted in all material respects in compliance with all Applicable Laws and in accordance with experimental protocols, procedures and controls generally used by qualified experts in the preclinical study and clinical trials of new drugs and biologics as applied to comparable products to those being developed by the Company, except where such noncompliance would not reasonably be expected to have a Material Adverse Effect; the descriptions of the results of such preclinical studies and clinical trials contained in the Registration Statement and the Prospectus are accurate in all material respects, and the Company has no knowledge of any other clinical trials or preclinical studies, the results of which reasonably call into question the clinical trial or preclinical study results described or referred to in the Registration Statement and the Prospectus when viewed in the context in which such results are described; and the Company has not received any written notices or correspondence from the FDA, the EMA, or any other domestic or foreign governmental agency requiring the termination or suspension of any preclinical studies or clinical trials conducted by or on behalf of the Company that are described in the Registration Statement and the Prospectus or the results of which are referred to in the Registration Statement and the Prospectus.

tt. Compliance Program. The Company has established and administers a compliance program applicable to the Company, to assist the Company and the directors, officers and employees of the Company in complying with applicable regulatory guidelines (including, without limitation, those administered by the FDA, the EMA, and any other foreign, federal, state or local governmental or regulatory authority having jurisdiction over the Company and performing functions similar to those performed by the FDA or EMA); except where such noncompliance would not reasonably be expected to have a Material Adverse Effect.

uu. OFAC.

(i) To the Company's knowledge, neither the Company nor any Subsidiary (collectively, the "Entity") nor any director, officer, employee, agent, affiliate or representative of the Entity, is a government, individual, or entity (in this paragraph (uu), "Person") that is, or is owned or controlled by a Person that is:

(a) the subject of any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control ("OFAC"), the United Nations Security Council ("UNSC"), the European Union ("EU"), Her Majesty's Treasury, or other relevant sanctions authority (collectively, "Sanctions"), nor

(b) located, organized or resident in a country or territory that is the subject of Sanctions (including, without limitation, Burma/Myanmar, Cuba, Iran, North Korea, Sudan and Syria).

(ii) The Entity represents and covenants that it will not, directly or indirectly, knowingly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Person:

(a) to fund or facilitate any activities or business of or with any Person or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions; or

(b) in any other manner that will result in a violation of Sanctions by any Person (including any Person participating in the offering, whether as underwriter, advisor, investor or otherwise).

(iii) The Entity represents that, except as described in the Prospectus, for the past 5 years, it has not knowingly engaged in, is not now knowingly engaged in, and will not knowingly engage in, any dealings or transactions with any Person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanct

vv. Stock Transfer Taxes. On each Settlement Date, all stock transfer or other taxes (other than income taxes) which are required to be paid in connection with the sale and transfer of the Placement Shares to be sold hereunder will be, or will have been, fully paid or provided for by the Company and all laws imposing such taxes will be or will have been fully complied with by the Company in all material respects.

ww. Statistical and Market-Related Data. Any statistical and market-related data included in the Registration Statement or the Prospectus are based on or derived from sources that the Company believes, after reasonable inquiry, to be reliable and accurate and, to the extent required, the Company has obtained the written consent to the use of such data from such sources.

xx. Company Stock Plans. With respect to the stock options (the "Stock Options") granted pursuant to the stock-based compensation plans of the Company and its Subsidiaries (the "Company Stock Plans") that are currently outstanding and not exercised, (i) each Stock Option intended to qualify as an "incentive stock option" under Section 422 of the Code so qualifies, (ii) each grant of a Stock Option was duly authorized no later than the date on which the grant of such Stock Option was by its terms to be effective (the "Grant Date") by all necessary corporate action, including, as applicable, approval by the board of directors of the Company (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any) was duly executed and delivered by each party thereto, (iii) each such grant was made in accordance with the terms of the Company Stock Plans, the Exchange Act and all other applicable laws and regulatory rules or requirements, including the rules of the Exchange and any other exchange on which Company securities are traded, and (iv) each such grant was properly accounted for in accordance with GAAP in the financial statements (including the related notes) of the Company and disclosed in the Company's filings with the Commission in accordance with the Exchange Act and all other applicable laws. The Company has not knowingly granted, and there is no and has been no policy or practice of the Company of granting, Stock Options prior to, or otherwise coordinating the grant of Stock Options with, the release or other public announcement of material information regarding the Company or its subsidiaries or their results of operations or prospects.

yy. Actively Traded Security. The Common Stock is an "actively-traded security" exempted from the requirements of Rule 101 of Regulation M under the Exchange Act by subsection (c)(1) of such rule.

Any certificate signed by an officer of the Company and delivered to Stifel or to counsel for Stifel in connection with a representation and warranty by the Company, as applicable, to Stifel as to the matters set forth therein.

7. Covenants of the Company. The Company covenants and agrees with Stifel that:

a. Registration Statement Amendments. After the date of this Agreement and during any period in which a prospectus relating to any Placement Shares is required to be delivered by Stifel under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act) (the "Prospectus Delivery Period") (i) the Company will notify Stifel promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference or amendments not related to any Placement, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus related to the Placement or for additional information related to the Placement, (ii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus relating to the Placement Shares or a security convertible into the Placement Shares unless a copy thereof has been submitted to Stifel within a reasonable period of time before the filing and Stifel has

not reasonably objected thereto within the two (2) business day period (*provided, however*, that (A) the failure of Stifel to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect Stifel's right to rely on the representations and warranties made by the Company in this Agreement and (B) the Company has no obligation to provide Stifel any advance copy of such filing or to provide Stifel an opportunity to object to such filing if the filing does not name Stifel or does not relate to a Placement; and provided, further, that the only remedy Stifel shall have with respect to the failure by the Company to obtain such consent shall be to cease making sales under this Agreement) and the Company will furnish to Stifel at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR (regardless of whether the Company has requested confidential treatment therefor); and (iii) the Company will cause each amendment or supplement to the Prospectus to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act or, in the case of any document to be incorporated therein by reference, to be filed with the Commission as required pursuant to the Exchange Act, within the time period prescribed (the determination to file or not file any amendment or supplement with the Commission under this Section 7(a), based on the Company's reasonable opinion or reasonable objections, shall be made exclusively by the Company).

b. Notice of Commission Stop Orders. The Company will advise Stifel, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose; and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. The Company will advise Stifel promptly after it receives any request by the Commission for any amendments to the Registration Statement or any amendment or supplements to the Prospectus or any Issuer Free Writing Prospectus or for additional information related to the offering of the Placement Shares or for additional information related to the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus.

c. Delivery of Prospectus; Subsequent Changes. During the Prospectus Delivery Period, the Company will use its commercially reasonable efforts to comply in all material respects with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If the Company has omitted any information from the Registration Statement pursuant to Rule 430A under the Securities Act, it will use its commercially reasonable efforts to comply with the provisions of and make all requisite filings with the Commission pursuant to said Rule 430A and to notify Stifel promptly of all such filings. If during the Prospectus Delivery Period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such Prospectus Delivery Period

it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify Stifel to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; *provided, however*, that the Company may delay the filing of any amendment or supplement, if in the judgment of the Company, it is in the best interest of the Company to do so.

d. Listing of Placement Shares. During the Prospectus Delivery Period, the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on the Exchange and to qualify the Placement Shares for sale under the securities laws of such jurisdictions in the United States as Stifel reasonably designates and to continue such qualifications in effect so long as required for the distribution of the Placement Shares; *provided, however*, that the Company shall not be required in connection therewith to qualify as a foreign corporation or dealer in securities or file a general consent to service of process in any jurisdiction.

e. Delivery of Registration Statement and Prospectus. The Company will furnish to Stifel and its counsel (at the reasonable expense of the Company) copies of the Registration Statement, the Prospectus (including all documents incorporated by reference therein) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during the Prospectus Delivery Period (including all documents filed with the Commission during such period that are deemed to be incorporated by reference therein), in each case as soon as reasonably practicable and in such quantities as Stifel may from time to time reasonably request and, at Stifel's reasonable request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; *provided, however*, that the Company shall not be required to furnish any document (other than the Prospectus) to Stifel to the extent such document is available on EDGAR.

f. Earnings Statement. The Company will make generally available to its security holders as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement covering a 12-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

g. Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

h. Notice of Other Sales. Without the prior written consent of Stifel, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the date on which any Placement Notice is delivered to Stifel hereunder and ending on the third (3rd) Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares

covered by a Placement Notice, the date of such suspension or termination); and will not directly or indirectly in any other "at the market" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock prior to the termination of this Agreement; *provided, however*, that such restrictions will not be required in connection with the Company's issuance or sale of (i) Common Stock, options to purchase Common Stock or Common Stock issuable upon the exercise of options, pursuant to any employee or director stock option or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented; (ii) Common Stock issuable upon conversion of securities or the exercise of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to Stifel, and (iii) Common Stock, or securities convertible into or exercisable for Common Stock, offered and sold in a privately negotiated transaction to vendors, customers, strategic partners or potential strategic partners or other investors conducted in a manner so as not to be integrated with the offering of Common Stock hereby.

i. Change of Circumstances. The Company will, at any time during the pendency of a Placement Notice advise Stifel promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document required to be provided to Stifel pursuant to this Agreement.

j. Due Diligence Cooperation. During the term of this Agreement, the Company will cooperate with any reasonable due diligence review conducted by Stifel or its representatives in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices, as Stifel may reasonably request.

k. Required Filings Relating to the Filing of a prospectus supplement with the Commission under Rule 424(b). The Company agrees that on such dates as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act (the date of each and every filing under Rule 424(b), a "Filing Date"), which prospectus supplement will set forth, within the relevant period, the amount of Placement Shares to be sold through Stifel, the Net Proceeds to the Company and the compensation payable by the Company to Stifel with respect to such Placement Shares, and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market.

l. Representation Dates; Certificate. Each time during the term of this Agreement that the Company:

(i) amends or supplements (other than a prospectus supplement relating solely to an offering of securities other than the Placement Shares) the Registration Statement or the Prospectus relating to the Placement Shares by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of documents by reference into the Registration Statement or the Prospectus relating to the Placement Shares;

(ii) files an annual report on Form 10-K under the Exchange Act (including any Form 10-K/A containing amended financial information or a material amendment to the previously filed Form 10-K);

(iii) files its quarterly reports on Form 10-Q under the Exchange Act; or

(iv) files a current report on Form 8-K containing amended financial information (other than information "furnished" pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) under the Exchange Act;

(Each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a "Representation Date.")

the Company shall furnish Stifel (but in the case of clause (iv) above only if Stifel reasonably determines that the information contained in such Form 8-K is material) with a certificate, in the form attached hereto as Exhibit 7(1). The requirement to provide a certificate under this Section 7(1) shall be waived for any Representation Date occurring at a time at which no Placement Notice is pending, which waiver shall continue until the earlier to occur of the date the Company delivers a Placement Notice hereunder (which for such calendar quarter shall be considered a Representation Date) and the next occurring Representation Date on which the Company files its annual report on Form 10-K. Notwithstanding the foregoing, (i) upon the delivery of the first Placement Notice hereunder and (ii) if the Company subsequently decides to sell Placement Shares following a Representation Date when the Company relied on such waiver and did not provide Stifel with a certificate under this Section 7(1), then before Stifel sells any Placement Shares, the Company shall provide Stifel with a certificate, in the form attached hereto as Exhibit 7(1), dated the date of the Placement Notice.

m. Legal Opinion. On or prior to the date of the first Placement Notice given hereunder the Company shall cause to be furnished to Stifel a written opinion and a negative assurance letter of Latham & Watkins LLP ("Company Counsel"), or other counsel reasonably satisfactory to Stifel. Thereafter, within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(l) for which no waiver is applicable, and not more than once per calendar quarter, the Company shall cause to be furnished to Stifel a written negative assurance letter of Company Counsel, modified, as necessary, to relate to the Registration Statement and the

Prospectus as then amended or supplemented; *provided that*, in lieu of such negative assurance letter for subsequent periodic filings under the Exchange Act, counsel may furnish Stifel with a letter (a "Reliance Letter") to the effect that Stifel may rely on the negative assurance letter previously delivered under this Section 7(m) to the same extent as if it were dated the date of such letter (except that statements in such prior letter shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as of the date of the Reliance Letter).

n. Intellectual Property Legal Opinion. On or prior to the date of the first Placement Notice given hereunder the Company shall cause to be furnished to Stifel a written opinion and a negative assurance letter of Jones Day ("Intellectual Property Counsel"), or other counsel reasonably satisfactory to Stifel.

o. Comfort Letter. On or prior to the date of the first Placement Notice given hereunder and within five (5) Trading Days after each subsequent Representation Date, other than pursuant to Section 7(l)(iii), the Company shall cause its independent accountants to furnish Stifel a letter (the "Comfort Letter"), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(o); provided, that if requested by Stifel, the Company shall cause a Comfort Letter to be furnished to Stifel within ten (10) Trading Days of such request following the date of occurrence of any restatement of the Company's financial statements. The Comfort Letter from the Company's independent accountants shall be in a form and substance reasonably satisfactory to Stifel, (i) confirming that they are an independent public accounting firm within the meaning of the Securities Act and the PCAOB, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants' "comfort letters" to underwriters in connection with registered public offerings (the first such letter, the "Initial Comfort Letter") and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

p. Market Activities. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or would reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of Common Stock or (ii) sell, bid for, or purchase Common Stock in violation of Regulation M, or pay anyone any compensation for soliciting purchases of the Placement Shares other than Stifel.

q. Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that neither it nor the Subsidiaries will be or become, at any time prior to the termination of this Agreement, an "investment company," as such term is defined in the Investment Company Act.

r. No Offer to Sell. Other than an Issuer Free Writing Prospectus approved in advance by the Company and Stifel in its capacity as agent hereunder pursuant to Section 23, neither Stifel nor the Company (including its agents and representatives, other than Stifel in their capacity as such) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

s. Sarbanes-Oxley Act. The Company will use commercially reasonable efforts to maintain and keep accurate books and records reflecting its assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company's consolidated financial statements in accordance with GAAP, (iii) that receipts and expenditures of the Company are being made only in accordance with management's and the Company's directors' authorization, and (iv) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on its financial statements. The Company will use commercially reasonable efforts to maintain such controls and other procedures, including, without limitation, those required by Sections 302 and 906 of the Sarbanes-Oxley Act, and the applicable regulations thereunder that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms, including, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure and to ensure that material information relating to the Company or the Subsidiaries is made known to them by others within those entities, particularly during the period in which such periodic reports are being prepared.

t. Qualification. The Company shall promptly from time to time to take such action as Stifel may reasonably request to qualify the Placement Shares for offering and sale under the securities laws of such jurisdictions as Stifel may request and to comply with such laws so as to permit the continuance of sales and dealings therein in such jurisdictions for as long as may be necessary to complete the sale of the Placement Shares, provided that in connection therewith the Company shall not be required to qualify as a foreign corporation or to file a general consent to service of process in any jurisdiction; and to promptly advise Stifel of the receipt by the Company of any notification with respect to the suspension of the qualification of the Placement Shares for offer or sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose.

u. The Company consents to Stifel trading in the Company's Common Stock for Stifel's own account and for the account of its clients at the same time as sales of Placement Shares occur pursuant to this Agreement or any Placement Notice.

v. If, to the knowledge of the Company, all filings required by Rule 424 in connection with this offering shall not have been made or the representations in Section 6 shall not be true and correct on the applicable Settlement Date, the Company will offer to any person who has agreed to purchase Placement Shares from the Company as the result of an offer to purchase solicited by Stifel the right to refuse to purchase and pay for such Placement Shares.

8. Representations and Covenants of Stifel. Stifel represents and warrants that it is duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which Stifel is exempt from registration or such registration is not otherwise required. Stifel shall continue, for the term of this Agreement, to be duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which Stifel is exempt from registration or such registration is not otherwise required, during the term of this Agreement. Stifel shall comply with all applicable law and regulations, including but not limited to Regulation M, in connection with the transactions contemplated by this Agreement, including the issuance and sale through Stifel of the Placement Shares.

9. Payment of Expenses. The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation, filing, including any fees required by the Commission, and printing of the Registration Statement (including financial statements and exhibits) as originally filed and of each amendment and supplement thereto and each Free Writing Prospectus, in such number as Stifel shall deem reasonably necessary, (ii) the printing and delivery to Stifel of this Agreement and such other documents as may be reasonably required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (iii) the preparation, issuance and delivery of the certificates, if any, for the Placement Shares to Stifel, including any stock or other transfer taxes and any capital duties, stamp duties or other duties or taxes payable upon the sale, issuance or delivery of the Placement Shares to Stifel, (iv) the fees and disbursements of the counsel, accountants and other advisors to the Company, (v) the fees and disbursements of counsel to Stifel up to $50,000; (vi) the fees and expenses of the transfer agent and registrar for the Common Stock, (vii) the filing fees incident to any review by FINRA of the terms of the sale of the Placement Shares, (viii) the fees and expenses incurred in connection with the listing of the Placement Shares on the Exchange, (ix) all expenses in connection with the qualification of the Placement Shares for offering and sale under state securities laws and (x) all other costs and expenses incident to the performance of its obligations hereunder which are not otherwise specifically provided for in this Section. It is understood, however, that, except as provided in this Section, and Section 11 hereof, Stifel will pay all of its own costs and expenses, including the fees of its counsel, transfer taxes on resale of any of the Placement Shares by it, and any advertising expenses connected with any offers it may make.

10. Conditions to Stifel's Obligations. The obligations of Stifel hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein, to the due performance by the Company of its obligations hereunder, to the completion by Stifel of a due diligence review satisfactory to it in its reasonable judgment, and to the continuing satisfaction (or waiver by Stifel in its sole discretion) of the following additional conditions:

a. Registration Statement Effective. The Registration Statement shall have become effective and shall be available for the sale of all Placement Shares contemplated to be issued by any Placement Notice.

b. No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state governmental authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus; (ii) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; or (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, the Prospectus or documents so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

c. No Misstatement or Material Omission. Stifel shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in Stifel's reasonable opinion is material, or omits to state a fact that in Stifel's reasonable opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

d. Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any Material Adverse Effect, or any development in the business or affairs of the Company that could reasonably be expected to cause a Material Adverse Effect.

e. Legal Opinions. Stifel shall have received (i) the opinion and negative assurance letter of Company Counsel required to be delivered pursuant Section 7(m) on or before the date on which such delivery of such documents are required pursuant to Section 7(m), (ii) the opinion and negative assurance letter of Goodwin Procter LLP, counsel for Stifel, to be delivered on or before the same dates on which the Company Counsel opinion and negative assurance letter are required pursuant to Section 7(m) and (iii) the opinion of Intellectual Property Counsel required to be delivered pursuant to Section 7(n) on or before the date on which such delivery of such document is required pursuant to Section 7(n).

f. Comfort Letter. Stifel shall have received the Comfort Letter required to be delivered pursuant Section 7(o) on or before the date on which such delivery of such letter is required pursuant to Section 7(o).

g. Representation Certificate. Stifel shall have received the certificate required to be delivered pursuant to Section 7(1) on or before the date on which delivery of such certificate is required pursuant to Section 7(1).

h. Secretary's Certificate. Prior to commencement of the offering of Placement Shares under this Agreement, Stifel shall have received a certificate, signed on behalf of the Company by its corporate Secretary, in form and substance satisfactory to Stifel and its counsel.

i. No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange and the Common Stock shall not have been delisted from the Exchange.

j. Securities Act Filings Made. All filings with the Commission required by Rule 424 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424.

k. Approval for Listing. The Placement Shares shall either have been approved for listing on the Exchange, subject only to notice of issuance, or the Company shall have filed an application for listing of the Placement Shares on the Exchange at, or prior to, the issuance of any Placement Notice.

l. No Termination Event. There shall not have occurred any event that would permit Stifel to terminate this Agreement pursuant to Section 13(a).

m. Other. Prior to any Settlement Date, the Company shall have furnished to Stifel such further information, documents or certificates as Stifel may reasonably request.

11. Indemnification and Contribution.

) a (Company Indemnification. The Company agrees to indemnify and hold harmless Stifel, its partners, members, directors, officers, employees and agents and each person, if any, who controls Stifel within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any untrue statement or alleged untrue statement of a material fact included in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; provided that (subject to Section 11(d) below) any such settlement is effected with the written consent of the Company, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as incurred (including the reasonable fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, to the extent that any such expense is not paid under (i) or (ii) above, *provided, however*, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission or alleged untrue statement or omission made solely in reliance upon and in conformity with written information furnished to the Company by Stifel expressly for use in the Registration Statement (or any amendment thereto), or in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto).

(b) Stifel Indemnification. Stifel agrees to indemnify and hold harmless the Company and its directors and each officer of the Company who signed the Registration Statement, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company against any and all loss, liability, claim, damage and expense whatsoever, as incurred, described in the indemnity contained in Section 11(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue

statements or omissions, made in the Registration Statement (or any amendments thereto) or in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with information relating to Stifel and furnished to the Company in writing by Stifel expressly for use therein.

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 11 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 11, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 11 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 11 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on written advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on written advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly after the indemnifying party receives a written invoice relating to fees, disbursements and other charges in reasonable detail. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each

indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 11 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party from all liability arising out of such litigation, investigation, proceeding or claim and (2) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

(d) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 11 is applicable in accordance with its terms but for any reason is held to be unavailable from the Company or Stifel, the Company and Stifel will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than Stifel, such as persons who control the Company within the meaning of the Securities Act or the Exchange Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution) to which the Company and Stifel may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and Stifel on the other hand. The relative benefits received by the Company on the one hand and Stifel on the other hand shall be deemed to be in the same proportion as the total Net Proceeds from the sale of the Placement Shares (net of commissions to Stifel but before deducting expenses) received by the Company bear to the total compensation received by Stifel (before deducting expenses) from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and Stifel, on the other hand, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or Stifel, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and Stifel agree that it would not be just and equitable if contributions pursuant to this Section 11(d) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 11(d) shall be deemed to include, for the purpose of this Section 11(d), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 11(c) hereof. Notwithstanding the foregoing provisions of this Section 11(d), Stifel shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of

the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 11(d), any person who controls a party to this Agreement within the meaning of the Securities Act or the Exchange Act, and any officers, directors, partners, employees or agents of Stifel, will have the same rights to contribution as that party, and each officer and director of the Company who signed the Registration Statement will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 11(d), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 11(d) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 11(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 11(c) hereof.

12. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 11 of this Agreement and all representations and warranties of the Company and Stifel herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of Stifel, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

13. Termination.

a. Stifel may terminate this Agreement, by notice to the Company, as hereinafter specified at any time (1) if there has been, since the time of execution of this Agreement or since the date as of which information is given in the Prospectus, any Material Adverse Effect, or any development has occurred and that is reasonably likely to have a Material Adverse Effect or, in the reasonable judgment of Stifel, is material and adverse and makes it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (2) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the reasonable judgment of Stifel, impracticable or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (3) if trading in the Common Stock has been suspended or limited by the Commission or the Exchange, or if trading generally on the Exchange has been suspended or limited, or minimum prices for trading have been fixed on the Exchange, (4) if any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be continuing, (5) if a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing, or (6) if a banking moratorium has

been declared by either U.S. Federal or New York authorities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination. If Stifel elects to terminate this Agreement as provided in this Section 13(a), Stifel shall provide the required notice as specified in Section 14 (Notices).

b. The Company shall have the right, by giving ten (10) days notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

c. Stifel shall have the right, by giving ten (10) days notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

d. Unless earlier terminated pursuant to this Section 13, this Agreement shall automatically terminate upon the issuance and sale of all of the Placement Shares through Stifel on the terms and subject to the conditions set forth herein except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

e. This Agreement shall remain in full force and effect unless terminated pursuant to Sections 13(a), (b), (c), or (d) above or otherwise by mutual agreement of the parties; *provided, however*, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) shall remain in full force and effect. Upon termination of this Agreement, the Company shall not have any liability to Stifel for any discount, commission or other compensation with respect to any Placement Shares not otherwise sold by Stifel under this Agreement.

f. Any termination of this Agreement shall be effective on the date specified in such notice of termination; *provided, however*, that such termination shall not be effective until the close of business on the date of receipt of such notice by Stifel or the Company, as the case may be. If such termination shall occur prior to the Settlement Date for any sale of Placement Shares, such Placement Shares shall settle in accordance with the provisions of this Agreement.

14. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified, and if sent to Stifel, shall be delivered to:

Stifel, Nicolaus & Company, Incorporated
787 Seventh Avenue
New York, New York 10019
Attention: Syndicate Department

with a copy to:

Goodwin Procter LLP
620 Eighth Avenue
New York, NY 10018
Attention: Thomas S. Levato
Telephone: (212) 459-7256
Email: tlevato@goodwinlaw.com

and if to the Company, shall be delivered to:

Conatus Pharmaceuticals Inc.
16745 West Bernardo Drive, Suite 200
San Diego, CA 92127
Attention: Keith W. Marshall, Ph.D.
Telephone: (858) 376-2600
Email: kmarshall@conatuspharma.com

with a copy to:

Latham & Watkins LLP
12670 High Bluff Dr.
San Diego, CA 92130
Attention: Cheston J. Larson
Telephone: (858) 523-5435
Email: cheston.larson@lw.com

Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally, by email, or by verifiable facsimile transmission (with an original to follow) on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) on the next Business Day after timely delivery to a

nationally-recognized overnight courier and (iii) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, "Business Day" shall mean any day on which the Exchange and commercial banks in the City of New York are open for business.

An electronic communication ("Electronic Notice") shall be deemed written notice for purposes of this Section 14 if sent to the electronic mail address specified by the receiving party under separate cover. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives confirmation of receipt by the receiving party. Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("Nonelectronic Notice") which shall be sent to the requesting party within ten (10) days of receipt of the written request for Nonelectronic Notice.

15. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and Stifel and their respective successors and the affiliates, controlling persons, officers and directors referred to in Section 11 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party.

16. Adjustments for Stock Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any share consolidation, stock split, stock dividend, corporate domestication or similar event effected with respect to the Placement Shares.

17. Entire Agreement; Amendment; Severability. This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto) constitutes the entire agreement and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and Stifel. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement.

18. GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL. THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. EACH PARTY HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

19. CONSENT TO JURISDICTION. EACH PARTY HEREBY IRREVOCABLY SUBMITS TO THE NON-EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH ANY TRANSACTION CONTEMPLATED HEREBY, AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT, THAT SUCH SUIT, ACTION OR PROCEEDING IS BROUGHT IN AN INCONVENIENT FORUM OR THAT THE VENUE OF SUCH SUIT, ACTION OR PROCEEDING IS IMPROPER. EACH PARTY HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF (CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED) TO SUCH PARTY AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THIS AGREEMENT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW.

20. Use of Information. Stifel may not use any information gained in connection with this Agreement and the transactions contemplated by this Agreement, including due diligence, to advise any party with respect to transactions not expressly approved by the Company.

21. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by facsimile transmission.

22. Effect of Headings. The section and Exhibit headings herein are for convenience only and shall not affect the construction hereof.

23. Permitted Free Writing Prospectuses.

The Company represents, warrants and agrees that, unless it obtains the prior consent of Stifel, which shall not be unreasonably withheld, conditioned or delayed, and Stifel represents, warrants and agrees that, unless it obtains the prior consent of the Company, which shall not be unreasonably withheld, conditioned or delayed, it has not made and

will not make any offer relating to the Placement Shares that would constitute an Issuer Free Writing Prospectus, or that would otherwise constitute a "free writing prospectus," as defined in Rule 405, required to be filed with the Commission. Any such free writing prospectus consented to by Stifel or by the Company, as the case may be, is hereinafter referred to as a "Permitted Free Writing Prospectus." The Company represents and warrants that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an "issuer free writing prospectus," as defined in Rule 433, and has complied and will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping. For the purposes of clarity, the parties hereto agree that all free writing prospectuses, if any, listed in Exhibit 23 hereto are Permitted Free Writing Prospectuses.

24. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

a. Stifel is acting solely as agent in connection with the public offering of the Placement Shares and in connection with each transaction contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and Stifel, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether or not Stifel has advised or is advising the Company on other matters, and Stifel has no obligation to the Company with respect to the transactions contemplated by this Agreement except the obligations expressly set forth in this Agreement;

b. it is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

c. Stifel has not provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement and it has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

d. it is aware that Stifel and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and Stifel has no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

e. it waives, to the fullest extent permitted by law, any claims it may have against Stifel for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the sale of Placement Shares under this Agreement and agrees that Stifel shall not have any liability (whether direct or indirect, in contract, tort or otherwise) to it in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on its behalf or in right of it or the Company, employees or creditors of Company, other than in respect of Stifel's obligations under this Agreement and to keep information provided by the Company to Stifel and Stifel's counsel confidential to the extent not otherwise publicly-available.

25. Definitions.

As used in this Agreement, the following terms have the respective meanings set forth below:

"Applicable Time" means (i) each Representation Date and (ii) the time of each sale of any Placement Shares pursuant to this Agreement.

"Issuer Free Writing Prospectus" means any "issuer free writing prospectus," as defined in Rule 433, relating to the Placement Shares that (1) is required to be filed with the Commission by the Company, (2) is a "road show" that is a "written communication" within the meaning of Rule 433(d)(8)(i) whether or not required to be filed with the Commission, or (3) is exempt from filing pursuant to Rule 433(d)(5)(i) because it contains a description of the Placement Shares or of the offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company's records pursuant to Rule 433(g) under the Securities Act.

"Rule 164," "Rule 172," "Rule 405," "Rule 415," "Rule 424," "Rule 424(b)," "Rule 430B," and "Rule 433" refer to such rules under the Securities Act.

All references in this Agreement to financial statements and schedules and other information that is "contained," "included" or "stated" in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information that is incorporated by reference in the Registration Statement or the Prospectus, as the case may be.

All references in this Agreement to the Registration Statement, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to EDGAR; all references in this Agreement to any Issuer Free Writing Prospectus (other than any Issuer Free Writing Prospectuses that, pursuant to Rule 433, are not required to be filed with the Commission) shall be deemed to include the copy thereof filed with the Commission pursuant to EDGAR; and all references in this Agreement to "supplements" to the Prospectus shall include, without limitation, any supplements, "wrappers" or similar materials prepared in connection with any offering, sale or private placement of any Placement Shares by Stifel outside of the United States.

[Remainder of the page intentionally left blank]

If the foregoing correctly sets forth the understanding between the Company and Stifel, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and Stifel.

Very truly yours,

CONATUS PHARMACEUTICALS INC.

By: /s/ Steven J. Mento, Ph.D.
Name: Steven J. Mento, Ph.D.
Title: President and Chief Executive Officer

ACCEPTED as of the date first-above written:

STIFEL, NICOLAUS & COMPANY, INCORPORATED

By: /s/ Nicholas Oust
Name: Nicholas Oust
Title: Managing Director

SCHEDULE 1

FORM OF PLACEMENT NOTICE

From: Conatus Pharmaceuticals Inc.

: o T Stifel, Nicolaus & Company, Incorporated

Attention: Syndicate Department

Subject: At Market Issuance--Placement Notice

Ladies and Gentlemen:

Pursuant to the terms and subject to the conditions contained in the At Market Issuance Sales Agreement between Conatus Pharmaceuticals Inc., a Delaware corporation (the "Company"), and Stifel, Nicolaus & Company, Incorporated ("Stifel"), dated August 2, 2018, the Company hereby requests that Stifel sell up to [_____] shares of the Company's Common Stock, $0.0001 par value per share, at a minimum market price of $ per share, during the time period beginning [month, day, time] and ending [month, day, time].

SCHEDULE 2

Compensation

The Company shall pay to Stifel in cash, upon each sale of Placement Shares pursuant to this Agreement, a commission rate equal to up to 3% of the gross sales price per share sold.

SCHEDULE 3

Notice Parties

The Company

Steven J. Mento

Keith W. Marshall, Ph.D.

Shelly Vandertie

Michael Mueller

Cheston J. Larson

Matthew T. Bush

Christopher G. Geissinger

Alaina Ellis

Stifel

Mark Dempster

Melissa Chan

Nicholas Oust

Nathan Thompson

Dan Covatta

SCHEDULE 6(g)

Subsidiaries

None.

EXHIBIT 7(1)

Form of Representation Date Certificate

This Representation Date Certificate (this "Certificate") is executed and delivered in connection with Section 7(1) of the At Market Issuance Sales Agreement (the "Agreement"), dated August 2, 2018, and entered into between Conatus Pharmaceuticals Inc. (the "Company") and Stifel, Nicolaus & Company, Incorporated ("Stifel"). All capitalized terms used but not defined herein shall have the meanings given to such terms in the Agreement.

The Company hereby certifies as follows:

1. As of the date of this Certificate (i) the Registration Statement does not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading and (ii) neither the Registration Statement nor the Prospectus contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading and (iii) no event has occurred as a result of which it is necessary to amend or supplement the Prospectus in order to make the statements therein not untrue or misleading.

2. Each of the representations and warranties of the Company contained in the Agreement were, when originally made, and are, as of the date of this Certificate, true and correct in all material respects.

3. Except as waived by Stifel in writing, each of the covenants required to be performed by the Company in the Agreement on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement, has been duly, timely and fully performed in all material respects and each condition required to be complied with by the Company on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement has been duly, timely and fully complied with in all material respects.

4. Subsequent to the date of the most recent financial statements in the Prospectus, and except as described in the Prospectus, including Incorporated Documents, there has been no Material Adverse Effect.

5. No stop order suspending the effectiveness of the Registration Statement or of any part thereof has been issued, and to the Company's knowledge, no proceedings for that purpose have been instituted or are pending or threatened by any securities or other governmental authority (including, without limitation, the Commission).

6. No order suspending the qualification or registration of the Placement Shares under the securities or Blue Sky laws of any jurisdiction are in effect and no proceeding for such purpose is pending before, or threatened, to the Company's knowledge or in writing by, any securities or other governmental authority (including, without limitation, the Commission).

The undersigned has executed this Officer's Certificate as of the date first written above.

CONATUS PHARMACEUTICALS INC.

By: _____

Name: _____

Title: _____

EXHIBIT 23

Permitted Issuer Free Writing Prospectuses

None.

Exhibit 5.1

12670 High Bluff Drive
San Diego, California 92130
Tel: +1.858.523.5400 Fax: +1.858.523.5450
www.lw.com

LATHAM&WATKINS LLP

FIRM / AFFILIATE OFFICES

Beijing	Moscow
Boston	Munich
Brussels	New York
Century City	Orange County
Chicago	Paris
Dubai	Riyadh
Düsseldorf	Rome
Frankfurt	San Diego
Hamburg	San Francisco
Hong Kong	Seoul
Houston	Shanghai
London	Silicon Valley
Los Angeles	Singapore
Madrid	Tokyo
Milan	Washington, D.C.

August 2, 2018

Conatus Pharmaceuticals Inc.
16745 West Bernardo Drive, Suite 200
San Diego, CA 92127

Re: Registration Statement on Form S-3; Shares of Common Stock, par value $0.0001 per share, having an aggregate offering price of up to $35,000,000

Ladies and Gentlemen:

We have acted as special counsel to Conatus Pharmaceuticals Inc., a Delaware corporation (the "***Company***"), in connection with the sale through Stifel, Nicolaus & Company, Incorporated ("***Stifel***") as the sales agent from time to time by the Company of shares (the "***Shares***") of common stock of the Company, par value $0.0001 per share (the "***Common Stock***"), having an aggregate offering price of up to $35,000,000, to be issued pursuant to a registration statement on Form S-3 filed by the Company with the Securities and Exchange Commission (the "***Commission***") on August 17, 2017 (Registration No. 333-220014) (the "***Registration Statement***"), the base prospectus included in the Registration Statement (the "***Base Prospectus***") and the prospectus supplement dated August 2, 2018 filed with the Commission pursuant to Rule 424(b) of the Securities Act of 1933, as amended (the "***Act")*** (together with the Base Prospectus, the "***Prospectus***"), and that certain At Market Issuance Sales Agreement, dated as of August 2, 2018, by and between the Company and Stifel (the "***Sales Agreement***").

The term "***Shares***" shall include any additional shares of common stock registered by the Company pursuant to Rule 462(b) under the Act, in connection with the offering contemplated by the Registration Statement. This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or the Prospectus, other than as expressly stated herein with respect to the issue of the Shares.

As such counsel, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to the General Corporation Law of the State of Delaware (the "***DGCL***"), and we express no opinion with respect to any other laws.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof, when the Shares shall have been duly registered on the books of the transfer agent and registrar therefor in the name or on behalf of the purchasers, and have been issued by the Company against payment therefor (not less than par value) in the circumstances contemplated by the Sales Agreement, the issue and sale of the Shares will have been duly authorized by all necessary corporate action of the Company, and the Shares will be validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that (i) the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the DGCL and (ii) upon the issue of any of the Shares, the total number of shares of Common Stock issued and outstanding will not exceed the total number of shares of Common Stock that the Company is then authorized to issue under its Amended and Restated Certificate of Incorporation.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Act. We consent to your filing this opinion as an exhibit to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018, filed with the Commission on the date hereof, and to the reference to our firm in the Prospectus under the heading "Legal Matters." In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Latham & Watkins LLP

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Steven J. Mento, Ph.D., certify that:

1. I have reviewed this quarterly report on Form 10-Q of Conatus Pharmaceuticals 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 2, 2018

/s/ Steven J. Mento, Ph.D.
Steven J. Mento, Ph.D.
President and Chief Executive Officer
(principal executive officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Keith W. Marshall, Ph.D., certify that:

1. I have reviewed this quarterly report on Form 10-Q of Conatus Pharmaceuticals 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 2, 2018

/s/ Keith W. Marshall, Ph.D.
Keith W. Marshall, Ph.D.
Executive Vice President, Chief Operating Officer and Chief Financial Officer
(principal financial officer)

Exhibit 32.1

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

In connection with the quarterly report of Conatus Pharmaceuticals Inc. (the "Company") on Form 10-Q for the quarter ended June 30, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Steven J. Mento, Ph.D., President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; 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 2, 2018

/s/ Steven J. Mento, Ph.D.
Steven J. Mento, Ph.D.
President and Chief Executive Officer
(principal executive officer)

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Report or as a separate disclosure document.

Exhibit 32.2

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

In connection with the quarterly report of Conatus Pharmaceuticals Inc. (the "Company") on Form 10-Q for the quarter ended June 30, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Keith W. Marshall, Ph.D., Executive Vice President, Chief Operating Officer and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; 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 2, 2018

/s/ Keith W. Marshall, Ph.D.
Keith W. Marshall, Ph.D.
Executive Vice President, Chief Operating Officer and Chief Financial Officer
(principal financial officer)

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Report or as a separate disclosure document.