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

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**FORM 10-Q**

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(Mark One)

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

For the quarterly period ended March 31, 2015

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 001-36310

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**CONCERT PHARMACEUTICALS, INC.**

(Exact name of registrant as specified in its charter)

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Delaware  
(State or other jurisdiction of  
incorporation or organization)

20-4839882  
(I.R.S. Employer  
Identification No.)

99 Hayden Avenue, Suite 500  
Lexington, Massachusetts  
(Address of principal executive offices)

02421  
(Zip Code)

(781) 860-0045  
(Registrant's telephone number, including area code)

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting 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

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

The number of shares outstanding of the registrant’s common stock as of May 6, 2015: 21,721,565

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**CONCERT PHARMACEUTICALS, INC.**  
**CONDENSED CONSOLIDATED BALANCE SHEETS (UNAUDITED)**  
**(Amounts in thousands, except share and per share data)**

	<u>March 31,</u> <u>2015</u>	<u>December 31,</u> <u>2014</u>
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 63,816	\$ 13,396
Investments, available for sale	49,251	65,836
Interest receivable	198	262
Accounts receivable	129	1,021
Prepaid expenses and other current assets	<u>2,241</u>	<u>1,205</u>
Total current assets	115,635	81,720
Property and equipment, net	2,283	2,284
Restricted cash	400	400
Other assets	42	50
Total assets	<u>\$ 118,360</u>	<u>\$ 84,454</u>
<b>Liabilities and stockholders' equity</b>		
Current liabilities:		
Accounts payable	\$ 1,004	\$ 560
Accrued expenses and other liabilities	2,704	5,002
Deferred revenue, current portion	5,809	5,955
Loan payable, net of discount	<u>5,037</u>	<u>7,101</u>
Total current liabilities	14,554	18,618
Deferred revenue, net of current portion	9,259	9,866
Deferred lease incentive, net of current portion	810	888
Deferred rent, net of current portion	<u>247</u>	<u>257</u>
Total liabilities	24,870	29,629
Commitments		
Stockholders' equity:		
Preferred stock, \$0.001 par value per share; 5,000,000 shares authorized, no shares issued and outstanding in 2015 and 2014, respectively	—	—
Common stock, \$0.001 par value per share; 100,000,000 shares authorized, 21,701,480 and 18,234,068 shares issued and outstanding in 2015 and 2014, respectively	22	18
Additional paid-in capital	247,800	200,157
Accumulated other comprehensive income (loss)	6	(14)
Accumulated deficit	<u>(154,338)</u>	<u>(145,336)</u>
Total stockholders' equity	93,490	54,825
Total liabilities and stockholders' equity	<u>\$ 118,360</u>	<u>\$ 84,454</u>

See accompanying notes.

## CONCERT PHARMACEUTICALS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS  
(UNAUDITED)

(Amounts in thousands, except per share data)

	Three Months Ended	
	March 31,	
	2015	2014
Revenue:		
License and research and development revenue	\$ 1,306	\$ 1,613
Total revenue	<u>1,306</u>	<u>1,613</u>
Operating expenses:		
Research and development	6,944	5,594
General and administrative	<u>3,233</u>	<u>2,538</u>
Total operating expenses	<u>10,177</u>	<u>8,132</u>
Loss from operations	(8,871)	(6,519)
Investment income	17	4
Interest and other expense	(148)	(435)
Net loss	<u>\$ (9,002)</u>	<u>\$ (6,950)</u>
Other comprehensive income (loss):		
Unrealized gain (loss) on investments	20	(8)
Comprehensive loss	<u>\$ (8,982)</u>	<u>\$ (6,958)</u>
Reconciliation of net loss to net loss applicable to common stockholders:		
Net loss	\$ (9,002)	\$ (6,950)
Accretion on redeemable convertible preferred stock	—	(55)
Net loss applicable to common stockholders—basic and diluted	<u>\$ (9,002)</u>	<u>\$ (7,005)</u>
Net loss per share applicable to common stockholders—basic and diluted	<u>\$ (0.48)</u>	<u>\$ (0.76)</u>
Weighted-average number of common shares used in net loss per share applicable to common stockholders—basic and diluted	18,726	9,188

See accompanying notes.

**CONCERT PHARMACEUTICALS, INC.**  
**CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (UNAUDITED)**

(Amounts in thousands)

	Three Months Ended March 31,	
	2015	2014
<b>Operating activities</b>		
Net loss	\$ (9,002)	\$ (6,950)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	183	326
Stock-based compensation expense	646	210
Accretion of premiums and discounts on investments	181	84
Amortization of discount on loan payable	25	24
Amortization of deferred financing costs	9	9
Re-measurement of warrant to purchase redeemable securities	—	117
Amortization of deferred lease incentive	(76)	(128)
Changes in operating assets and liabilities:		
Accounts receivable	898	102
Interest receivable	64	(225)
Prepaid expenses and other current assets	(1,045)	(1,126)
Other assets	8	98
Accounts payable	444	321
Accrued expenses and other liabilities	(2,598)	42
Deferred rent	(20)	(59)
Deferred revenue	(753)	(940)
Net cash used in operating activities	(11,036)	(8,095)
<b>Investing activities</b>		
Purchases of property and equipment	(150)	(100)
Purchases of investments	(5,576)	(51,432)
Maturities of investments	22,000	6,000
Net cash provided by (used in) investing activities	16,274	(45,532)
<b>Financing activities</b>		
Principal payments on loan payable	(2,089)	(1,919)
Repayment of leasehold improvement loan	—	(83)
Proceeds from sale of common stock, net of underwriting discounts and commissions	46,995	86,579
Proceeds from exercise of stock options	310	105
Payment of public offering costs	(34)	(1,042)
Net cash provided by financing activities	45,182	83,640
Net increase in cash and cash equivalents	50,420	30,013
Cash and cash equivalents at beginning of period	13,396	9,638
Cash and cash equivalents at end of period	<u>\$ 63,816</u>	<u>\$ 39,651</u>
Supplemental cash flow information:		
Cash paid for interest	\$ 138	\$ 308
Property and equipment included in accrued expenses and other liabilities	\$ 92	\$ —
Public offering costs incurred but unpaid at period end	\$ 276	\$ 394

See accompanying notes.

**CONCERT PHARMACEUTICALS, INC.**

**NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)**

**1. Nature of Business**

Concert Pharmaceuticals, Inc., or Concert or the Company, was incorporated on April 12, 2006 as a Delaware corporation with operations based in Lexington, Massachusetts. The Company is a clinical stage biopharmaceutical company that applies its extensive knowledge of deuterium chemistry to discover and develop novel small molecule drugs. The Company's approach starts with approved drugs, advanced clinical candidates or previously studied compounds that the Company believes can be improved with deuterium substitution to provide better pharmacokinetic or metabolic properties, enhancing clinical safety, tolerability or efficacy. The Company believes this approach may enable drug discovery and clinical development that is more efficient and less expensive than conventional small molecule drug research and development. The Company's pipeline includes multiple clinical-stage candidates and a number of preclinical compounds that it is currently assessing.

In March 2015, the Company sold 3,300,000 shares of common stock in a public offering at a price to the public of \$15.15 per share, resulting in net proceeds to the Company of approximately \$46.7 million after deducting underwriting discounts and commissions and offering expenses.

The Company had cash and cash equivalents and investments of \$113.1 million at March 31, 2015. The Company believes that its cash and cash equivalents and investments at March 31, 2015 will be sufficient to allow the Company to fund its current operating plan for at least the next twelve months. The Company may pursue additional cash resources through public or private financings and establish collaborations with or license its technology to other companies.

Unless otherwise indicated, all amounts are in thousands except share and per share amounts.

**2. Basis of Presentation and Significant Accounting Policies**

*Basis of Presentation*

The accompanying condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. In the opinion of management, all adjustments, consisting of normal recurring accruals and revisions of estimates, considered necessary for a fair presentation of the condensed consolidated financial statements have been included. Interim results for the three months ended March 31, 2015 are not necessarily indicative of the results that may be expected for the fiscal year ending December 31, 2015 or any other future period.

The accompanying condensed consolidated financial statements reflect the accounts of Concert and its subsidiary. All intercompany transactions between the Company and its subsidiary have been eliminated. Management has determined that the Company operates in one segment: the development of pharmaceutical products on its own behalf or in collaboration with others. The information included in this quarterly report on Form 10-Q should be read in conjunction with the Company's consolidated financial statements and the accompanying notes included in the Company's Annual Report on Form 10-K for the year ended December 31, 2014 filed with the SEC on March 2, 2015.

*Use of Estimates and Summary of Significant Accounting Policies*

The preparation of condensed consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that can affect the reported amounts of assets, liabilities, equity, revenue and expenses and the disclosure of contingent assets and liabilities. In preparing the condensed consolidated financial statements, management used estimates in the following areas, among others: revenue recognition for multiple-element revenue arrangements, stock-based compensation expense, accrued expenses and income taxes. Actual results could differ from those estimates.

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There have been no material changes to the significant accounting policies previously disclosed in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014.

### *Recent Accounting Pronouncements*

In May 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, or ASU 2014-09, which stipulates that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve this core principle, ASU 2014-09 provides that an entity should apply the following steps: (1) identify the contract(s) with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract and (5) recognize revenue when (or as) the entity satisfies a performance obligation. This update will be effective for the Company beginning in the first quarter of fiscal 2017 with early adoption not permitted. The Company is currently assessing the impact of this ASU on its financial statements.

In August 2014, the FASB issued ASU No. 2014-15, *Disclosure of Uncertainties About an Entity's Ability to Continue as a Going Concern*, or ASU 2014-15. ASU 2014-15 amends FASB Accounting Standards Codification 205-40, Presentation of Financial Statements – Going Concern, by providing guidance on determining when and how reporting entities must disclose going-concern uncertainties in their financial statements, including requiring management to perform interim and annual assessments of an entity's ability to continue as a going concern within one year of the date of issuance of the entity's financial statements and providing certain disclosures if there is substantial doubt about the entity's ability to continue as a going concern. ASU 2014-15 will be effective for the Company's fiscal 2016 and for interim periods beginning in the first quarter of fiscal 2017. The Company is still evaluating the impact of this ASU on its financial statement disclosures.

### **3. Fair Value Measurements**

The Company measures certain financial assets and liabilities at fair value on a recurring basis (principally cash equivalents and investments) that have been classified as Level 1, 2 or 3 within the fair value hierarchy as described below. Fair values determined by Level 1 inputs utilize quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access. Fair values determined by Level 2 inputs utilize data points that are observable, such as quoted prices, interest rates and yield curves. Fair values determined by Level 3 inputs utilize unobservable data points for the asset or liability. The Company's investments in money market funds, U.S. treasury obligations and government agency securities have been classified as Level 1 because their fair values are based on quoted market prices.

As of March 31, 2015 and December 31, 2014, the Company's financial assets and liabilities recognized at fair value consisted of the following:

	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
<b>March 31, 2015</b>				
Money market funds, included in cash equivalents	\$ 62,274	\$ —	\$ —	\$ 62,274
Investments, available for sale:				
U.S. Treasury obligations	5,802	—	—	5,802
Government agency securities	43,449	—	—	43,449
Total	<u>\$111,525</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$111,525</u>

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	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
<b>December 31, 2014</b>				
Money market funds, included in cash equivalents	\$ 11,904	\$ —	\$ —	\$ 11,904
Investments, available for sale:				
U.S. Treasury obligations	12,035	—	—	12,035
Government agency securities	53,801	—	—	53,801
Total	<u>\$ 77,740</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 77,740</u>

The carrying amount of financial instruments not carried at fair value, including the loan payable, approximate fair value. The carrying value of the Company's loan payable approximated fair value because the interest rate yields for the loan approximate current market yields. The disclosed fair value of the Company's loan payable is a Level 3 liability within the fair value hierarchy.

**4. Cash, Cash Equivalents and Investments, Available for Sale**

Cash equivalents include all highly liquid investments maturing within 90 days from the date of purchase. Investments consist of securities with original maturities greater than 90 days when purchased. The Company classifies these investments as available-for-sale and records them at fair value in the accompanying condensed consolidated balance sheets. Unrealized gains or losses are included in accumulated other comprehensive income (loss). Premiums or discounts from par value are amortized to investment income over the life of the underlying investment.

Cash, cash equivalents and investments, available for sale included the following at March 31, 2015 and December 31, 2014:

	<u>Average maturity</u>	<u>Amortized cost</u>	<u>Unrealized gains</u>	<u>Unrealized losses</u>	<u>Fair value</u>
<b>March 31, 2015</b>					
Cash		\$ 1,542	\$ —	\$ —	\$ 1,542
Money market funds		62,274	—	—	62,274
Cash and cash equivalents		<u>\$ 63,816</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$63,816</u>
U.S. Treasury obligations	263 days	\$ 5,803	\$ —	\$ (1)	\$ 5,802
Government agency securities	119 days	43,442	7	—	43,449
Investments, available for sale		<u>\$ 49,245</u>	<u>\$ 7</u>	<u>\$ (1)</u>	<u>\$49,251</u>
<b>December 31, 2014</b>					
Cash		\$ 1,492	\$ —	\$ —	\$ 1,492
Money market funds		11,904	—	—	11,904
Cash and cash equivalents		<u>\$ 13,396</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$13,396</u>
U.S. Treasury obligations	171 days	\$ 12,037	\$ (2)	\$ —	\$12,035
Government agency securities	194 days	53,813	3	(15)	53,801
Investments, available for sale		<u>\$ 65,850</u>	<u>\$ 1</u>	<u>\$ (15)</u>	<u>\$65,836</u>

Although available to be sold to meet operating needs or otherwise, securities are generally held through maturity. The cost of securities sold is determined based on the specific identification method for purposes of recording realized gains and losses. During 2015 and 2014, there were no realized gains or losses on sales of investments, and no investments were adjusted for other than temporary declines in fair value.

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**5. Accrued Expenses and Other Liabilities**

Accrued expenses and other liabilities consisted of the following:

	March 31, 2015	December 31, 2014
Accrued professional fees and other	\$ 959	\$ 916
Employee compensation and benefits	494	1,606
Research and development expenses	883	2,104
Deferred lease incentive, current portion	310	308
Deferred rent, current portion	58	68
	<u>\$ 2,704</u>	<u>\$ 5,002</u>

**6. Income Taxes**

Deferred tax assets and deferred tax liabilities are recognized based on temporary differences between the financial reporting and tax basis of assets and liabilities using statutory rates. A valuation allowance is recorded against deferred tax assets if it is more likely than not that some or all of the deferred tax assets will not be realized.

The Company records a provision or benefit for income taxes on ordinary pre-tax income or loss based on its estimated effective tax rate for the year. As of March 31, 2015, the Company forecast an ordinary pre-tax loss for the year ended December 31, 2015 and, since it maintains a full valuation allowance on its deferred tax assets, the Company did not record an income tax benefit for the three months ended March 31, 2015.

To the extent new information becomes available, the Company may revise its forecast of ordinary pre-tax income or loss, and therefore the estimated effective tax rate, in future periods. The potential effect of a non-recognized subsequent event is considered in the Company's estimated effective tax rate in the period in which the event occurs.

The Company's ability to use its operating loss carryforwards and tax credits to offset future taxable income is subject to restrictions under Sections 382 and 383 of the United States Internal Revenue Code (the "Internal Revenue Code"). Net operating loss and tax credit carryforwards may become subject to an annual limitation in the event of certain cumulative changes in the ownership interest of significant shareholders over a three-year period in excess of 50 percent, as defined under Sections 382 and 383 of the Internal Revenue Code. Such changes would limit the Company's use of its operating loss carryforwards and tax credits. In such a situation, the Company may be required to pay income taxes, even though significant operating loss carryforwards and tax credits exist. The Company is currently in the process of evaluating whether any such ownership changes have occurred.

**7. Collaborations**

*Celgene*

In April 2013, the Company entered into a master development and license agreement with Celgene Corporation and Celgene International Sàrl, referred to together as Celgene, which is primarily focused on the research, development and commercialization of specified deuterated compounds targeting inflammation or cancer. The collaboration is initially focused on one program, but has the potential to encompass up to four programs.

For the initial program, which is referred to as CTP-730, the Company granted Celgene an exclusive worldwide license to develop, manufacture and commercialize deuterated analogs of a selected non-deuterated compound and certain close chemical derivatives thereof. The Company further granted Celgene licenses with respect to two additional programs and an option with respect to a third additional program. The Company and Celgene have agreed on the non-deuterated compounds for each of the two additional license programs. For the option program, Celgene may select the non-deuterated compound at a later time, which, unless otherwise agreed by the Company, will be limited to a compound for which Celgene possesses exclusive rights. With respect to the two additional license programs, the Company granted Celgene an upfront exclusive worldwide license to develop, manufacture and commercialize deuterated products that contain deuterated analogs of the agreed non-deuterated compounds. Celgene is restricted from utilizing their research, development and commercialization rights under each of these upfront licenses, unless, within seven years after the effective date of the agreement, Celgene pays the Company a license exercise fee. If Celgene does not elect to pay the license exercise fee during the seven year period, the license will expire. With respect to the option program, once a compound is selected, Celgene may exercise its

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option by paying the Company an option exercise fee within seven years of the effective date of the agreement, and upon Celgene's exercise of the option the Company will grant to Celgene an exclusive worldwide license to develop, manufacture and commercialize deuterated products that contain deuterated analogs of the selected non-deuterated compound.

The Company is responsible for conducting and funding research and early development activities for the initial program at its own expense pursuant to mutually agreed upon development plans. This includes the completion of single and multiple ascending dose Phase 1 clinical trials and any mutually agreed upon additional Phase 1 clinical trials, as set forth in the development plan and approved by the joint steering committee, or JSC, for the collaboration.

Under the terms of the agreement, the Company received a non-refundable upfront payment of \$35.0 million. In addition, the Company is eligible to earn up to \$23.0 million in development milestone payments, including \$8.0 million related to the completion of a Phase 1 clinical trial, up to \$247.5 million in regulatory milestone payments and up to \$50.0 million in sales-based milestone payments related to products within the initial program. The next milestone payment the Company may be entitled to receive under the initial program is \$8.0 million related to the completion of Phase 1 clinical trials of CTP-730. If Celgene exercises its rights with respect to either of the two additional license programs, the Company will receive a license exercise fee for the applicable program of \$30.0 million and will also be eligible to earn up to \$23.0 million in development milestone payments and up to \$247.5 million in regulatory milestone payments for that program. Additionally, with respect to one of the additional license programs, the Company is eligible to receive up to \$100.0 million in milestone payments based on net sales of products, and with respect to the other additional license program, the Company is eligible to receive up to \$50.0 million in milestone payments based on net sales of products. If Celgene exercises its option with respect to the option program, in respect of a compound to be identified at a later time, the Company will receive an option exercise fee of \$10.0 million and will be eligible to earn up to \$23.0 million in development milestone payments and up to \$247.5 million in regulatory milestone payments.

In addition, with respect to each program, Celgene is required to pay the Company royalties on worldwide net sales of each licensed product at defined percentages ranging from the mid-single digits to low double digits below 20%. The royalty term for each licensed product in each country is the period commencing with first commercial sale of the applicable licensed product in the applicable country and ending on the latest of expiration of specified patent coverage, expiration of regulatory exclusivity or 10 years following commercial launch. The royalty rate is reduced on a country-by-country basis during any period within the royalty term when there is no patent claim or regulatory exclusivity covering the licensed product in the particular country.

The Company's arrangement with Celgene contains the following deliverables: (i) an exclusive worldwide license to develop, manufacture and commercialize deuterated analogs of a selected compound related to the initial program, or the License Deliverable, (ii) obligations to perform research and development services associated with the initial program, or the R&D Services Deliverable, (iii) obligation to supply preclinical and clinical trial material related to the initial program, or the Supply Deliverable, (iv) participation on the JSC during the term of the initial program, or the JSC Deliverable, (v) significant and incremental discount related to the first additional license program for which the non-deuterated compound has been selected, or the First Discount Deliverable and (vi) significant and incremental discount related to the second additional license program for which the non-deuterated compound has been selected, or the Second Discount Deliverable.

Allocable arrangement consideration at inception was limited to the \$35.0 million non-refundable upfront payment. The Company allocated the arrangement consideration for the collaboration among the separate units of accounting using the relative selling price method as follows: (i) \$17.0 million to the License Deliverable; (ii) \$8.7 million to the R&D Services Deliverable for the initial program; (iii) \$3.2 million to the Supply Deliverable for the initial program; (iv) \$0.1 million to the JSC Deliverable for the initial program; (v) \$3.0 million to the First Discount Deliverable for the first additional program; and (vi) \$3.0 million to the Second Discount Deliverable for the second additional program.

The arrangement consideration allocated to the License Deliverable was recognized upon delivery. Amounts allocated to the R&D Services Deliverable and Supply Deliverable are recognized under the proportional performance method over the expected period of performance, or 39 months. The amount allocated to the JSC Deliverable is recognized ratably over the expected period of performance, or 39 months. Amounts allocated to

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the First Discount Deliverable and the Second Discount Deliverable are deferred and will be recognized at the earlier of when the associated license rights are exercised and licenses are delivered or upon lapsing of the underlying right, if the respective right expires unexercised. The Company reassesses the estimated periods of performance for each unit of accounting at the end of each reporting period.

During the three months ended March 31, 2015 and 2014, the Company recognized revenue of \$0.6 million and \$0.4 million for the R&D Services Deliverable and \$0.1 million and \$0.5 million for the Supply Deliverable, respectively. The revenue was classified as license and research and development revenue in the accompanying condensed consolidated statement of operations and comprehensive loss.

As of March 31, 2015, there was \$12.2 million of deferred revenue related to the Company's collaboration with Celgene, \$5.7 million of which was classified as current and \$6.5 million of which was classified as noncurrent, in the accompanying condensed consolidated balance sheet.

### *Jazz Pharmaceuticals*

In February 2013, the Company entered into a development and license agreement with Jazz Pharmaceuticals, Inc., or Jazz Pharmaceuticals, to research, develop and commercialize products containing a deuterated sodium oxybate analog, or D-SXB. The Company is initially focusing on one analog, designated as JZP-386. Under the terms of the agreement, the Company granted Jazz Pharmaceuticals an exclusive, worldwide, royalty-bearing license under intellectual property controlled by the Company to develop, manufacture and commercialize D-SXB products including, but not limited to, JZP-386.

The Company, together with Jazz Pharmaceuticals, is conducting certain development activities for Phase 1 clinical trials with respect to JZP-386 pursuant to an agreed upon development plan. The Company is responsible under the development plan for conducting the Phase 1 clinical trials with respect to JZP-386. Thereafter, the Company's obligations to conduct further development activities are subject to mutual agreement. Jazz Pharmaceuticals has assumed all manufacturing responsibilities. Pursuant to the agreement, the Company's costs for activities under the development plan, including pass-through costs and the costs of the Company's employees' time at a rate per full-time equivalent year of its employees' time, which the Company and Jazz Pharmaceuticals agreed to, are reimbursed by Jazz Pharmaceuticals, except for the costs of a Phase 1 clinical trial that was initiated in the first quarter of 2015, which will be shared between Jazz Pharmaceuticals and the Company. This reimbursement is subject to limitations specified in the agreement, including adherence within a particular percentage to the development budget. Under the agreement, Jazz Pharmaceuticals is subject to specified diligence obligations regarding the development and commercialization of licensed products.

Under the agreement, the Company received a non-refundable upfront payment of \$4.0 million and is eligible to earn an aggregate of up to \$8.0 million in development milestone payments, up to \$35.0 million in regulatory milestone payments and up to \$70.0 million in sales-based milestone payments based on net product sales of licensed products. The next milestone payment that the Company may be entitled to receive is \$4.0 million related to initiation of the first Phase 2 clinical trial of JZP-386.

In addition, Jazz Pharmaceuticals is required to pay the Company royalties at defined percentages ranging from the mid-single digits to low double digits below 20% on worldwide net sales of licensed products. The royalty term for each licensed product in each country is the period commencing with first commercial sale of the applicable licensed product in the applicable country and ending on the later of the expiration of specified patent coverage or 10 years following commercial launch. The royalty rate is lowered, on a country-by-country basis, under certain circumstances as specified in the agreement.

The Company determined that there were three deliverables under the agreement: (i) an exclusive, royalty-bearing, sub-licensable worldwide license to develop and commercialize D-SXB compounds, or the License Deliverable, (ii) participation on a joint steering committee, or the JSC Deliverable, and (iii) a deliverable to direct external patent activities and bear a portion of the external patent fees, or the Patent Support Deliverable.

The Company allocated arrangement consideration of \$3.7 million to the License Deliverable, \$0.1 million to the JSC Deliverable and \$0.2 million to the Patent Support Deliverable. The Company recognized the arrangement consideration allocated to the License Deliverable upon delivery and will recognize revenue related to the JSC Deliverable and the Patent Support Deliverable over the respective periods of performance, which are each estimated to be 46 months.

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For the three months ended March 31, 2015 and 2014, the Company recognized revenue of \$0.4 million and \$0.6 million related to the performance of development support services, respectively.

### *Avanir*

In February 2012, the Company entered into a development and license agreement with Avanir Pharmaceuticals, Inc., or Avanir, under which the Company granted Avanir an exclusive worldwide license to develop, manufacture and commercialize deuterated dextromethorphan containing products. Avanir is initially focused on developing AVP-786, which is a combination of a deuterated dextromethorphan analog and an ultra-low dose of quinidine, for the treatment of neurologic and psychiatric disorders. Subsequent to the Company's agreement, Avanir was acquired by Otsuka Pharmaceutical Co., Ltd. and it is now a wholly owned subsidiary of Otsuka America, Inc.

Under the agreement, the Company received a non-refundable upfront payment of \$2.0 million and has received milestone payments of \$4.0 million. The Company is also eligible to earn, with respect to licensed products comprising a combination of deuterated dextromethorphan and quinidine, an additional \$2.0 million development milestone payment related to initiation of dosing in a Phase 3 clinical trial for AVP-786, up to \$37.0 million in regulatory and commercial launch milestone payments and up to \$125.0 million in sales-based milestone payments. The next milestone that the Company may be entitled to earn is \$2.0 million related to the initiation of dosing in a Phase 3 clinical trial for AVP-786. In addition, the Company is eligible for higher development milestones, up to an additional \$43.0 million, for licensed products that do not require quinidine. Avanir is currently developing deuterated dextromethorphan only in combination with quinidine.

Avanir also is required to pay the Company royalties at defined percentages ranging from the mid-single digits to low double digits below 20% on net sales of licensed products on a country-by-country basis. The royalty term for each licensed product in each country is the period commencing with first commercial sale of the applicable licensed product in the applicable country and ending on the later of expiration of specified patent coverage or 10 years following commercial launch. The royalty rate is reduced, on a country-by-country basis, during any period within the royalty term when there is no patent claim covering the licensed product in the particular country.

The Company determined that the deliverables under the agreement were the exclusive, royalty-bearing sub-licensable license to deuterated dextromethorphan delivered at the inception of the arrangement as well as participation on a joint steering committee through a first investigational new drug application filing. The Company allocated arrangement consideration of \$2.0 million to the license and an insignificant amount to the Company's participation on the joint steering committee. Accordingly, the Company recognized the \$2.0 million non-refundable upfront fee as revenue upon delivery of the deuterated dextromethorphan license in March 2012.

Since June 2012, Avanir has elected to conduct all research and development activities, including manufacturing activities; however, the Company has continued to receive intellectual property cost reimbursements. The Company recognized \$133 thousand and \$61 thousand for the three months ended March 31, 2015 and 2014, respectively, for intellectual property cost reimbursements, the cost of which was recorded within general and administrative expense.

### *GSK*

In May 2009, the Company entered into a research and development collaboration and license agreement with Glaxo Group Limited, or GSK, to research, develop and commercialize multiple products containing deuterated compounds, including CTP-499. The agreement with GSK, as subsequently amended, expired in May 2012 after GSK opted out of further development under the agreement and made a \$2.75 million payment to the Company. The rights to the product candidates developed under the agreement have reverted to the Company and it is free to pursue them without further obligation to GSK other than to repay GSK an amount of up to \$2.75 million if the Company commercializes CTP-499 or if, prior to a specified date in 2018, the Company re-licenses or transfers rights to CTP-499 to a third party. The \$2.75 million payment was classified as deferred revenue and will not be recognized as revenue until all repayment obligations lapse.

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## 8. Patent Assignment

In September 2011, the Company entered into a patent assignment agreement with Auspex Pharmaceuticals, Inc., or Auspex, pursuant to which the Company assigned to Auspex a U.S. patent application relating to deuterated pifrenidone analogs. Under the terms of the agreement, the Company is eligible to receive certain royalty payments, or the Royalty Payments, equal to a percentage in the low single digits of net sales in the United States invoiced by Auspex or any of its affiliates, with respect to certain pharmaceutical products containing a deuterated pifrenidone analog. The patent assignment agreement further provides that if Auspex sells to another party all of its U.S. rights to certain deuterated pifrenidone products, or if Auspex grants to another party a license to sell certain deuterated pifrenidone products in the United States, the Company will receive an amount, or the Sublicense/Sale Payments, equal to a percentage in the teens of any proceeds Auspex receives therefrom that are attributable to the rights to such deuterated pifrenidone products in the United States. In addition, the patent assignment agreement provides that if Auspex is acquired in a change in control transaction at any time while it, or any of its affiliates, own certain patents or patent applications related to deuterated pifrenidone, the Company will receive within a specified period following the closing of the transaction 1.44% of any proceeds payable as consideration for the change in control transaction, including any amounts paid to stockholders and certain equity holders of Auspex. Any such change-in-control payment to the Company is credited to Auspex as a deduction against any future Royalty Payments and Sublicense/Sale Payments that may become due under the agreement, such that Auspex will not be required to make further Royalty Payments and Sublicense/Sale Payments to the Company until the aggregate amount of such Royalty Payments and Sublicense/Sale Payments exceeds the amount of such change-in-control payment. The patent assignment agreement expires upon the earlier to occur of (1) receipt by the Company of the final Sublicense/Sale Payment arising from (a) the sale of Auspex's U.S. rights to certain deuterated pifrenidone products or (b) Auspex's grant of an exclusive license to sell certain deuterated pifrenidone products in the United States in all indications and fields, or (2) the expiration of the last claim owned by Auspex or any of its affiliates in certain patents or patent applications related to deuterated pifrenidone analogs.

## 9. Stock-Based Compensation

The Company's equity incentive plans provide for the issuance of a variety of stock-based awards, including incentive stock options, nonstatutory stock options and awards of stock, to directors, officers and employees of the Company, as well as consultants and advisors to the Company. To date, the Company has granted awards solely in the form of stock options, which have generally been granted with an exercise price equal to the fair value of the underlying common stock on the date of grant, expire no later than ten years from the date of grant and vest over various periods not exceeding four years.

Effective January 1, 2015, an additional 729,363 shares were added to the Company's 2014 Stock Incentive Plan, or the 2014 Plan, for future issuance pursuant to the terms of the 2014 Plan. As of March 31, 2015, there were 1,713,317 shares of common stock available for future award grants under the 2014 Plan.

Total stock-based compensation expense related to all stock-based awards recognized in the condensed consolidated statements of operations and comprehensive loss consisted of:

	Three Months Ended	
	March 31,	
	2015	2014
Research and development	\$ 325	\$ 90
General and administrative	321	120
Total stock-based compensation expense	<u>\$ 646</u>	<u>\$ 210</u>

### *Stock Options*

The weighted-average fair value of options granted during the three months ended March 31, 2015 and 2014, based on fair values estimated as of the applicable grant dates using the Black-Scholes-Merton option pricing model, was \$9.34 and \$8.79 per option share, respectively.

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For the three months ended March 31, 2015 and 2014, the fair values of options granted were estimated using the following weighted-average assumptions:

	Three Months Ended March 31,	
	2015	2014
Expected volatility	73.11%	68.95%
Expected term	6.0 years	6.0 years
Risk-free interest rate	1.54%	2.02%
Expected dividend yield	0.00%	0.00%

For the three months ended March 31, 2015 and 2014, expected volatility was estimated using the historical volatility of the common stock of a group of similar companies that were publicly traded. The Company will continue to apply this process until a sufficient amount of historical information regarding the volatility of its own stock price becomes available.

During the three months ended March 31, 2015 and 2014, the total intrinsic value of stock options exercised was \$2.1 million and \$0.2 million, respectively. The total grant date fair value of stock options that vested during the three months ended March 31, 2015 and 2014 was \$0.4 million and \$0.2 million, respectively.

The following is a summary of stock option activity for the three months ended March 31, 2015:

	Number of Option Shares	Weighted Average Exercise Price per Share	Weighted Average Remaining Contractual Term (In years)	Aggregate Intrinsic Value (In thousands)
Outstanding at December 31, 2014	2,688,937	\$ 6.04		
Granted	152,000	\$ 14.46		
Exercised	(167,412)	\$ 1.88		
Outstanding at March 31, 2015	<u>2,673,525</u>	\$ 6.78	6.88	\$ 22,380
Exercisable at March 31, 2015	<u>1,319,996</u>	\$ 3.75	4.64	\$ 15,044
Vested and expected to vest at March 31, 2015 (1)	<u>2,578,853</u>	\$ 6.65	6.80	\$ 21,908

- (1) This represents the number of vested stock option shares as of March 31, 2015, plus the number of unvested stock option shares that the Company estimated as of March 31, 2015 would vest, based on the unvested stock option shares at March 31, 2015 and an estimated forfeiture rate of 5%.

As of March 31, 2015, there was \$7.9 million of unrecognized compensation cost related to stock options that are expected to vest. These costs are expected to be recognized over a weighted average remaining vesting period of 3.0 years.

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**10. Loan Payable**

On December 22, 2011, the Company entered into a Loan and Security Agreement, or the Loan and Security Agreement, with Hercules Technology Growth Capital, Inc., or Hercules. The Loan and Security Agreement provides for aggregate advances of up to \$20 million in two tranches. Under the first tranche, the Company obtained an advance on December 22, 2011 totaling \$7.5 million, or the December 2011 Advance. Under the second tranche, the Company obtained an advance on March 29, 2012 totaling \$12.5 million, or the March 2012 Advance. The Company incurred \$0.2 million in loan issuance costs paid directly to the lenders, which have been offset against the loan proceeds as a loan discount.

Each advance made under the Loan and Security Agreement bears interest at a variable rate of the greater of 8.5% and an amount equal to 8.5% plus the prime rate of interest minus 5.25%, provided however, that the per annum interest rate shall not exceed 11%. Through March 31, 2015, each of the December 2011 Advance and the March 2012 Advance had an interest rate of 8.5%. Interest-only payments were due monthly on the first day of each month beginning the month after the date of the respective advance until April 30, 2013. Thereafter the aggregate principal balance outstanding became payable in 30 equal monthly installments of principal and interest beginning May 1, 2013 and continuing through the maturity date of October 1, 2015.

The loan is collateralized by a blanket lien on all of the Company's corporate assets, excluding intellectual property, and by a negative pledge on its intellectual property. The Loan and Security Agreement contains default provisions that include the occurrence of a material adverse effect, as defined therein, that would entitle the lender to declare all principal, interest and other amounts owed by the Company under the Loan and Security Agreement immediately due and payable. The Company does not believe that any events have occurred that could reasonably be deemed to have a material adverse effect. The Company does not have any financial covenants under the Loan and Security Agreement.

Future minimum payments, which include principal and interest due under the Loan and Security Agreement, are \$5.2 million, in the aggregate, for the remainder of 2015.

**11. Earnings (Loss) Per Share**

Basic net earnings (loss) per common share is calculated by dividing net earnings (loss) allocable to common stockholders, computed as the sum of net earnings (loss) and accretion on the Company's redeemable convertible preferred stock, by the weighted-average common shares outstanding during the period, without consideration of common stock equivalents. Diluted net loss per share is calculated by adjusting the weighted-average shares outstanding for the dilutive effect of common stock equivalents outstanding for the period. For purposes of the diluted net loss per share calculation, stock options and warrants are considered to be common stock equivalents, but are excluded from the calculation of diluted net loss per share because their effect would be anti-dilutive. Therefore, basic and diluted net loss per share applicable to common stockholders was the same for all periods presented.

Upon closing of the Company's IPO in February 2014, the Company sold 6,649,690 shares of common stock and issued an additional 9,919,821 shares of common stock in connection with the automatic conversion of its redeemable convertible preferred stock. Additionally, the Company sold an additional 3,300,000 shares of common stock in connection with its public offering in March 2015.

The following potential common stock equivalents were not included in the calculation of diluted net loss per common share because the inclusion thereof would be antidilutive (in thousands):

	<u>As of March 31,</u>	
	<u>2015</u>	<u>2014</u>
Warrant	71	71
Outstanding stock options	2,674	2,037
Total	<u>2,745</u>	<u>2,108</u>

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**12. Equity Financing**

In March 2015, the Company sold 3,300,000 shares of common stock in a public offering at a price to the public of \$15.15 per share. The shares included in the Company's offering were registered under the Securities Act of 1933, as amended, pursuant to a registration statement that the Company filed with the Securities and Exchange Commission on Form S-3 (File No. 333-202451) on March 2, 2015. The Company received aggregate net proceeds of approximately \$46.7 million, after deducting the underwriting discounts and offering-related transaction costs.

**13. Subsequent Event**

In March 2015, Auspex and Teva Pharmaceutical Industries Ltd., or Teva, announced that they had entered into a definitive merger agreement under which Teva would conduct a tender offer for all of the outstanding shares of Auspex at \$101.00 per share in cash, representing total consideration of approximately \$3.5 billion in equity value. On May 5, 2015, Teva announced that it had completed the acquisition. As a result, pursuant to the terms of the patent assignment agreement between the Company and Auspex discussed in Note 8, the Company expects to receive a payment within a specified period following the closing date. As a result of the merger, Auspex became a wholly owned subsidiary of Teva.

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

*You should read the following discussion and analysis of our financial condition and results of operations together with our condensed consolidated financial statements and the related notes appearing elsewhere in this Quarterly Report on Form 10-Q. Statements contained or incorporated by reference in this Quarterly Report on Form 10-Q that are not based on historical fact are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements regarding future events and our future results are based on current expectations, estimates, projections, intentions, goals, strategies, plans, prospects and the beliefs and assumptions of our management including, without limitation, our expectations regarding results of operations, general and administrative expenses, research and development expenses, current and future development and manufacturing efforts, regulatory filings, nonclinical and clinical trial results, and the sufficiency of our cash for future operations. You should read the “Risk Factors” section in Part II—Item 1A. of this report for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.*

**OVERVIEW**

We are a clinical stage biopharmaceutical company applying our extensive knowledge of deuterium chemistry to discover and develop novel small molecule drugs. Our approach starts with approved drugs, advanced clinical candidates or previously studied compounds that we believe can be improved with deuterium substitution to provide better pharmacokinetic or metabolic properties, thereby enhancing clinical safety, tolerability or efficacy. We believe our approach may enable drug discovery and clinical development that is more efficient and less expensive than conventional small molecule drug research and development. We have a robust pipeline of wholly owned and collaboration programs.

The following summarizes our clinical development programs:

- *AVP-786* is a combination of a deuterium-substituted dextromethorphan analog and an ultra-low dose of quinidine being investigated for the treatment of neurologic and psychiatric disorders. We granted Avanir Pharmaceuticals, Inc., or Avanir, an exclusive worldwide license to develop and commercialize deuterated dextromethorphan analogs, including the analog in AVP-786. Subsequent to our agreement, Avanir was acquired by Otsuka Pharmaceutical Co., Ltd. Avanir is conducting a Phase 2 clinical trial of AVP-786 as an adjunctive treatment for major depressive disorder and also has announced plans to advance AVP-786 into Phase 3 testing for Alzheimer’s agitation, pending agreement with the United States Food and Drug Administration, or FDA.
- *CTP-656* is a deuterated analog of ivacaftor that we are developing as a treatment for cystic fibrosis. Ivacaftor is commercially marketed by Vertex Pharmaceuticals, Inc. under the name Kalydeco®. In March 2015, we began a Phase 1 clinical program. We initially conducted a crossover study to compare CTP-656 and another proprietary deuterium-modified compound in order to select one for further clinical evaluation. We plan to conduct single and multiple ascending dose trials as part of the Phase 1 program. We expect to begin the multiple ascending dose trial in the second half of 2015 to evaluate the safety and pharmacokinetics of CTP-656.
- *JZP-386* is a product candidate containing a deuterated sodium oxybate analog for potential use in patients with narcolepsy. We have granted Jazz Pharmaceuticals Ireland Limited, or Jazz Pharmaceuticals, worldwide rights to develop and commercialize deuterated sodium oxybate analogs, including JZP-386. Sodium oxybate is the active ingredient in Jazz Pharmaceuticals’ marketed drug Xyrem®. A second Phase 1 clinical trial evaluating JZP-386 was recently completed. On May 7, 2015, we and Jazz Pharmaceuticals announced results from the recently completed Phase 1 trial. While we and Jazz Pharmaceuticals have determined that the deuterium-related effects do not support advancing into a later-stage clinical trial of JZP-386 at this time, the results indicate that further evaluation of JZP-386 is warranted. We and Jazz Pharmaceuticals intend to explore formulation options to enhance the positive effects observed in the Phase 1 trials to achieve an improved product profile for patients with narcolepsy.

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- *CTP-730* is a product candidate for the treatment of inflammatory diseases that is being developed under a collaboration with Celgene Pharmaceuticals, Inc., Celgene International Sarl and Celgene Corporation, together referred to as Celgene, to research, develop and commercialize certain deuterated compounds for the treatment of inflammation or cancer. We have completed a single ascending dose Phase 1 clinical trial and have initiated a multiple ascending dose Phase 1 trial to assess safety, tolerability and pharmacokinetics of CTP-730, which is expected to be completed in the second half of 2015.
- *CTP-499* is a novel, potential first-in-class treatment for diabetic nephropathy that we are developing as an additive treatment to the current standard of care. We have completed a Phase 2 clinical trial and plan to seek one or more collaborators for future development of CTP-499 in diabetic nephropathy. We also plan to negotiate a Special Protocol Assessment with the FDA in 2015.
- *CTP-354* is a novel, potential first-in-class, non-sedating treatment for spasticity that we are initially developing for use in patients with spinal cord injury and in patients with multiple sclerosis. In November 2014, we announced three-month toxicology data from a non-clinical *in vivo* study of CTP-354 showing adverse effects in one of two species studied and our intent to conduct additional non-clinical evaluations to further evaluate CTP-354. In March 2015, we received a partial clinical hold letter from the FDA providing guidance that would allow us to conduct limited Phase 2 clinical trials. We are conducting non-clinical evaluation of CTP-354 to determine whether to advance CTP-354 into Phase 2 clinical testing.

We plan to continue to seek to identify compounds that can be improved through selective deuterium modification and believe we are capable of identifying one to two novel deuterated compounds per year that we can advance into preclinical development while concurrently progressing our existing pipeline.

Since our inception in 2006, we have devoted substantially all of our resources to our research and development efforts, including activities to develop our deuterated chemical entity platform, or DCE Platform, and our core capabilities in deuterium chemistry, identify potential product candidates, undertake non-clinical studies and clinical trials, manufacture product in compliance with current good manufacturing practices, provide general and administrative support for these operations and establish our intellectual property. We have generated an accumulated deficit of \$154.3 million since inception through March 31, 2015 and will require substantial additional capital to fund our research and development. We do not have any products approved for sale and have not generated any revenue from product sales. We have funded our operations primarily through the public offering and private placement of our equity, debt financing and funding from collaborations. In March 2015, we sold 3,300,000 shares of common stock at a price to the public of \$15.15 per share, resulting in net proceeds to us of \$46.7 million, after deducting the underwriting discounts, commissions and offering-related transaction costs.

We have incurred net losses in each year from our inception in 2006. We incurred a net loss of \$9.0 million for the three months ended March 31, 2015. Our net losses may fluctuate significantly from year to year, depending on the timing and magnitude of clinical trial and other development activities under our current development programs. Substantially all of our net losses have resulted from costs incurred in connection with our research and development programs and from general and administrative costs associated with our operations.

We expect to continue to incur significant expenses and increasing operating losses for at least the next several years. We expect our expenses will increase substantially in connection with our ongoing activities as we:

- continue to develop and conduct additional non-clinical studies and clinical trials with respect to our product candidates;
- seek to identify additional product candidates;
- in-license or acquire additional product candidates;
- seek marketing approvals for our product candidates that successfully complete clinical trials;
- establish sales, marketing, distribution and other commercial infrastructure in the future to commercialize various products for which we may obtain marketing approval;

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- require the manufacture of larger quantities of product candidates for clinical development and potentially commercialization;
- maintain, expand and protect our intellectual property portfolio;
- hire additional personnel;
- add equipment and physical infrastructure to support our research and development; and
- continue to implement the infrastructure necessary to support our product development and help us comply with our obligations as a public company.

We do not expect to generate revenue from product sales unless and until we, or our collaborators, successfully complete development and obtain marketing approval for one or more of our product candidates, which we expect will take a number of years and is subject to significant uncertainty. We have developed the internal capability to manufacture up to low kilogram quantities of deuterated active pharmaceutical ingredients for use in Phase 1 clinical trials. However, to date, the majority of our manufacturing activities have been performed by third parties. Additionally, we currently utilize third-party contract research organizations to carry out our clinical development activities and we do not yet have a sales organization. If we obtain, or believe that we are likely to obtain, marketing approval for any product candidates for which we retain commercialization rights, and intend to commercialize a product, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. We expect to seek to fund our operations through a combination of equity offerings, debt financings and additional collaborations and licensing arrangements for at least the next several years. However, we may be unable to raise additional funds or enter into such other arrangements when needed on favorable terms or at all. Our failure to raise capital or enter into such other arrangements as and when needed would force us to delay, limit, reduce or terminate our research and development programs and could have a material adverse effect on our financial condition and our ability to develop our products. We will need to generate significant revenues to achieve sustained profitability and we may never do so.

## **COLLABORATIONS**

We have entered into a number of collaborations for the research, development and commercialization of deuterated compounds. To date, our collaborations have provided us with significant funding for both our specific development programs and our DCE Platform. They also have provided us with access to the considerable scientific, development, regulatory and commercial capabilities of our collaborators. In addition, in some instances, where we develop and seek to collaborate with respect to deuterated analogs of marketed drugs or of drug candidates that are more advanced in clinical trials, our collaborators may be eligible for an expedited development or regulatory pathway by relying on previous clinical data regarding their corresponding non-deuterated compound. For example, our collaborator Avanir reported agreeing with the FDA to an expedited development pathway for AVP-786. We believe that our collaborations have contributed to our ability to progress our product candidates and build our DCE Platform. We have established the following key collaborations:

- *Celgene*. In April 2013, we entered into a master development and license agreement with Celgene, which is primarily focused on the research, development and commercialization of specified deuterated compounds targeting inflammation or cancer. The collaboration is initially focused on one compound in the initial program, referred to as CTP-730, targeting inflammatory disease, but has the potential to encompass up to four programs. For the initial program, we granted Celgene an exclusive worldwide license to develop, manufacture and commercialize deuterated analogs of a selected non-deuterated compound and certain close chemical derivatives thereof. We further granted Celgene licenses with respect to two additional programs and an option with respect to a third additional program. We and Celgene have agreed on the non-deuterated compounds for each of the two additional license programs. For the option program, Celgene may select the non-deuterated compound at a later time, which, unless otherwise agreed by us, will be limited to a compound for which Celgene possesses exclusive rights. With respect to the two additional license programs, we granted Celgene an upfront exclusive worldwide license to develop, manufacture and commercialize deuterated products that contain deuterated analogs of the agreed non-deuterated compounds. Celgene is restricted from utilizing their research, development and commercialization rights under each of these upfront licenses, unless, within seven

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years after the effective date of the agreement, Celgene pays us a license exercise fee. If Celgene does not elect to pay the license exercise fee during the seven year period, the license will expire. With respect to the option program, once a compound is selected, Celgene may exercise its option by paying us an option exercise fee within seven years of the effective date of the agreement, and upon Celgene's exercise of the option we will grant to Celgene an exclusive worldwide license to develop, manufacture and commercialize deuterated products that contain deuterated analogs of the selected non-deuterated compound.

Under the terms of the agreement, we received a non-refundable upfront payment of \$35.0 million. In addition, we are eligible to earn up to \$23.0 million in development milestone payments, including \$8.0 million related to the completion of a Phase 1 clinical trial, up to \$247.5 million in regulatory milestone payments and up to \$50.0 million in sales-based milestone payments related to products within the initial program. If Celgene exercises its rights with respect to either of the two additional license programs, we will receive a license exercise fee for the applicable program of \$30.0 million and will also be eligible to earn up to \$23.0 million in development milestone payments and up to \$247.5 million in regulatory milestone payments for that program. Additionally, with respect to one of the additional license programs we are eligible to receive up to \$100.0 million in milestone payments based on net sales of products, and with respect to the other additional license program we are eligible to receive up to \$50.0 million in milestone payments based on net sales of products. If Celgene exercises its option with respect to the option program in respect of a compound to be identified at a later time, we will receive an option exercise fee of \$10.0 million and will be eligible to earn up to \$23.0 million in development milestone payments and up to \$247.5 million in regulatory milestone payments.

In addition, with respect to each program, Celgene is required to pay us royalties on worldwide net sales of each licensed product at defined percentages ranging from the mid-single digits to low double digits below 20%. The royalty term for each licensed product in each country is the period commencing with first commercial sale of the applicable licensed product in the applicable country and ending on the latest of expiration of specified patent coverage, expiration of regulatory exclusivity or 10 years following commercial launch. The royalty rate is reduced on a country-by-country basis during any period within the royalty term when there is no patent claim or regulatory exclusivity covering the licensed product in the particular country.

We are responsible for conducting and funding research and early development activities for the initial program at our own expense pursuant to mutually agreed upon development plans. This includes the completion of single and multiple ascending dose Phase 1 clinical trials and any mutually agreed upon additional Phase 1 clinical trials, as set forth in the development plan and approved by the joint steering committee for the collaboration. If Celgene exercises its rights with respect to any additional program and pays us the applicable exercise fee, we are responsible for conducting research and development activities at our own expense pursuant to mutually agreed upon development plans until the completion of the first Phase 1 clinical trial, which will be defined in each development plan on a program-by-program basis. In addition, if Celgene exercises its rights with respect to the option program and pays us the applicable exercise fee, we are responsible for seeking to generate a deuterated compound for clinical development in the selected option program at our own expense.

- *Avanir*. In February 2012, we entered into a development and license agreement with Avanir under which we granted Avanir an exclusive worldwide license to develop, manufacture and commercialize deuterated dextromethorphan containing products. Avanir is initially focused on developing AVP-786, which is a combination of a deuterated dextromethorphan analog and an ultra-low dose of quinidine, for the treatment of neurologic and psychiatric disorders. Subsequent to our agreement, Avanir was acquired by Otsuka Pharmaceutical Co., Ltd. and it is now a wholly owned subsidiary of Otsuka America, Inc.

Under the agreement, we received a non-refundable upfront payment of \$2.0 million and have received milestone payments of \$4.0 million. We are also eligible to earn, with respect to licensed products comprising a combination of deuterated dextromethorphan and quinidine, an additional \$2.0 million development milestone payment related to initiation of dosing in a Phase 3 clinical trial for AVP-786, up to \$37.0 million in regulatory and commercial launch milestone payments and up to \$125.0 million in sales-based milestone payments. In addition, we are eligible for higher development milestones, up to an additional \$43.0 million, for licensed products that do not require quinidine. Avanir is currently developing deuterated dextromethorphan only in combination with quinidine. Avanir also is required to pay us royalties at defined percentages ranging from the mid-single digits to low double digits below 20% on net sales of licensed products on a country-by-country basis. The royalty term for each licensed product in each country is the period commencing with first

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commercial sale of the applicable licensed product in the applicable country and ending on the later of expiration of specified patent coverage or 10 years following commercial launch. The royalty rate is reduced, on a country-by-country basis, during any period within the royalty term when there is no patent claim covering the licensed product in the particular country.

- *Jazz Pharmaceuticals.* In February 2013, we entered into a development and license agreement with Jazz Pharmaceuticals to research, develop and commercialize products containing a deuterated sodium oxybate analog, or D-SXB. We are initially focusing on one analog, designated as JZP-386. Under the terms of the agreement, we granted Jazz Pharmaceuticals an exclusive, worldwide, royalty-bearing license under intellectual property controlled by us to develop, manufacture and commercialize D-SXB products including, but not limited to, JZP-386.

We, together with Jazz Pharmaceuticals, are conducting certain development activities for Phase 1 clinical trials with respect to JZP-386 pursuant to an agreed upon development plan. We are responsible under the development plan for conducting the Phase 1 clinical trials with respect to JZP-386. Thereafter, our obligations to conduct further development activities are subject to mutual agreement. Jazz Pharmaceuticals has assumed all manufacturing responsibilities. Pursuant to the agreement, our costs for activities under the development plan, including pass-through costs and the costs of our employees' time at a rate per full-time equivalent year of our employees' time, which we and Jazz Pharmaceuticals agreed to, are reimbursed by Jazz Pharmaceuticals, except for the costs of a Phase 1 clinical trial that was initiated in the first quarter of 2015, which will be shared between Jazz Pharmaceuticals and us. This reimbursement is subject to limitations specified in the agreement, including adherence within a particular percentage to the development budget. Under the agreement, Jazz Pharmaceuticals is subject to specified diligence obligations regarding the development and commercialization of licensed products.

Under the agreement, we received a non-refundable upfront payment of \$4.0 million and are eligible to earn an aggregate of up to \$8.0 million in development milestone payments, including \$4.0 million related to the initiation of the first Phase 2 clinical trial of JZP-386, up to \$35.0 million in regulatory milestone payments and up to \$70.0 million in sales-based milestone payments based on net product sales of licensed products. In addition, Jazz Pharmaceuticals is required to pay us royalties at defined percentages ranging from the mid-single digits to low double digits below 20% on worldwide net sales of licensed products. The royalty term for each licensed product in each country is the period commencing with first commercial sale of the applicable licensed product in the applicable country and ending on the later of the expiration of specified patent coverage or 10 years following commercial launch. The royalty rate is lowered, on a country-by-country basis, under certain circumstances as specified in the agreement.

Following termination of the agreement with respect to a country or countries, but not in its entirety, by Jazz Pharmaceuticals for Jazz Pharmaceuticals' convenience, Jazz Pharmaceuticals may provide us written notice that it desires to continue or recommence development and commercialization of licensed products in such country or countries, in which event Jazz Pharmaceuticals' license with respect to D-SXB products in such country or countries and corresponding payment obligations under the agreement will be reinstated except in specified circumstances in which we have previously notified Jazz Pharmaceuticals of our intent to develop or commercialize licensed products in such country or countries either directly or through a third party licensee.

- *Glaxo Group Limited.* In May 2009, we entered into a research and development collaboration and license agreement with Glaxo Group Limited, or GSK, to research, develop and commercialize multiple products containing deuterated compounds, including CTP-499. Our agreement with GSK, as subsequently amended, expired in May 2012 after GSK opted out of further development under the agreement and made a \$2.75 million payment to us. The rights to the product candidates developed under the agreement have reverted to us and we are free to pursue them without further obligation to GSK other than to repay GSK an amount of up to \$2.75 million if we commercialize CTP-499 or if, prior to a specified date in 2018, we re-license or transfer rights to CTP-499 to a third party.

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### **PATENT ASSIGNMENT AGREEMENT**

In September 2011, we entered into a patent assignment agreement with Auspex Pharmaceuticals, Inc., or Auspex, pursuant to which we assigned to Auspex a U.S. patent application relating to deuterated pifrenidone analogs. Under the terms of the agreement, we are eligible to receive certain royalty payments, or the Royalty Payments, equal to a percentage in the low single digits of net sales in the United States invoiced by Auspex or any of its affiliates, with respect to certain pharmaceutical products containing a deuterated pifrenidone analog. The patent assignment agreement further provides that if Auspex sells to another party all of its U.S. rights to certain deuterated pifrenidone products, or if Auspex grants to another party a license to sell certain deuterated pifrenidone products in the United States, we will receive an amount, or the Sublicense/Sale Payments, equal to a percentage in the teens of any proceeds Auspex receives therefrom that are attributable to the rights to such deuterated pifrenidone products in the United States. In addition, the patent assignment agreement provides that if Auspex is acquired in a change in control transaction at any time while it, or any of its affiliates, own certain patents or patent applications related to deuterated pifrenidone, we will receive within a specified period following the closing of the transaction 1.44% of any proceeds payable as consideration for the change in control transaction, including any amounts paid to stockholders and certain equity holders of Auspex. Any such change-in-control payment to us is credited to Auspex as a deduction against any future Royalty Payments and Sublicense/Sale Payments that may become due under the agreement, such that Auspex will not be required to make further Royalty Payments and Sublicense/Sale Payments to us until the aggregate amount of such Royalty Payments and Sublicense/Sale Payments exceeds the amount of such change-in-control payment. The patent assignment agreement expires upon the earlier to occur of (1) receipt by us of the final Sublicense/Sale Payment arising from (a) the sale of Auspex's U.S. rights to certain deuterated pifrenidone products or (b) Auspex's grant of an exclusive license to sell certain deuterated pifrenidone products in the United States in all indications and fields, or (2) the expiration of the last claim owned by Auspex or any of its affiliates in certain patents or patent applications related to deuterated pifrenidone analogs.

In March 2015, Auspex and Teva Pharmaceutical Industries Ltd., or Teva, announced that they had entered into a definitive merger agreement under which Teva would conduct a tender offer for all of the outstanding shares of Auspex at \$101.00 per share in cash, representing total consideration of approximately \$3.5 billion in equity value. On May 5, 2015, Teva announced that it had completed the acquisition. As a result, pursuant to the terms of the patent assignment agreement, we expect to receive a payment within a specified period following the closing date. As a result of the merger, Auspex became a wholly owned subsidiary of Teva.

### **FINANCIAL OPERATIONS OVERVIEW**

#### **Revenue**

We have not generated any revenue from the sales of products. All of our revenue to date has been generated through collaboration, license and research arrangements with collaborators and nonprofit organizations for the development and commercialization of product candidates.

The terms of these agreements include one or more of the following types of payments: non-refundable license fees, payments for research and development activities, payments based upon the achievement of specified milestones, payment of license exercise or option fees relating to product candidates and royalties on any net product sales. To date, we have received non-refundable upfront payments, several milestone payments and certain research and development service revenues. However, we have not yet earned any license exercise or option fees, sales-based milestone payments or royalty revenue as a result of product sales.

In the future, we will seek to generate revenue from a combination of product sales and milestone payments and royalties on product sales in connection with our current collaborations with Celgene, Avanir and Jazz Pharmaceuticals, or other collaborations we may enter into.

#### **Research and development expenses**

Research and development expenses consist primarily of costs incurred for the development of our product candidates, which include:

- employee-related expenses, including salary, benefits, travel and stock-based compensation expense;
- expenses incurred under agreements with contract research organizations and investigative sites that conduct our clinical trials;

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- the cost of acquiring, developing and manufacturing clinical trial materials;
- facilities, depreciation and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, insurance and other supplies;
- platform-related lab expenses, which consist of costs related to synthesis, analysis and *in vitro* and *in vivo* characterization of deuterated compounds to support the selection and progression of potential product candidates;
- expenses related to consultants and advisors; and
- costs associated with non-clinical activities and regulatory operations.

Research and development costs are expensed as incurred. Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors and our clinical sites.

A significant portion of our research and development costs have been external costs, which we track on a program-by-program basis. These external costs include fees paid to investigators, consultants, central laboratories and contract research organizations in connection with our clinical trials, and costs related to acquiring and manufacturing clinical trial materials. Our internal research and development costs are primarily personnel-related costs, depreciation and other indirect costs. We do not track our internal research and development expenses on a program-by-program basis as they are deployed across multiple projects under development.

The successful development of any of our product candidates is highly uncertain. As such, at this time, we cannot reasonably predict with certainty the duration and completion costs of the current or future clinical trials of any of our product candidates or if, when, or to what extent we will generate revenues from the commercialization and sale of any of our product candidates that obtain marketing approval. We may never succeed in achieving regulatory approval for any of our product candidates. The duration, costs, and timing of clinical trials and development of our product candidates will depend on a variety of factors, including:

- the scope and rate of progress of our ongoing as well as any additional clinical trials and other research and development activities;
- results from ongoing as well as any additional clinical trials and research and development activities;
- significant and changing government regulation;
- the terms and timing and receipt of any regulatory approvals;
- the performance of our collaborators;
- our ability to manufacture, market, commercialize and achieve market acceptance for any of our product candidates that we are developing or may develop in the future; and
- the expense and success of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. For example, if the FDA or another regulatory authority were to require us to conduct clinical trials or other research and development activities beyond those that we currently anticipate will be required for the completion of clinical development of a product candidate, or if we experience significant delays in enrollment in any of our clinical trials, we could be required to expend significant additional financial resources and time on the completion of clinical development.

Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, due to the increased size and duration of later-stage clinical trials and the manufacturing that is typically required for those later-stage clinical trials. We expect research and development costs to increase significantly for the foreseeable future as our product candidate development programs progress but we do not believe that it is possible at this time to accurately project total program-specific expenses through commercialization. There are numerous factors

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associated with the successful commercialization of any of our product candidates, including future trial design and various regulatory requirements, many of which cannot be determined with accuracy at this time based on our stage of development. Additionally, future commercial and regulatory factors beyond our control will impact our clinical development programs and plans.

### **General and administrative expenses**

General and administrative expenses consist primarily of salaries and related costs for personnel, including stock-based compensation and travel expenses for our employees in executive, operational, finance, legal, business development and human resource functions. Other general and administrative expenses include facility-related costs, depreciation and other expenses not allocated to research and development expense and professional fees for directors, accounting and legal services and expenses associated with obtaining and maintaining patents.

We anticipate that our general and administrative expenses will increase in the future as our pipeline grows and matures. Additionally, if and when we believe a regulatory approval of the first product candidate that we intend to commercialize on our own appears likely, we anticipate an increase in payroll and related expenses as a result of our preparation for commercial operations, especially as it relates to the sales, marketing and distribution of our product candidates.

### **Investment income**

Investment income consists of interest income earned on cash equivalents and investments.

### **Interest and other expense**

Interest and other expense consists primarily of interest expense on amounts outstanding under our debt facility with Hercules Technology Growth Capital, Inc., or Hercules, amortization of debt discount and the re-measurement gain or loss associated with the change in the fair value of the preferred stock warrant liability.

### **Income Taxes**

We record a provision or benefit for income taxes on ordinary pre-tax income or loss based on our estimated effective tax rate for the year. As of March 31, 2015, we forecast an ordinary pre-tax loss for the year ended December 31, 2015 and, since we maintain a full valuation allowance on our deferred tax assets, we did not record an income tax benefit for the three months ended March 31, 2015.

To the extent new information becomes available, we may revise our forecast of ordinary pre-tax income or loss, and therefore the estimated effective tax rate, in future periods. The potential effect of a non-recognized subsequent event is considered in our estimated effective tax rate in the period in which the event occurs.

### **Critical Accounting Policies and Significant Judgments and Estimates**

During the three months ended March 31, 2015, there were no material changes to our critical accounting policies as detailed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2014, which was filed with the Securities and Exchange Commission on March 2, 2015.

#### *Pending Accounting Pronouncements*

In May 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, or ASU 2014-09, which stipulates that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve this core principle, ASU 2014-09 provides that an entity should apply the following steps: (1) identify the contract(s) with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract and (5) recognize revenue when (or as) the entity satisfies a performance obligation. This update will be effective for us beginning in the first quarter of fiscal 2017 with early adoption not permitted. We are currently assessing the impact of this ASU on our financial statements.

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In August 2014, the FASB issued ASU No. 2014-15, *Disclosure of Uncertainties About an Entity's Ability to Continue as a Going Concern*, or ASU 2014-15. ASU 2014-15 amends FASB Accounting Standards Codification 205-40 *Presentation of Financial Statements – Going Concern*, by providing guidance on determining when and how reporting entities must disclose going-concern uncertainties in their financial statements, including requiring management to perform interim and annual assessments of an entity's ability to continue as a going concern within one year of the date of issuance of the entity's financial statements and providing certain disclosures if there is substantial doubt about the entity's ability to continue as a going concern. ASU 2014-15 will be effective for our fiscal 2016 and for interim periods beginning in the first quarter of fiscal 2017. We are still evaluating the impact of this ASU on our financial statement disclosures.

## RESULTS OF OPERATIONS

### Comparison of the three months ended March 31, 2015 and 2014

The following table summarizes our results of operations for the three months ended March 31, 2015 and 2014, together with the changes in those items in dollars.

(in thousands)	Three months ended March 31,		Change
	2015	2014	
Revenue:			
License and research and development revenue	\$ 1,306	\$ 1,613	\$ (307)
Total revenue	1,306	1,613	(307)
Operating expenses:			
Research and development	6,944	5,594	1,350
General and administrative	3,233	2,538	695
Total operating expenses	10,177	8,132	2,045
Loss from operations	(8,871)	(6,519)	(2,352)
Investment income	17	4	13
Interest and other expense	(148)	(435)	287
Net loss	\$ (9,002)	\$ (6,950)	\$ (2,052)

### Revenue

Revenue was \$1.3 million for the three months ended March 31, 2015 as compared to \$1.6 million for the prior year period, a decrease of \$0.3 million. The decrease in revenue was due to a decrease in revenue recognized for services performed under our Celgene and Jazz Pharmaceuticals collaboration agreements of \$0.2 million and \$0.2 million, respectively. These changes were attributable to a decrease in the extent of our activities related to Phase 1 clinical trials performed under our collaborations with Celgene and Jazz Pharmaceuticals. Revenue recognized under our collaboration agreements with Celgene and Jazz Pharmaceuticals may vary from period to period based on the timing of planned development activities and the extent of our efforts related to those activities. These decreases were partially offset by a \$0.1 million increase in revenue attributable to intellectual property cost reimbursements under our Avanir collaboration agreement.

As of March 31, 2015, we had deferred revenue of:

- \$12.2 million related to our collaboration with Celgene, \$5.7 million of which was classified as current on our condensed consolidated balance sheet;
- \$0.1 million related to our collaboration with Jazz Pharmaceuticals and associated with research and development services to be performed and recognized as revenue over the estimated remaining performance period of 21 months; and
- \$2.8 million related to a payment received from GSK that we will not recognize as revenue until all repayment obligations lapse.

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### *Research and development expenses*

The following table summarizes our external research and development expenses, by program, for the three months ended March 31, 2015 and 2014, with our internal research expenses separately classified by category. Because Avair is conducting the clinical development of AVP-786 at its expense, we made minimal investments in the program during these periods.

<b>(in thousands)</b>	<b>Three months ended</b>	
	<b>March 31,</b>	
	<b>2015</b>	<b>2014</b>
<b>External research and development expenses:</b>		
CTP-656	\$ 623	\$ —
JZP-386	804	111
CTP-730	395	369
CTP-499	172	347
CTP-354	276	1,267
<b>Total external research and development expenses</b>	<b>2,270</b>	<b>2,094</b>
Employee and contractor-related expenses	3,552	2,367
Platform-related lab expenses	378	362
Facility expenses	666	675
Other expenses	78	96
Personnel and other expenses	4,674	3,500
<b>Total research and development expenses</b>	<b>\$ 6,944</b>	<b>\$ 5,594</b>

Research and development expenses were \$6.9 million for the three months ended March 31, 2015, compared to \$5.6 million for the prior year period, an increase of \$1.3 million. This increase was primarily due to a \$1.2 million increase in employee and contractor-related expenses, which was primarily due to an increase in internal platform development expenses. The increase in direct research and development expenses was attributable to increased expenses under the JZP-386 and CTP-656 programs of \$0.7 million and \$0.6 million, respectively. The increase in JZP-386 expenses was attributable to the conduct of a Phase 1 clinical trial during the three months ended March 31, 2015. The increase in CTP-656 expenses was a result of expenses incurred in connection with the initiation of Phase 1 clinical testing during the three months ended March 31, 2015.

These increases were partially offset by lower CTP-354 expenses of \$1.0 million during the three months ended March 31, 2015 as compared to the prior year period, primarily as a result of expenses associated with the multiple ascending dose Phase 1 clinical trial which was initiated in January 2014. Expenses incurred with respect to CTP-354 during the three months ended March 31, 2015 related to ongoing non-clinical studies.

### *General and administrative expenses*

General and administrative expenses were \$3.2 million for the three months ended March 31, 2015, compared to \$2.5 million for the prior year period. The increase of \$0.7 million was primarily due to expenses associated with operating as a public company, including a \$0.5 million increase in cash compensation and non-cash stock-based compensation expense and a \$0.1 million increase in directors and officers insurance expense.

### *Interest and other expense*

Interest and other expense was \$0.1 million for the three months ended March 31, 2015, compared to \$0.4 million for the prior year period. The decrease was primarily attributable to a decrease in interest expense associated with our debt facility with Hercules, which decreased by \$0.2 million for the three months ended March 31, 2015 compared to the prior year period due to a lower principal balance outstanding. Additionally, a \$0.1 million expense was recognized during the three months ended March 31, 2014 in connection with the re-measurement of the fair value of the redeemable convertible preferred stock warrant that we issued to Hercules in connection with draws under our debt facility. Upon completion of our IPO in February 2014, the warrant became exercisable for an aggregate of 70,796 shares of our common stock at an exercise price of \$14.13 per share and the related warrant liability was reclassified to additional paid-in capital and will not be subject to re-measurement in future periods.

## LIQUIDITY AND CAPITAL RESOURCES

We have incurred cumulative losses and negative cash flows from operations since our inception in April 2006, and as of March 31, 2015, we had an accumulated deficit of \$154.3 million. We anticipate that we will continue to incur losses for at least the next several years. We expect that our research and development and general and administrative expenses will continue to increase and, as a result, we will need additional capital to fund our operations, which we may raise through a combination of equity offerings, debt financings and additional collaborations and licensing arrangements.

We have financed our operations to date primarily through the public offering and private placement of our equity, debt financing and funding from collaborations. During February 2014, we completed our IPO, whereby we sold 6,649,690 shares of common stock at a price to the public of \$14.00 per share, raising aggregate net proceeds of \$83.1 million. During March 2015, we sold 3,300,000 shares of common stock through an underwritten public offering at a price to the public of \$15.15 per share, raising aggregate net proceeds of \$46.7 million after deducting underwriting discounts and commissions and offering-related transaction costs.

As of March 31, 2015 we had cash and cash equivalents and investments of \$113.1 million. Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation. Currently, our funds are held in U.S. government-backed securities and money market mutual funds consisting of U.S. government-backed securities.

### Cash flows

The following table sets forth the primary sources and uses of cash for each of the periods set forth below:

(in thousands)	Three months ended	
	March 31,	
	2015	2014
Net cash provided by (used in):		
Operating activities	\$(11,036)	\$ (8,095)
Investing activities	16,274	(45,532)
Financing activities	45,182	83,640
Net increase in cash and cash equivalents	<u>\$ 50,420</u>	<u>\$ 30,013</u>

*Operating activities.* During the three months ended March 31, 2015 and 2014, our operating activities used cash of \$11.0 million and \$8.1 million, respectively. The cash used for operating activities generally approximates our net loss adjusted for non-cash items and changes in operating assets and liabilities. The increase in cash used during the three months ended March 31, 2015 as compared to the prior year period was primarily attributable to increased operating expenses, adjusted for non-cash items, which were due to increased research development activities as well as higher general and administrative expenses during the three months ended March 31, 2015.

*Investing activities.* Net cash provided by (used in) investing activities consisted of purchases of investments, purchases of fixed assets and proceeds from the maturity of investments. Net cash used in purchases of investments for the three months ended March 31, 2015 and 2014 was \$5.6 million and \$51.4 million, respectively. Net cash provided by maturities of investments for the three months ended March 31, 2015 and 2014 was \$22.0 million and \$6.0 million, respectively. Purchases of fixed assets for the three months ended March 31, 2015 and 2014 was \$0.2 million and \$0.1 million, respectively. The substantial amount of cash used in investing activities for the three months ended March 31, 2014 as compared to the current year period was primarily related to the investment of our IPO proceeds.

*Financing activities.* During the three months ended March 31, 2015 and 2014, our financing activities provided cash of \$45.2 million and \$83.6 million, respectively. The cash provided by financing activities during 2015 was primarily due to the receipt of net public offering proceeds of \$47.0 million in March 2015. During the three months ended March 31, 2014, cash provided was primarily due to the receipt of net IPO proceeds of \$86.6 million. Cash payments of offering related expenses totaled \$34 thousand and \$1.0 million during the three months ended March 31, 2015 and 2014, respectively. Principal payments under our debt facility with Hercules totaled \$2.1 million and \$1.9 million during the three months ended March 31, 2015 and 2014, respectively.

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**Credit Facilities**

In December 2011, we executed a Loan and Security Agreement with Hercules, which provided for up to \$20.0 million in funding, to be made available in two tranches. We borrowed the first tranche of \$7.5 million in December 2011 and the second tranche of \$12.5 million in March 2012. As of March 31, 2015, an aggregate of \$5.1 million of principal and accrued interest remained outstanding under the Loan and Security Agreement.

Each advance under the Loan and Security Agreement bears interest at a variable rate equal to the greater of 8.5% and an amount equal to 8.5% plus the prime rate of interest minus 5.25%, provided however that the per annum rate of interest shall not exceed 11%. We were required to pay interest only on the indebtedness through April 30, 2013. We are now repaying our remaining indebtedness under the Loan and Security Agreement in seven equal monthly payments of principal and interest of \$0.7 million through October 1, 2015.

The loan is collateralized by a blanket lien on all of our corporate assets, excluding intellectual property, and by a negative pledge on our intellectual property. The Loan and Security Agreement contains default provisions that include the occurrence of a material adverse effect, as defined therein, that would entitle the lender to declare all principal, interest and other amounts owed by us under the Loan and Security Agreement immediately due and payable. We do not believe that any events have occurred that could reasonably be deemed to have a material adverse effect. We do not have any financial covenants under the Loan and Security Agreement.

In connection with the December 2011 borrowing under the Loan and Security Agreement, we issued to Hercules a warrant to purchase an aggregate of 200,000 shares of Series C preferred stock with an exercise price of \$2.50 per share. In connection with the March 2012 borrowing under the Loan and Security Agreement, the warrant we issued to Hercules automatically became exercisable for an additional 200,000 shares of Series C preferred stock. Upon completion of our IPO in February 2014 the warrant became exercisable for an aggregate of 70,796 shares of our common stock at an exercise price of \$14.13 per share and the related warrant liability was reclassified to additional paid-in capital.

**Operating capital requirements**

We do not anticipate commercializing any of our product candidates for several years. We anticipate that we will continue to generate losses for the foreseeable future, and we expect the losses to increase as we continue the development of, and seek regulatory approvals for, our product candidates, and begin to commercialize any approved products for which we retain commercialization rights. We are subject to all of the risks incident in the development of new drug products, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business, as well as additional risks stemming from the unproven nature of deuterated drugs.

Based on our current expectations, including with respect to our development plans, we believe our existing cash and cash equivalents and investments as of March 31, 2015, will enable us to fund our operating expenses, debt service and capital expenditure requirements into the second half of 2017, without giving effect to potential milestone payments that we may receive under existing collaboration agreements or the patent assignment agreement with Auspex. However, we may require additional capital for the further development of our existing product candidates and may also need to raise additional funds sooner to pursue other development activities related to additional product candidates.

To date, we have not generated any revenue from product sales. We do not expect to generate significant revenue from product sales unless and until we, or our collaborators, obtain marketing approval of and commercialize one of our current or future product candidates. Because our product candidates are in various stages of development and the outcome of these efforts is uncertain, we cannot estimate the actual amounts necessary to successfully complete development and commercialization of our product candidates or whether or when we will achieve profitability. We anticipate that we will continue to generate losses for the foreseeable future, and we expect the losses to increase as we continue the development of, and seek marketing approvals for, our product candidates, and begin to commercialize any approved products for which we retain commercialization rights.

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Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings and additional collaborations, strategic alliances and licensing arrangements. Except for any obligations of our collaborators to reimburse us for research and development expenses or to make milestone payments under our agreements with them, we do not have any additional committed external sources of funds. Additional capital may not be available on reasonable terms, if at all. If we are unable to raise additional funds when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves. If we raise additional funds through the issuance of additional debt or equity securities, it could result in dilution to our existing stockholders, increased fixed payment obligations and these securities may have rights senior to those of our common stock. We are subject to covenants under our existing loan and security agreement with Hercules, and may become subject to covenants under any future indebtedness, that could limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, which could adversely impact our ability to conduct our business. In addition, the pledge of substantially all of our assets with the exception of our intellectual property as collateral, and the negative pledge with respect to our intellectual property, under our debt facility with Hercules limit our ability to obtain additional debt financing.

Our expectation with respect to the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement and involves risks and uncertainties, and actual results could vary as a result of a number of factors, including those discussed in the “Risk Factors” section of this Quarterly Report on Form 10-Q. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. If we cannot expand our operations or otherwise capitalize on our business opportunities because we lack sufficient capital, our business, financial condition and results of operations could be materially adversely affected.

### **Contractual obligations**

During the three months ended March 31, 2015, there were no material changes to our contractual obligations and commitments described under Management’s Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on Form 10-K for the fiscal year ended December 31, 2014.

### **OFF-BALANCE SHEET ARRANGEMENTS**

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined in the rules and regulations of the SEC.

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

We are exposed to market risk related to changes in interest rates. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because our investments are in short-term available-for-sale securities and interest on our debt facility accrues at a variable rate that references the prime rate.

We had cash and cash equivalents and investments of \$113.1 million as of March 31, 2015 and \$79.2 million as of December 31, 2014, in each case primarily money market mutual funds and available-for-sale securities consisting of U.S. government-backed and agency securities. The increase in cash and cash equivalents and investments during the three months ended March 31, 2015 was primarily the result of our sale of common stock in a public offering in March 2015, which resulted in net proceeds to us of \$46.7 million after deducting underwriting discounts and commissions and offering expenses. Our available-for-sale securities are subject to interest rate risk and will fall in value if market interest rates increase. Due to the short-term duration of our investment portfolio and the low risk profile of our investments, an immediate 10% change in interest rates would not have a material effect on the fair market value of our portfolio.

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We had outstanding borrowings under our debt facility with Hercules of \$5.1 million as of March 31, 2015 and \$7.2 million as of December 31, 2014. Interest is payable at a variable rate of the greater of 8.5% and an amount equal to 8.5% plus the prime rate of interest minus 5.25%, provided however, that the per annum interest rate shall not exceed 11%. As a result of the 11% maximum annual interest rate and interest rate protection until prime exceeds 5.25%, we have limited exposure to changes in interest rates on borrowings under this facility. A hypothetical 100 basis point increase in the prime rate as of March 31, 2015 would have no effect on the amount of our required interest payments under the debt facility through maturity on October 1, 2015.

We contract with suppliers of raw materials and contract manufacturers internationally. Transactions with these providers are predominantly settled in U.S. dollars and, therefore, we believe that we have only minimal exposure to foreign currency exchange risks. We do not hedge against foreign currency risks.

Inflation generally affects us by increasing our cost of labor and clinical trial costs. We do not believe that inflation had a material effect on our business, financial condition or results of operations during the three months ended March 31, 2015 and 2014.

### **Item 4. Controls and Procedures.**

#### **Evaluation of Disclosure Controls and Procedures**

The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, refers to controls and procedures that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and our management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Our disclosure controls and procedures are designed to provide reasonable assurance of achieving their control objectives.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures as of March 31, 2015, the end of the period covered by this Quarterly Report on Form 10-Q. Based upon such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of such date.

#### **Changes in Internal Control over Financial Reporting**

There was no change in our internal control over financial reporting that occurred during the period covered by this Quarterly Report on Form 10-Q that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

## PART II. OTHER INFORMATION

### Item 1A. Risk Factors.

Our business is subject to numerous risks. The following important factors, among others, could cause our actual results to differ materially from those expressed in forward-looking statements made by us or on our behalf in this Quarterly Report on Form 10-Q and other filings with the Securities and Exchange Commission, or the SEC, press releases, communications with investors and oral statements. Actual future results may differ materially from those anticipated in our forward-looking statements. We undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.

#### RISKS RELATED TO OUR FINANCIAL POSITION AND NEED FOR ADDITIONAL CAPITAL

*We have incurred significant losses since inception, expect to incur losses for at least the next several years and may never sustain profitability.*

We have incurred significant annual net operating losses in every year since our inception. Our net loss was \$9.0 million for the three months ended March 31, 2015. As of March 31, 2015, we had an accumulated deficit of \$154.3 million. We have not generated any revenues from product sales and have financed our operations to date primarily through the public offering of our common stock, private placements of our preferred stock, debt financings and funding from collaborations. We have not completed development of any product candidate and have devoted substantially all of our financial resources and efforts to research and development, including preclinical studies and our clinical development programs. We expect to continue to incur significant expenses and increasing operating losses for at least the next several years. Our net losses may fluctuate significantly from quarter to quarter and year to year. Net losses and negative cash flows have had, and will continue to have, an adverse effect on our stockholders' equity (deficit) and working capital.

We anticipate that our expenses will increase substantially if and as we:

- continue to develop and conduct additional non-clinical studies and clinical trials with respect to our product candidates;
- seek to identify additional product candidates;
- in-license or acquire additional product candidates;
- seek marketing approvals for our product candidates that successfully complete clinical trials;
- establish sales, marketing, distribution and other commercial infrastructure in the future to commercialize various products for which we may obtain marketing approval;
- require the manufacture of larger quantities of product candidates for clinical development and potentially commercialization;
- maintain, expand and protect our intellectual property portfolio;
- hire additional personnel;
- add equipment and physical infrastructure to support our research and development; and
- continue to implement the infrastructure necessary to support our product development and help us comply with our obligations as a public company.

Our ability to become and remain profitable depends on our ability to generate revenue. We do not expect to generate significant revenue unless and until we are, or one of our collaborators is, able to obtain marketing approval for and successfully commercialize one or more of our product candidates. This will require success in a range of challenging activities, including completing clinical trials of our product candidates, obtaining marketing approval for these product candidates, manufacturing, marketing and selling those products for which we, or our collaborators, may obtain marketing approval, satisfying any post-marketing requirements and obtaining reimbursement for our products from private insurance or government payors. We, and our collaborators, may never succeed in these activities and, even if we do, or one of our collaborators does, we may never generate revenues that

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are large enough for us to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, expand our business, maintain our research and development efforts, diversify our pipeline of product candidates or continue our operations. A decline in the value of our company could cause our stockholders to lose all or part of their investments in us.

***We have a limited operating history and no history of commercializing pharmaceutical products, which may make it difficult to evaluate the prospects for our future viability.***

We began operations in April 2006. Our operations to date have been limited to financing and staffing our company, developing our technology and product candidates and establishing collaborations. We have not yet demonstrated an ability to successfully conduct a multi-center, international clinical trial, conduct a large-scale pivotal clinical trial, obtain marketing approvals, manufacture a commercial scale product or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful product commercialization. Consequently, predictions about our future success or viability may not be as accurate as they could be if we had a longer operating history or a history of successfully developing and commercializing pharmaceutical products.

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

Developing pharmaceutical products, including conducting non-clinical studies and clinical trials, is a very time-consuming, expensive and uncertain process that takes years to complete. We expect our expenses to increase in connection with our ongoing activities, particularly as we initiate new clinical trials of, initiate new research and non-clinical development efforts for and seek marketing approval for, our product candidates, or if we in-license or acquire product candidates. In addition, if we obtain marketing approval for any of our product candidates, we may incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution to the extent that such sales, marketing and distribution are not the responsibility of one of our collaborators. In particular, the costs that we may be required to incur for the manufacture of any product candidate that receives marketing approval may be substantial. To our knowledge, no deuterated drug has ever been successfully commercialized. Manufacturing a deuterated drug at commercial scale may require specialized facilities, processes and materials. Furthermore, we will continue to incur costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we may be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts.

In any event, our existing cash and cash equivalents and investments will not be sufficient to fund all of the efforts that we plan to undertake or to fund the completion of development of any of our product candidates. Accordingly, we will be required to obtain further funding through public or private equity offerings, debt financings, collaborations and licensing arrangements or other sources. Adequate additional financing may not be available to us on acceptable terms, or at all. Our ability to obtain debt financing may be limited by covenants we have made under our Loan and Security Agreement with Hercules Technology Growth Capital, Inc., or Hercules, and our pledge to Hercules of substantially all of our assets, other than our intellectual property, as collateral. The negative pledge in favor of Hercules with respect to our intellectual property under the Loan and Security Agreement could further limit our ability to obtain additional debt financing. Our failure to raise capital when needed would have a negative impact on our financial condition and our ability to pursue our business strategy.

We believe our existing cash and cash equivalents and investments as of March 31, 2015 will enable us to fund our operating expenses, debt service and capital expenditure requirements into the second half of 2017, without giving effect to potential milestone payments that we may receive under existing collaboration agreements or the patent assignment agreement with Auspex. While we believe we are entitled to receive a payment under our patent assignment agreement with Auspex as a result of the completion of its acquisition by Teva, we have not yet received any payment. Our estimate as to how long we expect our existing cash and cash equivalents and investments to be able to continue to fund our operations is based on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Changing circumstances could 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. Our future funding requirements, both short-term and long-term, will depend on many factors, including:

- the progress, timing, costs and results of clinical trials of, and research and non-clinical development efforts for, our product candidates and potential product candidates, including current and future clinical trials;

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- our current collaboration agreements and achievement of milestones under these agreements;
- our ability to enter into and the terms and timing of any additional collaborations, licensing, product acquisition or other arrangements that we may establish;
- the number of product candidates that we pursue and their development requirements;
- the outcome, timing and costs of seeking regulatory approvals;
- our headcount growth and associated costs as we expand our research and development and establish a commercial infrastructure;
- the costs of preparing, filing and prosecuting patent applications, maintaining and protecting our intellectual property rights and defending against intellectual property related claims; and
- the costs of operating as a public company.

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

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of public or private equity offerings, debt financings and additional collaborations and licensing arrangements. We do not have any committed external source of funds, other than potential milestone payments and royalties under our collaborations with Celgene, Avanir and Jazz Pharmaceuticals, each of which is subject to the achievement of development, regulatory or sales-based milestones with respect to our product candidates. To the extent that we raise additional capital through the sale of common stock, convertible securities or other equity securities, the ownership interests of our stockholders may be materially diluted, and the terms of these securities could include liquidation or other preferences and anti-dilution protections that could adversely affect the rights of our stockholders. In addition, debt financing, if available, would result in increased fixed payment obligations and may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, that could adversely impact our ability to conduct our business. For example, our debt facility with Hercules contains restrictive covenants that, among other things and subject to certain exceptions, prohibit us from transferring any of our material assets, merging with or acquiring another entity, entering into a transaction that would result in a change of control, incurring additional indebtedness, creating any lien on our property, making investments in third parties or redeeming stock or paying dividends. Future debt securities or other financing arrangements could contain similar or more restrictive negative covenants.

If we raise additional funds through collaborations or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

### ***Our existing and any future indebtedness could adversely affect our ability to operate our business.***

As of March 31, 2015, we had \$5.1 million of outstanding borrowings under our Loan and Security Agreement with Hercules that we are required to repay in monthly installments through October 2015. We could in the future incur additional indebtedness beyond our borrowings from Hercules.

Our outstanding indebtedness combined with our other financial obligations and contractual commitments, including any additional indebtedness beyond our borrowings from Hercules, could have significant adverse consequences, including:

- requiring us to dedicate a portion of our cash resources to the payment of interest and principal, reducing money available to fund working capital, capital expenditures, product development and other general corporate purposes;

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- increasing our vulnerability to adverse changes in general economic, industry and market conditions;
- subjecting us to restrictive covenants that may reduce our ability to take certain corporate actions or obtain further debt or equity financing;
- limiting our flexibility in planning for, or reacting to, changes in our business and the industry in which we compete; and
- placing us at a competitive disadvantage compared to our competitors that have less debt or better debt servicing options.

In addition, although the rate of interest that we are required to pay under the Loan and Security Agreement is capped, our indebtedness under the Loan and Security Agreement bears interest at a variable rate below that cap, making us vulnerable to increases in the market rate of interest. If the market rate of interest increases substantially, we will have to pay additional interest on this indebtedness, which would reduce cash available for our other business needs.

Failure to make payments or comply with other covenants under our existing debt instruments could result in an event of default and acceleration of amounts due. Under our Loan and Security Agreement with Hercules, the occurrence of an event that would reasonably be expected to have a material adverse effect on our business, operations, assets or condition is an event of default. If an event of default occurs and the lender accelerates the amounts due, we may not be able to make accelerated payments, and the lender could seek to enforce security interests in the collateral securing such indebtedness, which includes substantially all of our assets other than our intellectual property. In addition, the covenants under our existing debt instruments, the pledge of our assets as collateral and the negative pledge with respect to our intellectual property could limit our ability to obtain additional debt financing.

### **RISKS RELATED TO THE DISCOVERY, DEVELOPMENT AND COMMERCIALIZATION OF OUR PRODUCT CANDIDATES**

*Our approach to the discovery and development of product candidates based on selective deuteration is unproven, and we do not know whether we will be able to develop any products of commercial value.*

We are focused on discovering and developing novel small molecule drugs that have improved metabolic or pharmacokinetic characteristics as a result of our selective substitution of deuterium for hydrogen. We apply our proprietary platform to systematically identify approved drugs, advanced clinical candidates or previously studied compounds that we believe can be improved with deuterium substitution to provide better pharmacokinetic or metabolic properties and thereby enhance clinical safety, tolerability or efficacy. To our knowledge, no deuterated drug has ever been approved for sale in the United States. While we believe that selective deuteration can produce compounds that possess favorable pharmaceutical properties, we have not yet succeeded and may not succeed in demonstrating efficacy and safety for any of our product candidates in later stage clinical trials or in obtaining marketing approval thereafter.

*Clinical drug development involves a lengthy and expensive process with an uncertain outcome.*

Clinical testing is expensive, time-consuming and uncertain as to outcome. We cannot guarantee that any clinical trials will be conducted as planned or completed on schedule, if at all. The clinical development of our product candidates is susceptible to the risk of failure inherent at any stage of drug development, including failure to demonstrate efficacy in a clinical trial or across a broad population of patients, the occurrence of severe or medically or commercially unacceptable adverse events, failure to comply with protocols or applicable regulatory requirements and determination by the Food and Drug Administration, or FDA, or any comparable foreign regulatory authority that a drug product is not approvable. It is possible that even if one or more of our product candidates has a beneficial effect, that effect will not be detected during clinical evaluation as a result of one or more of a variety of factors, including the size, duration, design, measurements, conduct or analysis of our clinical trials. Conversely, as a result of the same factors, our clinical trials may indicate an apparent positive effect of a product candidate that is greater than the actual positive effect, if any. Similarly, in our clinical trials, we may fail to detect toxicity of or intolerability caused by our product candidates, or mistakenly believe that our product candidates are toxic or not well tolerated when that is not in fact the case.

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While we believe that our DCE Platform may enable drug discovery and clinical development that is more efficient and less expensive than conventional small molecule drug research and development, we may not be able to realize the advantages that we expect. In addition, while a key element of our drug discovery and development strategy involves utilizing existing information regarding non-deuterated compounds to assist the discovery and development of deuterated analogs of those compounds, not all of the product candidates that we develop are based on drugs or drug candidates that progressed into advanced clinical development. Particularly in these situations, existing information regarding the corresponding non-deuterated compound may not be sufficient to mitigate drug development risks.

In addition to the risk of failure inherent in drug development, certain of the deuterated compounds that we, and our collaborators, are developing and may develop in the future may be particularly susceptible to failure to the extent they are based on compounds that others have previously studied or tested, but did not progress in development due to safety, tolerability or efficacy concerns or otherwise. Deuteration of these compounds may not be sufficient to overcome the problems experienced with the corresponding non-deuterated compound.

***We may not be able to continue further clinical development of our wholly owned development programs, including CTP-354, CTP-499, and CTP-656. If we are unable to develop, obtain marketing approval for or commercialize our wholly owned development programs, ourselves or through a collaboration, or experience significant delays in doing so, our business could be materially harmed.***

We currently have no products approved for sale. The success of our wholly owned development programs will depend on several factors, including:

- In the case of CTP-354, successful completion of non-clinical evaluation, including toxicology studies and related analysis, including those studies being conducted to further evaluate CTP-354 as a result of toxicology data from a non-clinical *in vivo* study of CTP-354 showing adverse effects;
- in the case of CTP-499, successful negotiation of a Special Protocol Assessment with FDA and our ability to find a suitable partner to continue development;
- in the case of CTP-656, we may be required to develop CTP-656 in combination with other agents to maximize its therapeutic and sales potential, and if we may not be able to establish such combinations;
- successful completion of clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;
- the performance of our future collaborators for our wholly owned development programs, if any;
- the extent of any required post-marketing approval commitments to applicable regulatory authorities;
- establishment of supply arrangements with third party raw materials suppliers and manufacturers;
- our ability to manufacture or arrange for the manufacture of our wholly owned development programs with sufficient quality and quantity to support clinical trials and potential future commercialization;
- establishment of arrangements with third party manufacturers to obtain finished drug products that are appropriately packaged for sale;
- obtaining and maintaining patent, trade secret protection and regulatory exclusivity, both in the United States and internationally;
- amount of commercial sales, if and when approved;
- a continued acceptable safety profile of our wholly owned development programs following any marketing approval; and
- agreement by third party payors to reimburse patients for the costs of treatment with our products, and the terms of such reimbursement.

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If we are unable to successfully develop, receive marketing approval for, and commercialize our wholly owned development programs, or experience delays as a result of any of these factors or otherwise, our business could be materially harmed.

***If clinical trials of our product candidates fail to satisfactorily demonstrate safety and efficacy to the FDA and other regulators, we, or our collaborators, may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of these product candidates.***

We, or our collaborators, must complete non-clinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans in order to obtain marketing approval from regulatory authorities for the sale of our product candidates. Clinical testing is expensive, difficult to design and implement, can take many years to complete and is inherently uncertain as to outcome. Further, the outcome of non-clinical studies and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. Moreover, non-clinical and clinical data are often susceptible to varying interpretations and analyses. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials after achieving positive results in earlier development, and we cannot be certain that we will not face similar setbacks.

Any inability to successfully complete non-clinical and clinical development could result in additional costs to us, or our collaborators, and impair our ability to generate revenues from product sales, regulatory and commercialization milestones and royalties. In addition, if (1) we, or our collaborators, are required to conduct additional clinical trials or other testing of our product candidates beyond the trials and testing that we, or they, contemplate (2) we, or our collaborators, are unable to successfully complete clinical trials of our product candidates or other testing, (3) the results of these trials or tests are unfavorable, uncertain or are only modestly favorable, or (4) there are unacceptable safety concerns associated with our product candidates, we, or our collaborators, in addition to incurring additional costs, may:

- be delayed in obtaining marketing approval for our product candidates;
- not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or significant safety warnings, including boxed warnings;
- be subject to additional post-marketing testing or other requirements; or
- be required to remove the product from the market after obtaining marketing approval.

Even if we, or our collaborators, believe that the results of clinical trials for our product candidates warrant marketing approval, the FDA or comparable foreign regulatory authorities may disagree and may not grant marketing approval of our product candidates.

***If we, or our collaborators, experience any of a number of possible unforeseen events in connection with clinical trials of our product candidates, potential marketing approval or commercialization of our product candidates could be delayed or prevented.***

We, or our collaborators, may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent marketing approval of our product candidates, including:

- clinical trials of our product candidates may produce unfavorable or inconclusive results;
- we, or our collaborators, may decide, or regulators may require us or them, to conduct additional clinical trials or abandon product development programs;

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- the number of patients required for clinical trials of our product candidates may be larger than we, or our collaborators, anticipate, patient enrollment in these clinical trials may be slower than we, or our collaborators, anticipate or participants may drop out of these clinical trials at a higher rate than we, or our collaborators, anticipate;
- our third party contractors or those of our collaborators, including those manufacturing our product candidates or components or ingredients thereof or conducting clinical trials on our behalf or on behalf of our collaborators, may fail to comply with regulatory requirements or meet their contractual obligations to us or our collaborators in a timely manner or at all;
- regulators or institutional review boards may not authorize us, our collaborators or our or their investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- we, or our collaborators, may have delays in reaching or fail to reach agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites;
- patients that enroll in a clinical trial may misrepresent their eligibility to do so or may otherwise not comply with the clinical trial protocol, resulting in the need to drop the patients from the clinical trial, increase the needed enrollment size for the clinical trial, extend the clinical trial's duration or cause spurious results;
- investigators may provide inaccurate or false data, resulting in spurious clinical results, an inadequate data set or regulators' unwillingness to approve a product;
- regulators or institutional review boards may require that we, or our collaborators, or our or their investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or their standards of conduct, a finding that the participants are being exposed to unacceptable health risks, undesirable side effects or other unexpected characteristics of the product candidate or findings of undesirable effects caused by a chemically or mechanistically similar drug or drug candidate;
- the FDA or comparable foreign regulatory authorities may disagree with our or our collaborators' clinical trial design or our or their interpretation of data from non-clinical studies and clinical trials;
- the supply or quality of raw materials or manufactured product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient, inadequate or not available at an acceptable cost, or we may experience interruptions in supply; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient to obtain marketing approval.

Product development costs for us, or our collaborators, will increase if we, or they, experience delays in testing or pursuing marketing approvals and we, or they, may be required to obtain additional funds to complete clinical trials and prepare for possible commercialization of our product candidates. We, and our collaborators, do not know whether any non-clinical tests or clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all. Significant non-clinical or clinical trial delays also could shorten any periods during which we, or our collaborators, may have the exclusive right to commercialize our product candidates or allow our competitors, or the competitors of our collaborators, to bring products to market before we, or our collaborators, do and impair our ability, or the ability of our collaborators, to successfully commercialize our product candidates and may harm our business and results of operations. In addition, many of the factors that cause, or lead to, clinical trial delays may ultimately lead to the denial of marketing approval of any of our product candidates.

***If we, or our collaborators, experience delays or difficulties in the enrollment of patients in clinical trials, our, or their, receipt of necessary regulatory approvals could be delayed or prevented.***

We, or our collaborators, may not be able to initiate or continue clinical trials for any of our product candidates if we, or they, are unable to locate and enroll a sufficient number of eligible patients to participate in clinical trials as required by the FDA or comparable foreign regulatory authorities, such as the European Medicines Agency. Patient enrollment is a significant factor in the timing of clinical trials, and is affected by many factors, including:

- the size and nature of the patient population;
- the severity of the disease under investigation;

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- the proximity of patients to clinical sites;
- the eligibility criteria for the trial;
- the design of the clinical trial;
- access to relevant clinical trial sites;
- efforts to facilitate timely enrollment;
- competing clinical trials; and
- clinicians' and patients' perceptions as to the potential advantages and risks of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating.

Our inability, or the inability of our collaborators, to enroll a sufficient number of patients for our, or their, clinical trials could result in significant delays or may require us or them to abandon one or more clinical trials altogether. Enrollment delays in our, or their, clinical trials may result in increased development costs for our product candidates, delay or halt the development of and approval processes for our product candidates and jeopardize our, or our collaborators', ability to commence sales of and generate revenues from our product candidates, which could cause the value of our company to decline and limit our ability to obtain additional financing, if needed.

*We believe we, or our collaborators, may in some instances be able to secure clearances from the FDA or comparable foreign regulatory authorities to use expedited development pathways. However, if we or our collaborators are unable to obtain such clearances, we, or they, may be required to conduct additional non-clinical studies or clinical trials beyond those that we, or they, contemplate, which could increase the expense of obtaining, and delay the receipt of, necessary marketing approvals.*

The deuterated compounds that we produce and seek to develop can have similar pharmacological properties as their corresponding non-deuterated compounds. Therefore, we believe that we, or our collaborators, may, in some instances, be able to obtain clearance from the FDA or comparable foreign regulatory authorities to follow expedited development programs for some deuterated compounds that reference and rely on findings previously obtained from prior non-clinical studies or clinical trials of the corresponding non-deuterated compounds. For example, our collaborator Avanir reported in June 2013 that the FDA has agreed to an expedited development pathway for AVP-786, a product candidate Avanir is developing that includes our licensed deuterated dextromethorphan compound, permitting Avanir to reference data from its development of dextromethorphan and quinidine in its investigational new drug application, or IND, and any future new drug application, for AVP-786.

While we anticipate that following an expedited development pathway may be possible for some of our current and future product candidates, we cannot be certain that we, or our collaborators, will be able to secure clearance to follow such expedited development pathways from the FDA or comparable foreign regulatory authorities. In addition, if we follow, or one of our collaborators follows, such an expedited regulatory pathway and the FDA or comparable foreign regulatory authorities are not satisfied with the results of our having done so, such as might be the case if a deuterated compound is found to have undesirable side effects or other undesirable properties that were not anticipated based on the corresponding non-deuterated compound, the FDA or foreign regulatory authorities may be unwilling to grant clearance to follow expedited development pathways for other deuterated compounds.

Consequently, we, or our collaborators, may be required to pursue full development programs with respect to any product candidates that we, or they, previously anticipated would be able to follow an expedited development pathway, including conducting a full range of non-clinical and clinical studies to attempt to establish the safety and efficacy of these product candidates. A need to conduct a full range of development activities would significantly increase the costs of development and length of time required before we, or our collaborators, could seek marketing approval of such a product candidate as compared to the costs and timing that we or they anticipate. While we have been able to reference, for purposes of some of our IND-enabling studies, data generated during development of the corresponding non-deuterated compound, we have not ourselves obtained clearance from the FDA or any comparable foreign regulatory authority to reference such data in connection with more advanced stages of development.

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***Serious adverse events, undesirable side effects or other unexpected properties of our product candidates, including those that we have licensed to collaborators, may be identified during development that could delay or prevent the product candidate's marketing approval.***

All of our product candidates are still in non-clinical and early-clinical stage development and their risk of failure is high. Serious adverse events or undesirable side effects caused by, or other unexpected properties of, our product candidates could cause us, one of our collaborators, an institutional review board or regulatory authorities to interrupt, delay or halt clinical trials of one or more of our product candidates and could result in a more restrictive label or the delay or denial of marketing approval by the FDA or comparable foreign regulatory authorities. A dose of a deuterated compound could, in comparison to an equal dose of the corresponding non-deuterated compound, result in increased exposure levels, distribution and half-life in the body and alter the levels of particular metabolites that are present in the body. These changes may cause serious adverse events or undesirable side effects that we or our collaborators did not anticipate, whether based on the characteristics of the corresponding non-deuterated compound or otherwise. If any of our product candidates is associated with serious adverse events or undesirable side effects or have properties that are unexpected, we, or our collaborators, may need to abandon development or limit development of that product candidate to certain uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. Many compounds that initially showed promise in clinical or earlier stage testing have later been found to cause undesirable or unexpected side effects that prevented further development of the compound. In addition, unexpected adverse clinical effects of a deuterated product candidate, including either those identified by us or deuterated analogs of approved drugs being developed by any third parties, may create general concerns regarding deuteration technology that could delay the development of our product candidates.

***Even if one of our product candidates receives marketing approval, it may fail to achieve the degree of market acceptance by physicians, patients, third party payors and others in the medical community necessary for commercial success and the market opportunity for the product candidate may be smaller than we estimate.***

Even if one of our product candidates, including those licensed to our collaborators, is approved by the appropriate regulatory authorities for marketing and sale, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, third party payors and others in the medical community. For example, physicians are often reluctant to switch their patients from existing therapies even when new and potentially more effective or convenient treatments enter the market. Further, patients often acclimate to the therapy that they are currently taking and do not want to switch unless their physicians recommend switching products or they are required to switch therapies due to lack of reimbursement for existing therapies.

Efforts to educate the medical community and third party payors on the benefits of our product candidates may require significant resources and may not be successful. If any of our product candidates is approved but does not achieve an adequate level of market acceptance, we may not generate significant revenues and we may not become profitable. The degree of market acceptance of our product candidates, including those licensed to our collaborators, if approved for commercial sale, will depend on a number of factors, including:

- the efficacy and safety of the product;
- the potential advantages of the product compared to alternative treatments;
- the prevalence and severity of any side effects;
- the clinical indications for which the product is approved;
- whether the product is designated under physician treatment guidelines as a first-line therapy or as a second- or third-line therapy;
- limitations or warnings, including distribution or use restrictions or burdensome prescription requirements contained in the product's approved labeling;
- our ability, or the ability of our collaborators, to offer the product for sale at commercially acceptable prices;
- the product's convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try, and of physicians to prescribe, the product;
- the strength of sales, marketing and distribution support;

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- the approval of other new products for the same indications;
- changes in the standard of care for the targeted indications for the product;
- the timing of market introduction of our approved products as well as competitive products; and
- availability and amount of reimbursement from government payors, managed care plans and other third party payors.

The potential market opportunities for our product candidates are difficult to precisely estimate. Our estimates of the potential market opportunities are predicated on many assumptions including industry knowledge and publications, third party research reports and other surveys. While we believe that our internal assumptions are reasonable, these assumptions involve the exercise of significant judgment on the part of our management, are inherently uncertain and the reasonableness of these assumptions has not been assessed by an independent source. If any of the assumptions proves to be inaccurate, the actual markets for our product candidates could be smaller than our estimates of the potential market opportunities.

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

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

- regulatory authorities may withdraw their approval of the drug or seize the drug;
- we, or our collaborators, may be required to recall the drug or change the way the drug is administered;
- additional restrictions may be imposed on the marketing of, or the manufacturing processes for, the particular drug, including the addition of labeling statements, such as a “black box” warning or a contraindication;
- we may be subject to fines, injunctions or the imposition of civil or criminal penalties;
- we, or our collaborators, may be required to create a Medication Guide outlining the risks of the previously unidentified side effects for distribution to patients;
- we, or our collaborators, could be sued and held liable for harm caused to patients; and
- the drug may become less competitive.

Any of these events could have a material and adverse effect on our operations and business and could adversely impact our stock price.

***If we are unable to establish sales, marketing and distribution capabilities or enter into sales, marketing and distribution arrangements with third parties, we may not be successful in commercializing any product candidates that we develop if and when those product candidates are approved.***

We do not have a sales, marketing or distribution infrastructure and have no experience in the sale, marketing or distribution of pharmaceutical products. To achieve commercial success for any approved product, we must either develop a sales and marketing organization or outsource these functions to third parties. We plan to use a combination of third party collaboration, licensing and distribution arrangements and a focused in-house commercialization capability to sell any products that receive marketing approval.

We generally plan to seek to retain full commercialization rights for the United States for products that we can commercialize with a specialized sales force and to retain co-promotion or similar rights for the United States when feasible in indications requiring a larger commercial infrastructure. The development of sales, marketing and distribution capabilities will require substantial resources, will be time-consuming and could delay any product

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launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing and distribution capabilities is delayed or does not occur for any reason, we could have prematurely or unnecessarily incurred these commercialization costs. This may be costly, and our investment could be lost if we cannot retain or reposition our sales and marketing personnel. In addition, we may not be able to hire or retain a sales force in the United States that is sufficient in size or has adequate expertise in the medical markets that we plan to target. If we are unable to establish or retain a sales force and marketing and distribution capabilities, our operating results may be adversely affected. If a potential partner has development or commercialization expertise that we believe is particularly relevant to one of our products, then we may seek to collaborate with that potential partner even if we believe we could otherwise develop and commercialize the product independently.

We plan to collaborate with third parties for commercialization in the United States of any products that require a large sales, marketing and product distribution infrastructure. We also plan to commercialize our product candidates outside the United States through collaboration, licensing and distribution arrangements with third parties. As a result of entering into arrangements with third parties to perform sales, marketing and distribution services, our product revenues or the profitability of these product revenues may be lower, perhaps substantially lower, than if we were to directly market and sell products in those markets. Furthermore, we may be unsuccessful in entering into the necessary arrangements with third parties or may be unable to do so on terms that are favorable to us. In addition, we may have little or no control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively.

If we do not establish sales and marketing capabilities, either on our own or in collaboration with third parties, we will not be successful in commercializing any of our product candidates that receive marketing approval.

***We face substantial competition from other pharmaceutical and biotechnology companies and our operating results may suffer if we fail to compete effectively.***

The development and commercialization of new drug products is highly competitive. We expect that we, and our collaborators, will face significant competition from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide with respect to our product candidates that we, or they, may seek to develop or commercialize in the future. Specifically, there are a number of large pharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of product candidates for the treatment of neurologic disorders, diabetic nephropathy, spasticity, inflammation and cancer, and cystic fibrosis, the key indications for our research and development programs. Our competitors may succeed in developing, acquiring or licensing technologies and drug products that are more effective, have fewer or more tolerable side effects or are less costly than any product candidates that we are currently developing or that we may develop, which could render our product candidates obsolete and noncompetitive.

Avanir is developing AVP-786 for the treatment of major depressive disorder. Avanir has also reported that it plans to develop AVP-786 for agitation associated with Alzheimer's Disease. There are a number of marketed drugs for major depressive disorder and product candidates in clinical development for each indication.

We are initially developing CTP-656 as a treatment for cystic fibrosis. CTP-656 is a deuterated analog of ivacaftor, which is commercially marketed by Vertex Pharmaceuticals, Inc. under the name Kalydeco®. If CTP-656 receives marketing approval, it would compete with this product and may face competition from a number of other product candidates that are currently in clinical development, including additional candidates being developed by Vertex, among others.

JZP-386 is being developed for the treatment of excessive daytime sleepiness and cataplexy in patients with narcolepsy. The current standard of care is treatment with sodium oxybate. In addition, Flamel Technologies is currently developing an extended release formulation of sodium oxybate for the treatment of narcolepsy.

We are developing CTP-499 as an additive treatment to the current standard of care for diabetic nephropathy in patients with macroalbuminuria, which is treatment with angiotensin modulators. Angiotensin modulators are available on a generic basis. If CTP-499 receives marketing approval, it may also face competition from a number of product candidates that are currently in clinical development, including potentially competitive product candidates in Phase 3 clinical development being pursued by AbbVie Inc., Janssen Research & Development LLC and NephroGenex, Inc.

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We are initially developing CTP-354 for the treatment of spasticity in spinal cord injury and spasticity in multiple sclerosis. Current first-line treatment for spasticity includes oral and local agents and physical and occupational therapy. Four oral drugs have been approved in the United States for the treatment of spasticity: baclofen (Lioresal®), tizanidine (Zanaflex®), diazepam (Valium) and dantrolene (Dantrium®), each of which is available on a generic basis. Spasticity is also treated through localized injections of botulinum toxin. In addition, there are several potentially competitive product candidates in Phase 3 clinical development being pursued by pharmaceutical and biotechnology companies, including GW Pharmaceuticals plc.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we, or our collaborators, may develop. Our competitors also may obtain FDA or other marketing approval for their products before we, or our collaborators, are able to obtain approval for ours, which could result in our competitors establishing a strong market position before we, or our collaborators, are able to enter the market.

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

### ***We also face competition in the development of deuterated compounds.***

Several large pharmaceutical and biotechnology companies have begun to cover deuterated analogs of their product candidates in patent applications and may choose to develop these deuterated compounds. These large pharmaceutical and biotechnology companies may have significantly greater financial resources and expertise in research and development, manufacturing, non-clinical testing, conducting clinical trials, obtaining marketing approvals and marketing approved products than we do. In addition, we know of two biotechnology companies, Auspex Pharmaceuticals, Inc., a wholly owned subsidiary of Teva Pharmaceutical Industries Ltd., and Achillion Pharmaceuticals, Inc., and possibly two others, DeuteRx LLC and Berolina innovative Research and Development Services Pharma GmbH, that are developing product candidates involving deuterium substitution. These competitors may be more successful than us in developing deuterated compounds. In addition, these competitors may enter into collaborative arrangements or business combinations that result in their ability to research and develop deuterated compounds more effectively than us. Our potential competitors also include academic institutions, government agencies and other public and private research organizations.

If our competitors in the development of deuterated compounds are able to grow their intellectual property estates and create new and successful deuterated compounds more effectively than us, our ability to identify additional compounds for non-clinical and clinical development and obtain product revenues in future periods could be compromised, which could result in significant harm to our operations and financial position.

***If the FDA or comparable foreign regulatory authorities approve generic versions of any of our products that receive marketing approval, or such authorities do not grant our products appropriate periods of data exclusivity before approving generic versions of our products, the sales of our products could be adversely affected.***

Once an NDA is approved, the product covered thereby becomes a “reference listed drug” in the FDA’s publication, “Approved Drug Products with Therapeutic Equivalence Evaluations.” Manufacturers may seek approval of generic versions of reference listed drugs through submission of abbreviated new drug applications, or ANDAs, in the United States. In support of an ANDA, a generic manufacturer need not conduct clinical studies. Rather, the applicant generally must show that its product has the same active ingredient(s), dosage form, strength, route of administration and conditions of use or labeling as the reference listed drug and that the generic version is bioequivalent to the reference listed drug, meaning it is absorbed in the body at the same rate and to the same extent. Generic products may be significantly less costly to bring to market than the reference listed drug and companies that produce generic products are generally able to offer them at lower prices. Thus, following the introduction of a generic drug, a significant percentage of the sales of any branded product or reference listed drug may be typically lost to the generic product.

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The FDA may not approve an ANDA for a generic product until any applicable period of non-patent exclusivity for the reference listed drug has expired. The Federal Food, Drug, and Cosmetic Act, or FDCA, provides a period of five years of non-patent exclusivity for a new drug containing a new chemical entity. Specifically, in cases where such exclusivity has been granted, an ANDA may not be filed with the FDA until the expiration of five years unless the submission is accompanied by a Paragraph IV certification that a patent covering the reference listed drug is either invalid or will not be infringed by the generic product, in which case the applicant may submit its application four years following approval of the reference listed drug. While we believe that our product candidates contain active ingredients that would be treated as new chemical entities by the FDA and, therefore, if approved, should be afforded five years of data exclusivity, the FDA may disagree with that conclusion and may approve generic products after a period that is less than five years. Manufacturers may seek to launch these generic products following the expiration of the applicable marketing exclusivity period, even if we still have patent protection for our product.

Competition that our products may face from generic versions of our products could materially and adversely impact our future revenue, profitability and cash flows and substantially limit our ability to obtain a return on the investments we have made in those product candidates.

***To the extent we, or our collaborators, market products that are deuterated analogs of generic drugs that are approved or will be approved while we market our products, our products will likely compete against these generic products and the sales of our products could be adversely affected.***

We anticipate that some of the products that we, or our collaborators, may develop will be deuterated analogs of approved drugs that are or will then be available on a generic basis. In addition, if we develop a product that is a deuterated analog of a non-generic approved drug, the FDA or comparable foreign regulatory authorities may also approve generic versions of the corresponding non-deuterated drug. If approved, we expect that our deuterated products will compete against these generic non-deuterated compounds in the same indications. Efforts to educate the medical community and third party payors on the benefits of any product that we develop as compared to the corresponding non-deuterated compound, or generic versions of it, may require significant resources and may not be successful. If physicians, rightly or wrongly, do not believe that a product that we, or our collaborators, develop offers substantial advantages over the corresponding non-deuterated compound, or generic versions of the corresponding non-deuterated compound, or that the advantages offered by our product as compared to the corresponding non-deuterated compound, or its generic versions, are not sufficient to merit the increased price over the corresponding non-deuterated compound, or its generic versions, that we, or our collaborators, would seek, physicians might not prescribe that product. In addition, third party payors may refuse to provide reimbursement for a product that we, or our collaborators, develop when the corresponding non-deuterated compound, or generic versions of the corresponding non-deuterated compound, offer a cheaper alternative therapy in the same indication, or may otherwise encourage use of the corresponding non-deuterated compound, or generic versions of the corresponding non-deuterated compound, over our product, even if our product possesses favorable pharmaceutical properties.

Competition that our product candidates may face from any generic non-deuterated product on which our product candidate is based or a later-approved generic version of a branded non-deuterated product on which our product is based, could materially and adversely impact our future revenue, profitability and cash flows and substantially limit our ability to obtain a return on the investments we have made in those product candidates.

***If we develop a deuterated analog of a drug with orphan disease exclusivity, we may be prevented from marketing our compound prior to the expiration of that exclusivity unless we can show that the deuterated analog is not the same drug for the same indication.***

Under the Orphan Drug Act, if the FDA has granted a drug orphan disease exclusivity with respect to an orphan indication, which is generally defined as a disease or condition with a patient population of less than 200,000 patients in the United States annually, the FDA cannot approve a new drug application for the same product and for the same orphan indication until the end of the exclusivity period of seven years following approval of the orphan drug. If one of our deuterium-modified analogs is deemed by the FDA to be the same product for the same indication as a corresponding non-deuterium modified drug that has orphan drug exclusivity, we may be prevented from marketing our drug during the exclusivity period.

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***Even if we, or our collaborators, are able to commercialize any product candidate that we, or they, develop, the product may become subject to unfavorable pricing regulations, third party payor reimbursement practices or healthcare reform initiatives that could harm our business.***

The commercial success of our product candidates will depend substantially, both domestically and abroad, on the extent to which the costs of our product candidates will be paid by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or reimbursed by government health administration authorities, private health coverage insurers and other third party payors. Government authorities and third party payors, such as private health insurers and health maintenance organizations, decide which medications they will cover and establish reimbursement levels. The healthcare industry is acutely focused on cost containment, both in the United States and elsewhere. Government authorities and third party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications, which could affect our ability or that of our collaborators to sell our product candidates profitably. These payors may not view our products, if any, as cost-effective, and coverage and reimbursement may not be available to our customers, or those of our collaborators, or may not be sufficient to allow our products, if any, to be marketed on a competitive basis. Cost-control initiatives could cause us, or our collaborators, to decrease the price we, or they, might establish for products, which could result in lower than anticipated product revenues. If reimbursement is not available, or is available only to limited levels, we, or our collaborators, may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us, or our collaborators, to establish or maintain pricing sufficient to realize a sufficient return on our or their investments.

There is significant uncertainty related to third party payor coverage and reimbursement of newly approved drugs. Marketing approvals, pricing and reimbursement for new drug products vary widely from country to country. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we, or our collaborators, might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay commercial launch of the product, possibly for lengthy time periods, which may negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability or the ability of our collaborators to recoup our or their investment in one or more product candidates, even if our product candidates obtain marketing approval.

Third party payor coverage of newly approved drugs may be more limited than the indications for which the drugs are approved by the FDA or comparable foreign regulatory authorities. Moreover, eligibility for reimbursement does not imply that any drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Reimbursement rates may vary, by way of example, according to the use of the drug and the clinical setting in which it is used. Reimbursement rates may also be based on reimbursement levels already set for lower cost drugs or may be incorporated into existing payments for other services.

In addition, increasingly, third party payors are requiring higher levels of evidence of the benefits and clinical outcomes of new technologies, requiring burdensome comparison studies with currently approved drugs and challenging the prices charged. We, and our collaborators, cannot be sure that coverage will be available for any product candidate that we, or they, commercialize and, if available, that the reimbursement rates will be adequate. Further, the net reimbursement for drug products may be subject to additional reductions if there are changes to laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. An inability to promptly obtain coverage and adequate payment rates from both government-funded and private payors for any our product candidates for which we, or our collaborators, obtain marketing approval could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

***We may not be successful in our efforts to identify or discover additional potential product candidates.***

A significant portion of our research involves the development of new deuterated compounds using our DCE Platform. These efforts may not be successful in creating compounds that have commercial value or therapeutic utility beyond the corresponding non-deuterated compound, or at all. Our research programs may initially show promise in creating potential product candidates, yet fail to yield viable product candidates for clinical development for a number of reasons, including:

- deuterated analogs of existing non-deuterated compounds or newly designed deuterated compounds may not demonstrate satisfactory efficacy or other benefits, such as convenience of dosing, increased tolerability, enhanced formation of desirable active metabolites or reduced formation of toxic metabolites;

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- potential product candidates may, on further study, be shown to have harmful side effects or other characteristics that indicate that they are unlikely to be products that will receive marketing approval and achieve market acceptance; or
- pharmaceutical companies have begun to claim deuterated analogs of their compounds in patent filings, resulting in otherwise promising deuterated product candidates already being covered by patents or patent applications.

If we are unable to identify suitable additional compounds for non-clinical and clinical development, our ability to develop product candidates and obtain product revenues in future periods could be compromised, which could result in significant harm to our financial position and adversely impact our stock price.

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

We face an inherent risk of product liability claims as a result of the clinical testing of our product candidates despite obtaining appropriate informed consents from our clinical trial participants. We will face an even greater risk if we or our collaborators commercially sell any product that we may or they may develop. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our product candidates. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our product candidates or products that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend litigation;
- distraction to our management diverting focus from business operations and strategy;
- initiation of investigations by regulators;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- substantial monetary awards to trial participants or patients;
- loss of revenue; and
- the inability to commercialize any products that we may develop.

Although we maintain product liability insurance coverage, it may not fully cover potential liabilities that we may incur. The cost of any product liability litigation or other proceeding, even if resolved in our favor, could be substantial. We will need to increase our insurance coverage if and when we begin selling any product candidate that receives marketing approval. In addition, insurance coverage is becoming increasingly expensive. If we are unable to obtain or maintain sufficient insurance coverage at an acceptable cost or to otherwise protect against potential product liability claims, it could prevent or inhibit the development and commercial production and sale of our product candidates, which could adversely affect our business, financial condition, results of operations and prospects.

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***JZP-386 is a deuterated analog of a Schedule I controlled substance and the active pharmaceutical ingredient will likely be classified as a Schedule I controlled substance and the drug product will likely be classified as a Schedule III controlled substance, which could substantially limit our ability to obtain the quantities of JZP-386 needed to conduct clinical trials and the ability of our collaborator to market and sell JZP-386 if it receives marketing approval. We also expect our product candidate CTP-354 will be classified as a Schedule IV controlled substance, which could substantially limit our ability to market and sell CTP-354 if it receives marketing approval.***

The placement of drugs or other substances into schedules under the Controlled Substances Act of 1970, or CSA, is based upon the substance's medical use, potential for abuse and safety or dependence liability. Under the CSA, every person who manufactures, distributes, dispenses, imports or exports any controlled substance must register with the U.S. Drug Enforcement Agency, or DEA, unless exempt. Our product candidate JZP-386, which we have licensed to Jazz Pharmaceuticals, is a deuterated sodium oxybate analog. Sodium oxybate is regulated as a chemical by the DEA as a Schedule I controlled substance. Because of the Schedule I classification of sodium oxybate, JZP-386 is regulated by the DEA as a Schedule I controlled substance. As a result, we or Jazz Pharmaceuticals will be required to obtain a license to ship the chemical intermediate that we are using as the precursor to JZP-386, which may delay or prevent the manufacturing of JZP-386 for clinical trials.

Specifically, the DEA limits the quantity of certain Schedule I controlled substances that may be produced in the United States in any year through a quota system. If our contract manufacturers for JZP-386, or those for Jazz Pharmaceuticals, manufacture JZP-386 in the United States, they will be required to obtain separate DEA quotas to supply us or Jazz Pharmaceuticals with JZP-386 for the conduct of clinical trials. Different, but potentially no less burdensome regulations, may apply if we or Jazz Pharmaceuticals choose to contract for the manufacture of JZP-386 outside of the United States.

The process of obtaining the quotas needed to conduct the planned clinical trials of JZP-386 may involve lengthy legal and other efforts and we or Jazz Pharmaceuticals, or suppliers or manufacturers for us or Jazz Pharmaceuticals, may not be able to obtain sufficient quotas from the DEA. If we or Jazz Pharmaceuticals, or suppliers or manufacturers for us or Jazz Pharmaceuticals, cannot obtain the quotas that are needed on a timely basis, or at all, we and Jazz Pharmaceuticals may not be able to conduct, on a timely basis or at all, the clinical trials of JZP-386 that are planned, and our business, financial condition, results of operations and growth prospects could be adversely affected.

If JZP-386 is approved for marketing in the United States, we believe that the commercial drug containing JZP-386 will remain subject to the CSA as a Schedule III controlled substance. Those restrictions could limit the marketing and distribution of the commercial drug containing JZP-386.

We also expect our product candidate, CTP-354, will be classified as a Schedule IV controlled substance under the CSA. Although the CSA's restrictions governing substances in Schedule IV are not as stringent as those for substances in Schedule III, they too could substantially limit our ability to market and sell CTP-354, if it is approved for marketing.

In addition, failure to maintain compliance with applicable requirements under the CSA, particularly as manifested in loss or diversion of regulated substances, can result in enforcement action that could include civil penalties, refusal to renew registrations or quotas, revocation of registrations or quotas or criminal proceedings, any of which could have a material adverse effect on our business, results of operations and financial condition. Individual states also regulate controlled substances, and we and Jazz Pharmaceuticals, and contract manufacturers for us and Jazz Pharmaceuticals, will be subject to state regulation on distribution of these products.

## RISKS RELATED TO OUR DEPENDENCE ON THIRD PARTIES

*We depend on collaborations with third parties for the development and commercialization of some of our product candidates and expect to continue to do so in the future. Our prospects with respect to those product candidates will depend in significant part on the success of those collaborations.*

We have entered into collaborations with Celgene, Avanir and Jazz Pharmaceuticals for the development and commercialization of certain of our product candidates and expect to enter into additional collaborations in the future. We have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of our product candidates and our ability to generate revenues from these arrangements will depend on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements. In addition, our collaborators have the right to abandon research or development projects and terminate applicable agreements, including funding obligations, prior to or upon the expiration of the agreed upon terms.

Collaborations involving our product candidates pose a number of risks, including:

- collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not perform their obligations as expected;
- collaborators may not pursue development and commercialization of our product candidates or may elect not to continue or renew development or commercialization programs, based on clinical trial results, changes in the collaborators' strategic focus or available funding or external factors, such as an acquisition, that divert resources or create competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- product candidates developed in collaboration with us, including in particular product candidates based on deuteration of a collaborator's marketed drugs or advanced clinical candidates, may be viewed by our collaborators as competitive with their own product candidates or products, which may cause collaborators to cease to devote resources to the commercialization of our product candidates;
- a collaborator with marketing and distribution rights to one or more products may not commit sufficient resources to the marketing and distribution of such product or products;
- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or termination of the research, development or commercialization of product candidates, might lead to additional responsibilities for us with respect to product candidates, or might result in litigation or arbitration, any of which would be time-consuming and expensive;
- collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential litigation;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability; and
- collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates.

Collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner or at all. If a collaborator of ours is involved in a business combination, it could decide to delay, diminish or terminate the development or commercialization of any product candidate licensed to it by us.

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***We expect to seek to establish additional collaborations, and if we are not able to establish them on commercially reasonable terms, we may have to alter our development and commercialization plans.***

Our drug development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. We are seeking a collaborator for CTP-499 and may seek one or more collaborators for the development and commercialization of one or more of our product candidates. We do not currently intend to conduct further clinical development of CTP-499 for the treatment of diabetic nephropathy absent such a collaboration.

We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. Those factors may include the potential differentiation of our product candidate from its corresponding non-deuterated analog, design or results of clinical trials, the likelihood of approval by the FDA or comparable foreign regulatory authorities and the regulatory pathway for any such approval, the potential market for the product candidate, the costs and complexities of manufacturing and delivering the product to patients and the potential of competing products. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available for collaboration and whether such collaboration could be more attractive than the one with us for our product candidate.

Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators. We are also restricted under the terms of certain of our existing collaboration agreements from entering into collaborations regarding or otherwise developing specified compounds that are similar to the compounds that are subject to those agreements and collaboration agreements that we enter into in the future may contain further restrictions on our ability to enter into potential collaborations or to otherwise develop specified compounds.

We may not be able to negotiate collaborations for CTP-499 or our other product candidates on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to limit the development of the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate product revenue. In cases where we seek a collaborator for a product compound that is a deuterated analog of a compound that has been previously developed, failure to enter into a collaboration with the developer of the corresponding non-deuterated compound may result in a loss of the potential to obtain clearance from the FDA to follow expedited development programs that reference and rely on findings previously obtained from the developer's prior non-clinical or clinical studies of the corresponding non-deuterated compound.

***We rely on third parties to conduct our clinical trials and some aspects of our research and non-clinical testing. If they terminate their relationships with us or do not perform satisfactorily, our business may be materially harmed.***

We do not independently conduct clinical trials of any of our product candidates. We rely on third parties, such as contract research organizations, clinical data management organizations, medical institutions and clinical investigators, to conduct these clinical trials and expect to rely on these third parties to conduct clinical trials of any other product candidate that we develop. We also rely on third parties to conduct some aspects of our research and non-clinical testing and expect to rely on these third parties in the future. Any of these third parties may terminate their engagements with us under certain circumstances. If any of our relationships with these third parties terminate, we may not be able to enter into arrangements with alternative third parties on commercially reasonable terms or at all. Switching to or adding additional third parties would involve additional cost and require management time and focus. In addition, there is a natural transition period when a new third party commences work, which could result in delays in our product development activities. Although we seek to carefully manage our relationships with our contract research organizations, any such challenges or delays could have a material adverse impact on our business, financial condition and prospects.

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Our reliance on these third parties for clinical development activities limits our control over these activities but we remain responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards. For example, notwithstanding the obligations of a contract research organization for a trial of one of our product candidates, we remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires us to comply with standards, commonly referred to as current Good Clinical Practices, or cGCPs, for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. The FDA enforces these cGCPs through periodic inspections of trial sponsors, principal investigators, clinical trial sites and institutional review boards. If we or our third party contractors fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA may require us to perform additional clinical trials before approving our product candidates, which would delay the marketing approval process. We cannot be certain that, upon inspection, the FDA will determine that any of our clinical trials comply with cGCPs.

Furthermore, these third parties are not our employees, and except for remedies available to us under our agreements with such contractors, we cannot control whether or not they devote sufficient time, skill and resources to our ongoing development programs. These contractors may also have relationships with other commercial entities, including our competitors, which could impede their ability to devote appropriate time to our clinical programs. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct their services in accordance with our contracts, regulatory requirements or our stated protocols, we may not be able to obtain, or may be delayed in obtaining, marketing approvals for our product candidates. If that occurs, we will not be able to, or may be delayed in our efforts to, successfully commercialize our product candidates. In such an event, our financial results and the commercial prospects for any product candidates that we seek to develop could be harmed, our costs could increase and our ability to generate revenues could be delayed, impaired or foreclosed.

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

We are also required to register clinical trials and post the results of completed clinical trials on a government-sponsored database, such as ClinicalTrials.gov, within certain timeframes. Failure to do so can result in the inability to report our clinical results in certain publications, fines, adverse publicity and civil and criminal sanctions.

***Because there are limited sources of deuterium, we, and our collaborators, are exposed to a number of risks and uncertainties associated with our deuterium supply.***

We believe that all of the deuterium that we use in manufacturing our product candidates is currently derived, directly or indirectly, from deuterium oxide. For most of our deuterium supply, we rely on bulk supplies of deuterium oxide which we currently source from multiple suppliers, including two located in North America, one of which is in the United States.

In order to internationally transport any deuterium oxide that we purchase from our current or potential future foreign suppliers, we, or our suppliers, may be required to obtain an export license from the country of origin and we may be required to obtain an International Import Certificate or other governmental approvals or assurances from the country of destination. We are also required to obtain an export license from the Nuclear Regulatory Commission before shipping deuterium oxide from the United States to any contract manufacturer in another country. Export licenses and certain other required documents may specify the maximum amount of deuterium oxide that we, or our suppliers, are permitted to either import or export. In order for us to obtain supplies of deuterium oxide from foreign suppliers, they may be required to obtain an export license from the country of origin and we may be required to obtain domestic governmental approvals or assurances. In addition, our current U.S. export licenses may be insufficient to meet our future requirements. We, or our suppliers, may not be able to obtain such licenses, approvals or assurances in a timely manner or at all.

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Certain of our manufacturing processes for our product candidates incorporate deuterium by using deuterated chemical intermediates or reagents that are derived from deuterium oxide. For the deuterated chemical intermediates and reagents, we are not subject to the license requirements applicable to deuterium oxide; however the manufacturer of the deuterated chemical intermediate or reagent may themselves be required to obtain deuterium oxide under applicable licensing requirements. Most of the manufacturers of these deuterated chemical intermediates and reagents are not located in countries that produce bulk quantities of deuterium oxide. Therefore, our ability to source these deuterated chemical intermediates will depend on the ability of these manufacturers to obtain deuterium oxide from other countries. In the future we may arrange for supplies of deuterated chemical intermediates or reagents from manufacturers located in countries from which they can source deuterium oxide in bulk. However, contract manufacturers in these countries may not represent a viable alternative to our current suppliers. We do not have long-term agreements with our suppliers of deuterated chemical intermediates or reagents and we obtain some of these deuterated chemical intermediates or reagents from single sources, putting us at risk of uncontrolled cost increases or supply interruptions if we cannot establish alternative sourcing arrangements. Deuterated chemical intermediates may be expensive or difficult to obtain or may be produced by specialized techniques that are not widely practiced and we may not be able to enter into arrangements for larger scale supply of deuterated chemical intermediates on acceptable terms, or at all.

We estimate that our current sources of deuterium oxide will be sufficient to meet our anticipated requirements; however, we do not have long-term agreements with our current suppliers. If we are not able to establish or maintain supply arrangements, or any relevant foreign governments decide to withhold authorizations for the export of deuterium oxide that we seek, we may be unable to secure alternative sources. If we are unable to obtain sufficient supplies of deuterium oxide from our current suppliers or our potential future foreign supplier, we would be forced to either seek alternative suppliers of deuterium oxide, likely in other countries, or alternative sources of deuterium. Such alternative supplies may not be available to us on acceptable terms or at all.

If we are unable to obtain sufficient supplies of deuterium, our ability to produce our product candidates would be impeded and our business, financial condition and prospects could be harmed. In particular, certain of our manufacturing processes are projected to require particularly large quantities of deuterium for late-stage clinical trials and for commercialization. Consequently, any adverse impact on our ability to obtain deuterium oxide from our current suppliers, import deuterium oxide into the United States or export deuterium oxide to our contract manufacturers could have a particularly severe impact on our ability to develop or commercialize those product candidates.

Similarly, to develop and commercialize any of our licensed product candidates, our collaborators will need to obtain supplies of deuterium and will be subject to risks and requirements in connection with sourcing deuterium that are similar to the ones that we face. In addition, if any of our product candidates is approved by the FDA, then the FDA will also have regulatory jurisdiction over the manufacture and use of deuterium oxide and deuterated chemical intermediates or reagents in such products. Any adverse impact on our, or our collaborators', ability to obtain deuterium could delay or prevent the development or commercialization of our product candidates, which could have a material adverse effect on our business.

***We contract with third parties for the manufacture and distribution of our product candidates for non-clinical and clinical testing and expect to continue to do so in connection with our future development and commercialization efforts. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.***

We currently have only very limited internal capabilities to manufacture our product candidates. We currently rely, and expect to continue to rely, on third party contractors to manufacture non-clinical and clinical supplies of our product candidates and to package, label and ship these supplies. We expect to rely on third party contractors to manufacture, package, label and distribute commercial quantities of any product candidate that we commercialize following approval for marketing by applicable regulatory authorities. Reliance on such third party contractors entails risks, including:

- manufacturing delays if our third party contractors give greater priority to the supply of other products over our product candidates or otherwise do not satisfactorily perform according to the terms of the agreements between us and them;
- the possible termination or nonrenewal of agreements by our third party contractors at a time that is costly or inconvenient for us;

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- the possible breach by the third party contractors of our agreements with them;
- the failure of third party contractors to comply with applicable regulatory requirements;
- the possible mislabeling of clinical supplies, potentially resulting in the wrong dose amounts being supplied or active drug or placebo not being properly identified;
- possible contamination of our product during its manufacture;
- possible interruptions in our contractors' operations, including departure of key personnel, disruption due to merger and acquisitions activities or supply chain disruptions;
- the possibility of clinical supplies not being delivered to clinical sites on time, leading to clinical trial interruptions, or of drug supplies not being distributed to commercial vendors in a timely manner, resulting in lost sales; and
- the possible misappropriation of our proprietary information, including our trade secrets and know-how.

If any of our product candidates are approved by any regulatory agency, we plan to enter into agreements with third party contract manufacturers for the commercial production and distribution of those products. It may be difficult for us to reach agreement with a contract manufacturer on satisfactory terms or in a timely manner, especially if the manufacturer believes it is uniquely suited to use our deuterium chemistry manufacturing processes or that our deuterium chemistry manufacturing processes bear greater production risks than manufacture of non-deuterated compounds. In addition, we may face competition for access to manufacturing facilities as there are a limited number of contract manufacturers operating under current good manufacturing practices, or cGMPs, that are capable of manufacturing our product candidates. Consequently, we may not be able to reach agreement with third party manufacturers on satisfactory terms, which could delay our commercialization efforts.

Third party manufacturers are required to comply with cGMPs and similar regulatory requirements outside the United States. Facilities used by our third party manufacturers must be approved by the FDA after we submit an NDA and before potential approval of the product candidate. Similar regulations apply to manufacturers of our product candidates for use or sale in foreign countries. We do not control the manufacturing process and are completely dependent on our third party manufacturers for compliance with the applicable regulatory requirements for the manufacture of our product candidates. If our manufacturers cannot successfully manufacture material that conforms to the strict regulatory requirements of the FDA and any applicable foreign regulatory authority, they will not be able to secure the applicable approval for their manufacturing facilities. If these facilities are not approved for commercial manufacture, we may need to find alternative manufacturing facilities, which could result in delays in obtaining approval for the applicable product candidate.

In addition, our manufacturers are subject to ongoing periodic inspections by the FDA and corresponding state and foreign agencies for compliance with cGMPs and similar regulatory requirements both prior to and following the receipt of marketing approval for any of our product candidates. Some of these inspections may be unannounced. Failure by any of our manufacturers to comply with applicable cGMPs or other regulatory requirements could result in sanctions being imposed on us, including fines, injunctions, civil penalties, delays, suspensions or withdrawals of approvals, operating restrictions, interruptions in supply and criminal prosecutions, any of which could significantly and adversely affect supplies of our product candidates and have a material adverse impact on our business, financial condition and results of operations.

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

## RISKS RELATED TO OUR INTELLECTUAL PROPERTY

*If we are unable to obtain and maintain sufficient patent protection for our product candidates, or if the scope of the patent protection is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our product candidates may be adversely affected.*

Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our proprietary product candidates. If we do not adequately protect our intellectual property, competitors may be able to erode or negate any competitive advantage we may have, which could harm our business and ability to achieve profitability. To protect our proprietary position, we file patent applications in the United States and abroad related to our novel product candidates that are important to our business. The patent application and approval process is expensive and time-consuming. We may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. Neither deuterium itself, nor the general concept of selective substitution of deuterium for hydrogen in existing compounds, are patentable; therefore we usually seek patents on a compound-by-compound basis or on a relatively narrow genus of compounds. We are not guaranteed that patents will issue protecting any particular deuterated compound for which we seek patent protection.

Our ability to obtain and maintain patent protection for our product candidates may be limited if disclosures of non-deuterated compounds are held to anticipate or make obvious claims of deuterated analogs of the same or similar compounds. In addition, several large pharmaceutical and biotechnology companies have begun to pursue patent protection for deuterated analogs of their products and product candidates, and may in the future obtain patent protection that covers deuterated analogs of those product candidates. If patents directed primarily to non-deuterated compounds are deemed to protect deuterated analogs of those compounds or patent claims on deuterated analogs of compounds become common in the biotechnology and pharmaceutical industries, these factors may limit, in part or in whole, our ability to seek and obtain patent protection for new product candidates based on deuterium modification of compounds. It may also limit in part or in whole, our ability to develop new product candidates based on deuterium modification of such compounds without obtaining a license from those patent holders.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain. No consistent policy regarding the breadth of claims allowed in biotechnology and pharmaceutical patents has emerged to date in the United States or in many foreign jurisdictions. In addition, the determination of patent rights with respect to pharmaceutical compounds commonly involves complex legal and factual questions, which has in recent years been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain.

Assuming the other requirements for patentability are met, currently, the first to file a patent application is generally entitled to the patent. However, prior to March 16, 2013, in the United States, the first to invent was entitled to the patent. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore we cannot be certain that we were the first to make the inventions claimed in our patents or pending patent applications, or that we were the first to file for patent protection of such inventions.

Moreover, we may be subject to a third party preissuance submission of prior art to the U.S. Patent and Trademark Office, or become involved in opposition, derivation, reexamination, inter partes review or interference proceedings, in the United States or elsewhere, challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or product candidates and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third party patent rights.

Our pending and future patent applications may not result in patents being issued which protect our product candidates, in whole or in part, or which effectively prevent others from commercializing competitive products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection. In addition, the laws of foreign countries may not protect our rights to the same extent or in the same manner as the laws of the United States. For example, European patent law restricts the patentability of methods of treatment of the human body more than United States law does.

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Even if our patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our patents by developing similar or alternative technologies or products in a non-infringing manner. Our competitors may also seek approval to market their own products similar to or otherwise competitive with our products. Alternatively, our competitors may seek to market generic versions of any approved products by submitting ANDAs to the FDA in which they claim that patents owned or licensed by us are invalid, unenforceable or not infringed. In these circumstances, we may need to defend or assert our patents, or both, including by filing lawsuits alleging patent infringement. In any of these types of proceedings, a court or other agency with jurisdiction may find our patents invalid or unenforceable, or that our competitors are competing in a non-infringing manner. Thus, even if we have valid and enforceable patents, these patents still may not provide protection against competing products or processes sufficient to achieve our business objectives.

The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our owned and licensed patents may be challenged in the courts or patent offices in the United States and abroad, including challenges through the U.S. Patent and Trademark Office post-grant review procedures. Such challenges may result in loss of exclusivity or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. In addition, given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized.

***If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially adversely affected and our business would be harmed.***

While we have obtained composition of matter patents with respect to our most advanced product candidates, our DCE Platform is not patented. In seeking to develop and maintain a competitive position through our DCE Platform and as to other aspects of our business, we rely on trade secrets, including unpatented know-how, technology and other proprietary information. We seek to protect these trade secrets, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our consultants, independent contractors, advisors, corporate collaborators, outside scientific collaborators, contract manufacturers, suppliers and other third parties. We also enter into confidentiality and invention or patent assignment agreements with employees and certain consultants. Any party with whom we have executed such an agreement may breach that agreement and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such third party, or those to whom they communicate such technology or information, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our business and competitive position could be harmed.

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

Competitors may infringe our patents, trademarks, copyrights or other intellectual property. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time consuming and divert the time and attention of our management and scientific personnel. In any patent infringement proceeding, there is a risk that a court will decide that a patent of ours is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of such patents is upheld, the court will construe the patent's claims narrowly or decide that we do not have the right to stop the other party from using the invention at issue on the grounds that our patent claims do not cover the invention. An adverse outcome in a litigation or proceeding involving our patents could limit our ability to assert our patents against those parties or other competitors, and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Any of these occurrences could adversely affect our competitive business position, business prospects and financial condition.

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Even if we establish infringement, the court may decide not to grant an injunction against further infringing activity and instead award only monetary damages, which may or may not be an adequate remedy. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during litigation. Moreover, there can be no assurance that we will have sufficient financial or other resources to file and pursue such infringement claims, which typically last for years before they are concluded. Even if we ultimately prevail in such claims, the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings.

***Third parties may sue us alleging that we are infringing their intellectual property rights, and such litigation could be costly and time consuming and could prevent or delay us from developing or commercializing our product candidates.***

Our commercial success depends, in part, on our ability to develop, manufacture, market and sell our product candidates and use our DCE Platform without infringing the intellectual property and other proprietary rights of third parties. Some of the non-deuterated compounds on which our product candidates are, or future product candidates may be, based are covered by issued patents or patent applications, the holders of which may attempt to assert claims against us. To date, we are not aware of any judicial decision holding that a patent that covers a non-deuterated compound should be construed to also cover deuterated analogs thereof, absent specific claims with respect to the deuterated analogs. Any such judicial decision, or legal proceedings asserting such claims, could increase the likelihood of potential infringement claims being asserted against us. If any third party patents or patent applications are found to cover our product candidates or their methods of use, we may not be free to manufacture or market our product candidates as planned without obtaining a license, which may not be available on commercially reasonable terms, or at all.

There is a substantial amount of intellectual property litigation in the biotechnology and pharmaceutical industries, and we may become party to, or threatened with, litigation or other adversarial proceedings regarding intellectual property rights with respect to our products candidates, including interference proceedings before the U.S. Patent and Trademark Office. Third parties may assert infringement claims against us based on existing or future intellectual property rights. The outcome of intellectual property litigation is subject to uncertainties that cannot be adequately quantified in advance. The pharmaceutical and biotechnology industries have produced a significant number of patents, and it may not always be clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we are sued for patent infringement, we would need to demonstrate that our product candidates, products or methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid or unenforceable, and we may not be able to do this. Proving invalidity is difficult. For example, in the United States, proving invalidity requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents. We may also assert that a patent claim for a corresponding non-deuterated compound does not cover our product. However, we are not aware of any judicial proceedings addressing the question of whether our product would be outside the scope of such a patent claim. Even if we are successful in these proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted in pursuing these proceedings, which could have a material adverse effect on us. In addition, we may not have sufficient resources to bring these actions to a successful conclusion.

If we are found to infringe a third party's intellectual property rights, we could be forced, including by court order, to cease developing, manufacturing or commercializing the infringing product candidate or product. Alternatively, we may be required to obtain a license from such third party in order to use the infringing technology and continue developing, manufacturing or marketing the infringing product candidate. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

## RISKS RELATED TO REGULATORY APPROVAL AND OTHER LEGAL COMPLIANCE MATTERS

***Even if we complete the necessary non-clinical studies and clinical trials the marketing approval process is expensive, time consuming and uncertain and we may not obtain approvals for the commercialization of some or all of our product candidates. As a result, we cannot predict when or if, and in which territories, we, or our collaborators, will obtain marketing approval to commercialize a product candidate.***

The research, testing, manufacturing, labeling, approval, selling, marketing, promotion and distribution of drug products are subject to extensive regulation by the FDA and comparable foreign regulatory authorities, which regulations differ from country to country. Failure to obtain marketing approval for a product candidate in a given territory will prevent us and our collaborators from commercializing the product candidate in that territory. Our product candidates are in various stages of development and are subject to the risks of failure inherent in drug development. We, and our collaborators, have not submitted an application for or received marketing approval for any of our product candidates in the United States or in any other jurisdiction. We have limited experience in filing and supporting the applications necessary to gain marketing approvals.

The process of obtaining marketing approvals, both in the United States and abroad, is lengthy, expensive and uncertain. It may take many years, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the product candidates involved. This is the case even though the deuterated compounds that we produce and seek to develop can have similar pharmacological properties as their corresponding non-deuterated compounds. Even if, as a result of any such similarities, we, or our collaborators, obtain clearance from the FDA and other regulatory authorities to follow expedited development programs for some deuterated compounds that reference and rely on previous findings for non-deuterated compounds, the review and approval of our product candidates may still take a substantial period of time.

In addition, changes in marketing approval policies during the development period, changes in or the enactment or promulgation of additional statutes, regulations or guidance or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. Regulatory authorities have substantial discretion in the approval process and may refuse to accept any application or may decide that our data are insufficient for approval and require additional non-clinical, clinical or other studies. In addition, varying interpretations of the data obtained from non-clinical and clinical testing could delay, limit or prevent marketing approval of a product candidate. Any marketing approval we, or our collaborators, ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable.

Any delay in obtaining or failure to obtain required approvals could materially adversely affect our ability or that of our collaborators to generate revenue from the particular product candidate, which likely would result in significant harm to our financial position and adversely impact our stock price.

***Failure to obtain marketing approval in international jurisdictions would prevent our product candidates from being marketed abroad.***

In order to market and sell our products in the European Union and many other jurisdictions, we, or our collaborators, must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The marketing approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many territories outside the United States, it is required that the product be approved for reimbursement before the product can be approved for sale in that territory. Our products may not receive commercially feasible prices in any given territory, or the price offered for our products in a territory may have an adverse effect on their prices in other territories if we were to accept. We, and our collaborators, may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA.

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***Even if we, or our collaborators, obtain marketing approvals for our product candidates, the terms of approvals and ongoing regulation of our products may limit how we, or they, manufacture and market our products, which could materially impair our ability to generate revenue.***

Once marketing approval has been granted, an approved product and its manufacturer and marketer are subject to ongoing review and extensive regulation. We, and our collaborators, must therefore comply with requirements concerning advertising and promotion for any of our product candidates for which we or they obtain marketing approval. Promotional communications with respect to prescription drugs are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved labeling. Thus, we and our collaborators will not be able to promote any products we develop for indications or uses for which they are not approved.

In addition, manufacturers of approved products and those manufacturers' facilities are required to comply with extensive FDA requirements, including ensuring that quality control and manufacturing procedures conform to cGMPs, which include requirements relating to quality control and quality assurance as well as the corresponding maintenance of records and documentation and reporting requirements. We, our contract manufacturers, our collaborators and their contract manufacturers could be subject to periodic unannounced inspections by the FDA to monitor and ensure compliance with cGMPs.

Accordingly, assuming we, or our collaborators, receive marketing approval for one or more of our product candidates, we, and our collaborators, and our and their contract manufacturers will continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production, product surveillance and quality control.

If we, and our collaborators, are not able to comply with post-approval regulatory requirements, we, and our collaborators, could have the marketing approvals for our products withdrawn by regulatory authorities and our, or our collaborators', ability to market any future products could be limited, which could adversely affect our ability to achieve or sustain profitability. Further, the cost of compliance with post-approval regulations may have a negative effect on our operating results and financial condition.

***Any of our product candidates for which we, or our collaborators, obtain marketing approval in the future could be subject to post-marketing restrictions or withdrawal from the market and we, or our collaborators, may be subject to substantial penalties if we, or they, fail to comply with regulatory requirements or if we, or they, experience unanticipated problems with our products following approval.***

Any of our product candidates for which we, or our collaborators, obtain marketing approval in the future, as well as the manufacturing processes, post-approval studies and measures, labeling, advertising and promotional activities for such product, among other things, will be subject to continual requirements of and review by the FDA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians and recordkeeping. Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, including the requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS.

The FDA may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of a product. The FDA and other agencies, including the Department of Justice, closely regulate and monitor the post-approval marketing and promotion of products to ensure that they are manufactured, marketed and distributed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding off-label use and if we, or our collaborators, do not market any of our product candidates for which we, or they, receive marketing approval for only their approved indications, we, or they, may be subject to warnings or enforcement action for off-label marketing. Violation of the FDCA and other statutes, including the False Claims Act, relating to the promotion and advertising of prescription drugs may lead to investigations or allegations of violations of federal and state health care fraud and abuse laws and state consumer protection laws.

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

- restrictions on such products, manufacturers or manufacturing processes;
- restrictions on the labeling or marketing of a product;
- restrictions on product distribution or use;
- requirements to conduct post-marketing studies or clinical trials;
- warning letters or untitled letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;
- fines, restitution or disgorgement of profits or revenues;
- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of products;
- product seizure; or
- injunctions or the imposition of civil or criminal penalties.

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

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

In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA, changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for physician administered drugs. In addition, this legislation provided authority for limiting the number of drugs that will be covered in any therapeutic class. Cost reduction initiatives and other provisions of this legislation could decrease the coverage and price that we receive for any approved products. While the MMA only addresses drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in reimbursement that results from the MMA may result in a similar reduction in payments from private payors.

More recently, in March 2010, President Obama signed into law the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively the PPACA.

Among the provisions of the PPACA of potential importance to our product candidates are the following:

- an annual, non-deductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program;
- expansion of healthcare fraud and abuse laws, including the False Claims Act and the Anti-Kickback Statute, new government investigative powers and enhanced penalties for noncompliance;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices;

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- extension of manufacturers' Medicaid rebate liability;
- expansion of eligibility criteria for Medicaid programs;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program new requirements to report financial arrangements with physicians and teaching hospitals;
- a new requirement to annually report drug samples that manufacturers and distributors provide to physicians; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

In addition, other legislative changes have been proposed and adopted since the PPACA was enacted. These changes included aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, starting in 2013. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws may result in additional reductions in Medicare and other healthcare funding.

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

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

Healthcare providers, physicians and third party payors will play a primary role in the recommendation and prescription of any products for which we obtain marketing approval. Our future arrangements with third party payors and customers, if any, will subject us to broadly applicable fraud and abuse and other healthcare laws and regulations. The laws and regulations may constrain the business or financial arrangements and relationships through which we market, sell and distribute any products for which we obtain marketing approval. These include the following:

- *Anti-Kickback Statute.* The federal healthcare anti-kickback statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation or arranging of, any good or service, for which payment may be made under a federal healthcare program such as Medicare and Medicaid;
- *False Claims Act.* The federal False Claims Act imposes criminal and civil penalties, including through civil whistleblower or *qui tam* actions, against individuals or entities for, among other things, knowingly presenting, or causing to be presented false or fraudulent claims for payment by a federal healthcare program or making a false statement or record material to payment of a false claim or avoiding, decreasing or concealing an obligation to pay money to the federal government, with potential liability including mandatory treble damages and significant per-claim penalties, currently set at \$5,500 to \$11,000 per false claim;
- *HIPAA.* The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters, and, as amended by the Health Information Technology for Economic and Clinical Health Act and its implementing regulations, also imposes obligations, including mandatory contractual terms and technical safeguards, with respect to maintaining the privacy, security and transmission of individually identifiable health information;

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- *Transparency Requirements.* Federal laws require applicable manufacturers of covered drugs to report payments and other transfers of value to physicians and teaching hospitals;
- *Controlled Substances Act.* The CSA regulates the handling of controlled substances such as JZP-386 and, potentially, CTP-354; and
- *Analogous State and Foreign Laws.* Analogous state and foreign fraud and abuse laws and regulations, such as state anti-kickback and false claims laws can apply to sales or marketing arrangements and claims involving healthcare items or services and are generally broad and are enforced by many different federal and state agencies as well as through private actions.

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

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

***If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on our business.***

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. From time to time and in the future, our operations may involve the use of hazardous materials, including chemicals and biological materials, and may also produce hazardous waste products. Even if we contract with third parties for the disposal of these materials and waste products, we cannot completely eliminate the risk of contamination or injury resulting from these materials. In the event of contamination or injury resulting from the use or disposal of our hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

We maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, but this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. Current or future environmental laws and regulations may impair our research, development or production efforts, which could adversely affect our business, financial condition, results of operations or prospects. In addition, failure to comply with these laws and regulations may result in substantial fines, penalties or other sanctions.

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

In some countries, such as the countries of the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take

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considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we, or our collaborators, may be required to conduct a clinical trial that compares the cost-effectiveness of our product to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be materially harmed.

### **RISKS RELATED TO EMPLOYEE MATTERS AND MANAGING GROWTH**

*Our future success depends on our ability to retain our Chief Executive Officer and other key executives and to attract, retain and motivate qualified personnel.*

Our industry has experienced a high rate of turnover of management personnel in recent years. Our ability to compete in the highly competitive biotechnology and pharmaceuticals industries depends upon our ability to attract and retain highly qualified managerial, scientific and medical personnel. We are highly dependent on the pharmaceutical research and development and business development expertise of Roger D. Tung, our President and Chief Executive Officer, as well as the other principal members of our management, scientific and development team. Although we have formal employment agreements with our executive officers, these agreements do not prevent them from terminating their employment with us at any time. In addition, although we maintain a key-man insurance policy with respect to Dr. Tung, we do not carry key-man insurance on any of our other executive officers or employees and may not carry any key-man insurance in the future.

If we lose one or more of our executive officers, our ability to implement our business strategy successfully could be seriously harmed. Furthermore, replacing executive officers may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to develop, gain marketing approval of and commercialize products successfully. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these additional key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to develop and commercialize product candidates will be limited.

*We expect to grow our organization and, as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.*

As our pipeline grows and matures, we expect to experience significant growth in the number of our employees and the scope of our operations, including in the areas of drug manufacturing, regulatory affairs and sales, marketing and distribution. Our management may need to divert a disproportionate amount of its attention away from our day-to-day activities to devote time to managing these growth activities. To manage these growth activities, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. Moreover, the expected expansion of our operations may lead to significant costs and may divert our business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

### **RISKS RELATED TO OUR COMMON STOCK**

*The price of our common stock may be volatile and fluctuate substantially, which could result in substantial losses for purchasers of our common stock.*

The trading price of our common stock has been, and may continue to be, volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control. The stock market in general and the market for smaller pharmaceutical and biotechnology companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. The market price for our common stock may be influenced by many factors, including:

- the success of existing or new competitive products or technologies;

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- the timing, advancement of and results of non-clinical studies and clinical trials of any of our product candidates;
- commencement or termination of collaborations for our development programs;
- failure, delays, changes to or discontinuation of any of our development programs;
- regulatory or legal developments in the United States and other countries;
- regulatory actions relating to our product candidates;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- disclosures by our collaborators relating to our product candidates or competitive programs;
- merger or acquisition activity of our collaborators;
- the level of expenses related to any of our product candidates or clinical development programs;
- the results of our efforts to develop additional product candidates or products;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- announcement or expectation of additional financing efforts;
- receipt or expectation of receipt of revenues such as milestones, royalties, grants and license fees;
- sales of our common stock by us, our insiders or other stockholders;
- programmed trading based on technical stock chart or other inputs;
- portfolio restructuring by large shareholders;
- addition or removal of our stock from stock indices;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in estimates or recommendations by securities analysts that cover our stock;
- actions by short-sellers or supporters of our stock, including social media postings or reports;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry and market conditions; and
- the other factors described in this “Risk Factors” section.

***An active trading market for our common stock may not be sustained.***

Although we have listed our common stock on The NASDAQ Global Market, an active trading market for our common stock may not be sustained. In the absence of an active trading market for our common stock, investors may not be able to sell their common stock at or above the price at which they acquired their shares or at the times that they would like to sell. An inactive trading market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

***We have broad discretion in the use of our cash reserves and may not use them effectively.***

Our management will have broad discretion to use our cash reserves and could use our cash reserves in ways that do not improve our results of operations or enhance the value of our common stock. The failure by our management to

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apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our common stock to decline and delay the development of our product candidates. Pending their use, we may invest our cash reserves in a manner that does not produce income or that loses value.

***We are an “emerging growth company,” and the reduced disclosure requirements applicable to emerging growth companies may make our common stock less attractive to investors.***

We are an “emerging growth company,” as defined in the JOBS Act, and may remain an emerging growth company for up to five years. For so long as we remain an emerging growth company, we are permitted and plan to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, or SOX Section 404, not being required to 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, reduced disclosure obligations regarding executive compensation and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved. We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we are subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

***We will continue to incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices.***

As a public company, we are incurring and expect to incur additional significant legal, accounting and other expenses that we did not incur as a private company. We expect that these expenses will further increase after we are no longer an “emerging growth company.” The Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of The NASDAQ Global Market and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. We expect that we will need to hire additional personnel to comply with the requirements of being a public company, and our management and other personnel will need to devote a substantial amount of time towards maintaining compliance with these requirements. These requirements will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. We are currently evaluating these rules and regulations, and cannot predict or estimate the amount of additional costs we may incur or the timing of such costs. These rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

Pursuant to SOX Section 404 we are required to evaluate the effectiveness of our internal control over financial reporting as of the end of each fiscal year and to report on this evaluation in our Annual Report on Form 10-K for the year. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. We will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that we will not be able to conclude that our internal control over financial reporting is effective as required by SOX Section 404. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements.

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***A significant portion of our total outstanding shares may be sold into the market in the near future, which could cause the market price of our common stock to decline significantly, even if our business is doing well.***

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares of common stock intend to sell shares, could reduce the market price of our common stock. Of the 21,708,004 shares of our common stock outstanding as of April 30, 2015, 4,979,826 shares are currently subject to restrictions on transfer under 90-day lock-up arrangements with the underwriters for our March 2015 public offering. These restrictions are due to expire on June 17, 2015, resulting in these shares becoming eligible for public sale on June 18, 2015 if they are registered under the Securities Act of 1933, as amended, which we refer to as the Securities Act, or if they qualify for an exemption from registration under the Securities Act, including under Rule 144 or 701.

The balance of our outstanding shares of common stock may be freely sold in the public market at any time to the extent permitted by Rules 144 and 701 under the Securities Act or to the extent such shares have already been registered under the Securities Act and are held by non-affiliates of ours.

In addition, as of April 30, 2015, there were 2,666,301 shares subject to outstanding options under our equity compensation plans, all of which shares we have registered under the Securities Act on a registration statement on Form S-8. These shares will be able to be freely sold in the public market upon exercise, as permitted by any applicable vesting requirements, except to the extent they are held by our affiliates, in which case such shares will become eligible for sale in the public market as permitted by Rule 144 under the Securities Act. Furthermore, as of April 30, 2015, there were 70,796 shares subject to an outstanding warrant to purchase common stock. These shares will become eligible for sale in the public market, to the extent such warrant is exercised, as permitted by Rule 144 under the Securities Act. Moreover, holders of a substantial portion of our outstanding common stock have rights, subject to conditions, to require us to file registration statements covering their shares or, along with the holder of our outstanding warrant to purchase common stock, to include their shares in registration statements that we may file for ourselves or other stockholders.

***We do not anticipate paying any cash dividends on our capital stock in the foreseeable future, accordingly, stockholders must rely on capital appreciation, if any, for any return on their investment.***

We have never declared or paid cash dividends on our capital stock. We currently plan to retain all of our future earnings, if any, to finance the operation, development and growth of our business. Furthermore, the terms of our debt facility with Hercules preclude us from paying dividends, and any future debt agreements may also preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for our stockholders for the foreseeable future.

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

As of March 31, 2015, our executive officers and directors, combined with our stockholders who owned more than 5% of our outstanding common stock, and their affiliates, in the aggregate, beneficially owned shares representing approximately 37.6% of our capital stock. As a result, if these stockholders were to choose to act together, they would be able to substantially influence all matters submitted to our stockholders for approval, as well as our management and affairs. For example, these persons, if they choose to act together, would substantially influence the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. This concentration of ownership control may:

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

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

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

- establish a classified board of directors such that all members of the board are not elected at one time;
- allow the authorized number of our directors to be changed only by resolution of our board of directors;
- limit the manner in which stockholders can remove directors from the board;
- establish advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted on at stockholder meetings;
- require that stockholder actions must be effected at a duly called stockholder meeting and prohibit actions by our stockholders by written consent;
- limit who may call a special meeting of stockholder meetings;
- authorize our board of directors to issue preferred stock without stockholder approval, which could be used to institute a “poison pill” that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our board of directors; and
- require the approval of the holders of at least 75% of the votes that all our stockholders would be entitled to cast to amend or repeal certain provisions of our charter or bylaws.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. This could discourage, delay or prevent someone from acquiring us or merging with us, whether or not it is desired by, or beneficial to, our stockholders.

***If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our share price and trading volume could decline.***

The trading market for our common stock depends on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. There can be no assurance that analysts will cover us, or provide favorable coverage. If one or more analysts downgrade our stock or change their opinion of our stock, our share price may decline. In addition, if one or more analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

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

We effected the initial public offering, or IPO, of our common stock through a Registration Statement on Form S-1 (File No. 333-193335) that was declared effective by the Securities and Exchange Commission, or the SEC, on February 12, 2014, and a registration statement on Form S-1 (File No. 333-193920) filed pursuant to Rule 462(b) of the Securities Act of 1933, as amended, which we refer to as the Securities Act, that became effective on February 12, 2014. The net offering proceeds to us, after deducting underwriting discounts and commissions and offering expenses, were approximately \$83.1 million.

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As of April 30, 2015, we estimate that we have used approximately \$58.4 million of the net proceeds primarily to fund the development of CTP-354, to advance and expand the research and preclinical development of additional product candidates and for working capital, capital expenditures and other general corporate purposes. None of the net proceeds were paid directly or indirectly to directors or officers of ours or their associates or to persons owning 10 percent or more of our common stock or to any affiliate of ours, other than payments in the ordinary course of business to officers for salaries and to non-employee directors as compensation for board or board committee service. We have invested the balance of the net proceeds from the offering in cash equivalents and other short-term investments in accordance with our investment policy. There has been no material change in our planned use of the balance of the net proceeds from the offering as described in our final prospectus filed with the SEC pursuant to Rule 424(b) under the Securities Act.

**Item 6. Exhibits.**

The exhibits listed in the Exhibit Index to this Quarterly Report on Form 10-Q are incorporated herein by reference.

**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.

CONCERT PHARMACEUTICALS, INC.

Date: May 11, 2015

By: /s/ Ryan Daws

Ryan Daws  
Chief Financial Officer

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**Exhibit Index**

<b><u>Exhibit number</u></b>	<b><u>Description</u></b>
10.1*†	Amendment No. 1, dated February 26, 2015, to Development and License Agreement dated February 26, 2013 by and between the Registrant and Jazz Pharmaceuticals Ireland Limited.
10.2*†	Patent Assignment Agreement, dated September 8, 2011, by and between the Registrant and Auspex Pharmaceuticals, Inc.
31.1*	Chief Executive Officer — Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Chief Financial Officer — Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1*	Chief Executive Officer — Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2*	Chief Financial Officer — Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

\* Filed herewith.

† Confidential treatment requested as to certain portions, which portions have been omitted and filed separately with the Securities and Exchange Commission.

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Double asterisks denote omissions.

**AMENDMENT NO. 1 TO  
DEVELOPMENT AND LICENSE AGREEMENT**

This Amendment No. 1 (the "Amendment") is entered into as of February 26, 2015 (the "Effective Date") and amend that DEVELOPMENT AND LICENSE AGREEMENT (the "Agreement") dated February 26, 2013 by and between CONCERT PHARMACEUTICALS, INC., a Delaware corporation, with its principal place of business at 99 Hayden Avenue, Suite 500, Lexington, MA 02421, USA ("Concert"), and JAZZ PHARMACEUTICALS IRELAND LIMITED, an Irish company, with its principal place of business at Fourth Floor, Connaught House, One Burlington Road, Dublin 4, Ireland ("Jazz").

WHEREAS, Jazz and Concert now wish to amend certain provisions of the Agreement solely as related to the clinical trial (the "Study") under protocol number [\*\*] entitled [\*\*] as set forth herein.

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

The parties hereby agree that, solely for purposes of the Study, Section 6.2 of the Agreement shall be replaced with the following:

**6.2 Concert Development and Manufacturing Activities.**

(A) Jazz shall fund [\*\*] of (i) all internal FTE costs (at the FTE Rate) and FTE-Related Costs, without markup, as incurred by Concert to conduct its activities in connection with the Study and in accordance with the Development Plan as amended in accordance with the Agreement and (ii) all amounts reasonably paid by Concert to Third Parties, except for [\*\*], without markup, to conduct the activities in accordance with the Study and the Development Plan as amended in accordance with the Agreement.

(B) Notwithstanding anything to the contrary, with respect to any amounts due to [\*\*], the parties understand that the task order and each change order (if any) from [\*\*] for services to conduct the Study will include an original cost for the services (the "Full Costs") as well as a discounted cost to be paid by Concert reflecting an adjustment for costs being absorbed by [\*\*]. Jazz agrees that it will fund services provided by [\*\*] in an amount equal to [\*\*] of the Full Costs, without markup.

(C) Within [\*\*] days after the end of each month in which Concert incurs costs for which Jazz is required to pay Concert under this Section 6.2, Concert shall provide Jazz with an invoice and reasonable supporting documentation for such costs. Jazz shall pay each such invoice within [\*\*] days after receipt thereof, except to the extent disputed by Jazz in good faith (in which case, Jazz shall pay any amount determined to be payable within [\*\*] days after the resolution of such dispute. Jazz shall notify Concert if it disputes any portion of any such invoice prior to the due date for payment.

All other terms and conditions of the Agreement remain in full force and effect.

**IN WITNESS WHEREOF**, the Parties have executed this Amendment No. 1 to the Development and License Agreement by their duly authorized officers as of the Effective Date.

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**JAZZ PHARMACEUTICALS IRELAND LIMITED**

**CONCERT PHARMACEUTICALS, INC.**

By: /s/ Paul Treacy

By: /s/ Ryan Daws

Name: Paul Treacy

Name: Ryan Daws

Title: Director

Title: CFO

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Double asterisks denote omissions.

*Execution Copy*

## PATENT ASSIGNMENT AGREEMENT

This PATENT ASSIGNMENT AGREEMENT (this "*Agreement*") is entered into as of September 8, 2011 (the "*Effective Date*") by and between AUSPEX PHARMACEUTICALS, INC., a Delaware corporation with its registered office at 3366 North Torrey Pines Court, Suite 225, La Jolla, California, 92037 ("*Auspex*"), and CONCERT PHARMACEUTICALS, INC., a Delaware corporation, with its registered office at 99 Hayden Avenue, Suite 500, Lexington, MA 02421 ("*Concert*"). Auspex and Concert are sometimes referred to herein individually as a "*Party*" and collectively as the "*Parties*".

### RECITALS

**WHEREAS**, Concert owns U.S. Patent Application Serial Number 12/283,290, which is entitled "Deuterated Pirfenidone", was filed on September 10, 2008, and was published as US20090131485 on May 21, 2009 (such patent application, the "*Assigned Patent*"); and

**WHEREAS**, Concert desires to assign the Assigned Patent to Auspex, and Auspex desires to obtain such assignment.

**NOW THEREFORE**, in consideration of the foregoing premises and the mutual promises, covenants and conditions contained in this Agreement, the Parties hereby agree as follows:

### ARTICLE 1

#### DEFINITIONS.

As used herein, the following terms shall have the following meanings:

**1.1 "*Affiliate*"** shall mean, with respect to either Party, any person, firm, trust, corporation, partnership or other entity or combination thereof that directly or indirectly controls, is controlled by or is under common control with such Party; the term "control" (including, with correlative meaning, the terms "controlled by" or "under common control with") meaning direct or indirect ownership of fifty percent (50%) or more, including ownership by trusts with substantially the same beneficial interests, of the voting and equity rights of such person, firm, trust, corporation, partnership or other entity or combination thereof, or the power to direct the management of such person, firm, trust, corporation, partnership or other entity or combination thereof.

**1.2 "*Assigned Patent*"** shall have the meaning assigned in the first recital above.

**1.3 "*Asset Purchase Agreement*"** shall mean any asset purchase agreement Auspex enters into wherein it sells to a Third Party all of Auspex's assets necessary to commercialize a Product in the U.S. For clarity, an Asset Purchase Agreement does not include any agreement that is entered into as part of, or otherwise results in, an Auspex Change of Control.

**1.4 "*Auspex Change of Control*"** shall occur if Auspex shall sell, convey, exclusively license or otherwise dispose of all or substantially all of its property or business or merge with or into or consolidate with any other corporation, limited liability company or other entity (other

than a wholly-owned subsidiary of Auspex), or if any other transaction occurs which results in (assuming an immediate and maximum exercise/conversion of all derivative securities issued in the transaction) the stockholders of Auspex immediately prior to the transaction owning less than 50% of the voting stock of Auspex immediately following the transaction, unless the holders of at least 60% of the Preferred Stock of Auspex, voting together as a single class on an as-converted to Common Stock basis, affirmatively elect not to treat the transaction as a triggering event for the payment of liquidation preferences under the Certificate of Incorporation of Auspex, provided, however, that none of the following shall be considered an Auspex Change of Control: (a) a merger effected exclusively for the purpose of changing the domicile of Auspex or (b) a transaction in which the stockholders of Auspex immediately prior to the transaction own 50% or more of the voting stock of the surviving corporation (or, if the surviving corporation is a wholly owned subsidiary, its parent) following the transaction (taking into account only stock of Auspex held by such stockholders prior to the transaction).

**1.5 “Auspex Change of Control Consideration”** means, with respect to the first Auspex Change of Control to occur during the term of this Agreement, the sum of (a) the aggregate amount of all cash and the fair market value of all securities and/or other property paid or payable on or after the closing of the Auspex Change of Control as consideration for or with respect to an Auspex Change of Control, including without limitation all amounts paid or payable, distributed or distributable or issued or issuable to stockholders of Auspex on or after the closing of the Auspex Change of Control and/or holders of convertible securities, options, warrants, stock appreciation rights or similar rights or securities in Auspex, whether vested or unvested (collectively, the “**Securityholders**”), including any consideration subject to an earn-out provision, escrow agreement or similar arrangement which is actually paid to Auspex or to the Securityholders following the achievement of the conditions relating to such earn-out provision, the expiration of the escrow agreement or satisfaction of a similar arrangement, and the aggregate amount of any indebtedness for money borrowed that is outstanding as of the closing of such Auspex Change of Control and/or assumed, retired or defeased by the surviving entity resulting from such Auspex Change of Control, in each case as consideration for or with respect to such Change of Control, and (b) any consideration that would have otherwise been paid to stockholders of Auspex at the closing of such Auspex Change of Control but for the payment obligations described in Section 3.4 of this Agreement. If Auspex is the surviving entity in the Auspex Change of Control and the issuer of equity securities held by the stockholders of Auspex immediately prior to the date of the Auspex Change of Control remains unchanged as a result of the Auspex Change of Control, then the Auspex Change of Control Consideration shall include (in addition to the amounts specified above) Auspex’s reasonable estimate of the fair market value of the Common Stock of Auspex, Preferred Stock of Auspex, and options, warrants or other rights to purchase Preferred Stock or Common Stock of Auspex owned by the stockholders of Auspex immediately following the consummation of the Auspex Change of Control.

**1.6 “Auspex Indemnitee”** has the meaning set forth in Section 6.2.

**1.7 “Combination Product”** shall mean any pharmaceutical product which contains (a) deuterated pirfenidone and (b) at least one other ingredient which is Therapeutically Active.

**1.8 “Concert Indemnitee”** has the meaning set forth in Section 6.1.

**1.9 “Confidential Information”** shall mean any and all Information that (a) is disclosed by Auspex or its Affiliates to Concert or its Affiliates under this Agreement, whether in oral, written, graphic, or electronic form, or (b) concerns the Assigned Patent or the inventions disclosed or claimed therein.

**1.10 “European Union” or “EU”** shall mean the European Union member states as then constituted. As of the Effective Date, the European Union member states are Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.

**1.11 “Effective Date”** shall mean the date first written above.

**1.12 “Indemnitee”** means either an Auspex Indemnitee or a Concert Indemnitee.

**1.13 “Information”** shall mean information, results and data whatsoever, in any tangible or intangible form, including without limitation, inventions, practices, methods, techniques, specifications, formulations, formulae, copyrights, software, knowledge, know-how, skill, experience, trade secrets, ideas, concepts, processes, protocols, materials, samples, analytical and quality control data, any other results of experimentation and testing, studies, procedures, drawings, and legal information and descriptions, and all intellectual property rights therein.

**1.14 “Inventors”** has the meaning set forth in Section 2.2.

**1.15 “License Agreement”** shall mean any license agreement Auspex enters into wherein it grants a Third Party a license to sell a Product in the U.S. For clarity, a License Agreement does not include any agreement that is entered into as part of, or otherwise results in, an Auspex Change of Control.

**1.16 “Net Sales”** means the revenue actually invoiced by Auspex or its Affiliates for the sale in the U.S., by Auspex or its Affiliates to Third Parties that are not sublicensees of the selling party, of Products for which the deuterated pirfenidone contained therein or the manufacture or use of such deuterated pirfenidone is claimed, at the time of sale, by a Valid Claim, less the following amounts, all as determined in accordance with U.S. generally accepted accounting principles as consistently applied by Auspex and all to the extent relating to such U.S. sales of Products: uncollectible amounts or reasonable reserves accrued therefor (it being understood that any subsequent reductions in such accrual amounts due to collections in subsequent periods shall be included in Net Sales when such reductions occur), transportation charges, commissions, rebates, retroactive price reductions, discounts, credits, allowances (including, without limitation, charge backs from wholesalers), adjustments, insurance, and sales, VAT, use and other taxes based on sales prices, but not including taxes assessed on income derived from such sales. For the purpose of determining royalties due to Concert, Net Sales shall calculate Net Sales of Combination Products by multiplying Net Sales of such Combination Product by a fraction  $A/(A+B)$ , where A is the sale price of the Product portion of such Combination Product when sold separately and B is the sale price of the other Therapeutically Active ingredient(s) in such Combination Product when sold separately; provided, however, that

if the Product portion of such Combination Product or any of the other Therapeutically Active ingredients in such Combination Product is not then sold separately, then Auspex shall calculate Net Sales of such Combination Products by the fraction  $C/(C+D)$ , where C is the fair market value of the Product portion of such Combination Product (as determined by an independent expert mutually agreed upon by the Parties if the Parties are unable to mutually agree on such fair market value) and D is the fair market value of the other Therapeutically Active ingredients in such Combination Product (as determined by an independent expert mutually agreed upon by the Parties if the Parties are unable to mutually agree on such fair market value).

**1.17 “North America”** shall mean the U.S., Canada and Mexico.

**1.18 “Payment Term”** has the meaning set forth in Section 3.3.

**1.19 “Product”** shall mean any pharmaceutical product containing deuterated pirfenidone.

**1.20 “Responsible Executive”** shall mean the Chief Executive Officer or duly appointed representative thereof.

**1.21 “Sublicense”** shall mean either a License Agreement or an Asset Purchase Agreement.

**1.22 “Sublicense Revenue”** shall mean any revenue received by Auspex and its Affiliates pursuant to a Sublicense as compensation for any license or sale, as applicable, of the right to sell in the U.S. Products for which the deuterated pirfenidone contained therein or the manufacture or use of such deuterated pirfenidone is claimed, at the time such revenue is earned by Auspex and its Affiliates, by a Valid Claim, including upfront payments, milestone payments, and royalty payments but excluding any revenue received: (a) for equity or debt securities of Auspex, to the extent that such consideration does not exceed the then-current fair market value of such securities; (b) as reasonable cost-based funding for research, development, manufacturing or commercialization activities undertaken by or on behalf of Auspex following the execution of the Sublicense; (c) for the right to sell such Products with respect to countries or jurisdictions other than the United States; (d) with respect to products other than such Products, provided that the Parties shall meet and negotiate in good faith to agree upon any allocation of revenue between such Product and such other products; (e) as a bona-fide loan, provided that any loan amounts that are forgiven shall be included in Sublicense Revenue; or (f) as reimbursement for patent, trademark or other expenses incurred by Auspex following execution of the Sublicense.

**1.23 “Sublicense Revenue Attributable To The U.S.”** shall mean:

(a) in the case of a Sublicense in which the right to sell Products is limited to the U.S., [\*\*] percent ([\*\*]%) of the Sublicense Revenue received by Auspex and its Affiliates pursuant to such Sublicense; or

(b) in the case of a Sublicense which includes the right to sell Products in the U.S. as well as in one or more additional countries or jurisdictions:

(i) with respect to any Sublicense Revenue received by Auspex and its Affiliates pursuant to such Sublicense that is attributable only to such additional countries or jurisdictions and is not attributable to the U.S. portion of such rights, such as royalty payments for sales of Products in such additional countries or jurisdictions, [\*\*] ([\*\*]%) of such Sublicense Revenue received by Auspex and its Affiliates;

(ii) with respect to any Sublicense Revenue received by Auspex and its Affiliates pursuant to such Sublicense that is attributable only to the U.S. portion of such rights, such as royalty payments for sales of Products in the U.S., [\*\*] percent ([\*\*]%) of such Sublicense Revenue received by Auspex and its Affiliates;

(iii) with respect to any Sublicense Revenue received by Auspex and its Affiliates pursuant to such Sublicense that is attributable to both the U.S. portion of such rights and such additional countries or jurisdictions:

(A) where such Sublicense includes the right to sell Products in all countries and jurisdictions, [\*\*] percent ([\*\*]%) of such Sublicense Revenue received by Auspex and its Affiliates;

(B) where such Sublicense only includes the right to sell Products in the U.S. and the EU, [\*\*] percent ([\*\*]%) of such Sublicense Revenue received by Auspex and its Affiliates;

(C) where such Sublicense only includes the right to sell Products in the U.S. and Japan, [\*\*] percent ([\*\*]%) of such Sublicense Revenue received by Auspex and its Affiliates;

(D) where such Sublicense only includes the right to sell Products in North America, [\*\*] percent ([\*\*]%) of such Sublicense Revenue received by Auspex and its Affiliates; or

(E) where such Sublicense only includes the right to sell Products in a combination of the U.S. plus other countries or jurisdictions that is not specifically addressed in (A)-(D) above, the percentage of such Sublicense Revenue received by Auspex and its Affiliates [\*\*].

**1.24 “Therapeutically Active”** shall mean that the ingredient is biologically active but shall not include diluents, vehicles, or specific adjuvants or any other ingredient which does not have any, or which has only incidental, therapeutic properties when present alone.

**1.25 “Third Party”** shall mean a person or entity other than (a) Auspex or its Affiliates, or (b) Concert or its Affiliates.

**1.26 “U.S.”** shall mean the United States of America, including all possessions and territories thereof.

**1.27 “Valid Claim”** shall mean:

(a) a claim of an issued and unexpired U.S. patent owned by Auspex or its Affiliates, including any issued and unexpired patent issuing from the Assigned Patent, that (i) is entitled to a priority date of [\*\*], (ii) claims deuterated pifrenidone or its manufacture or use, (iii) has not lapsed, been cancelled, rejected or revoked, or been held to be invalid or unenforceable by an unappealed or unappealable decision or judgment of a U.S. federal court of competent jurisdiction or the United States Patent and Trademark Office, and (iv) has not been abandoned, disclaimed or admitted to be invalid or unenforceable through reissue or disclaimer; or

(b) a pending claim in a pending U.S. patent application owned by Auspex or its Affiliates, including the Assigned Patent, that (i) is entitled to a priority date of [\*\*], (ii) claims deuterated pifrenidone or its manufacture or use, and (iii) has not been finally determined to be unallowable by an unappealed or unappealable decision of the United States Patent and Trademark Office.

## ARTICLE 2

### ASSIGNMENT TO AUSPEX

**2.1 Assignment.** Concert hereby assigns to Auspex all right, title and interest in and to the Assigned Patent. On or about the Effective Date, Concert shall execute the Assignment of Patents and Patent Applications attached hereto as **Exhibit A** as evidence of such assignment.

**2.2 Cooperation.** As a result of the assignment pursuant to Section 2.1 above, Auspex shall be the sole owner of the Assigned Patent and shall have sole control and discretion over the filing, prosecution, maintenance, abandonment, enforcement and defense of the Assigned Patent as well as all patent applications claiming priority thereto and all patents arising from any of the foregoing. Concert agrees to undertake any actions and execute and deliver any documents and instruments that are reasonably necessary to perfect Auspex's title in and to the Assigned Patent. At Auspex's request, Concert shall use reasonable efforts to make the inventors of the Assigned Patent (the "**Inventors**") available to Auspex to provide reasonable assistance with respect to such filing, prosecution, maintenance, abandonment, enforcement or defense. In the event that Concert or the Inventors do not, for any reason, perform such acts or execute any documents or instruments within a reasonable time of Auspex's request, Concert hereby irrevocably appoints Auspex as Concert's attorney-in-fact for the purpose of executing such documents on Concert's behalf, which appointment is coupled with an interest.

**2.3 Transfer of Patent Files.** Within [\*\*] after the Effective Date, Concert shall provide Auspex with all documents in its possession or the possession of its outside patent counsel with respect to the filing, prosecution or infringement of the Assigned Patent (including inventorship and patentability analyses) or the conception, reduction to practice or assignment by the inventors, of the inventions disclosed or claimed in the Assigned Patent, including without limitation all files concerning the Assigned Patent, as such files are maintained by Concert and its outside patent counsel.

## ARTICLE 3

## COMMERCIAL TERMS

## 3.1 Royalties.

(a) **Royalty Rate.** Subject to Sections 3.1(b) and 3.4(d), Auspex shall pay to Concert, within [\*\*] after the end of each calendar quarter during the applicable Payment Term, royalties equal to [\*\*] percent ([\*\*]%) of the Net Sales invoiced during such calendar quarter on account of sales of Products in the U.S.

(b) **Royalty Reduction for Third Party License.** If Auspex reasonably determines that it is necessary to acquire rights to intellectual property owned by a Third Party in order to develop, manufacture, use, import, sell or otherwise commercialize the Product in the U.S., Auspex or its Affiliate shall have the right to acquire such rights through a license or otherwise and Auspex shall deduct, from the royalty payments due to Concert under this Agreement, an amount equal to [\*\*] percent ([\*\*]%) of the royalties paid by Auspex and its Affiliates to such Third Party(ies) with respect to the U.S.; *provided, however*, that in no event shall the reduction provided for in this Section 3.1(b) reduce the royalties payable to Concert during any calendar quarter by more than [\*\*] percent ([\*\*]%).

(c) **Royalty Reports and Payments.** Each payment of royalties shall be accompanied by a statement of the amount of Net Sales invoiced during the applicable calendar quarter, containing reasonable detail regarding the calculation of the royalties and the underlying sales data. Auspex shall also provide such a statement with respect to each calendar quarter for which no royalty payment is owed because Auspex's remaining credit pursuant to Section 3.4(d) exceeds the amount of the royalties that would otherwise be due to Concert, after application of Section 3.1(b), on account of Net Sales for such calendar quarter; each such statement shall specify the amount of credit that remains after deduction of such royalty amount.

**3.2 Sublicense Revenue.** If Auspex in its sole discretion enters into a Sublicense, subject to Section 3.4(d), Auspex shall pay to Concert, within [\*\*] after the end of each calendar quarter during the applicable Payment Term, [\*\*] percent ([\*\*]%) of the Sublicense Revenue Attributable To The U.S. that is received by Auspex and its Affiliates during such calendar quarter. Each such payment shall be accompanied by a statement of the amount of Sublicense Revenue received during such calendar quarter, and all other information reasonably necessary to determine the appropriate amount of such payment. Auspex shall also provide such a statement with respect to each calendar quarter for which no Sublicense Revenue-based payment is owed because Auspex's remaining credit pursuant to Section 3.4(d) exceeds the amount of the Sublicense Revenue-based payment that would otherwise be due to Concert pursuant to this Section 3.2 on account of Sublicense Revenue Attributable To The U.S. that is received by Auspex and its Affiliates during such calendar quarter; each such statement shall specify the amount of credit that remains after deduction of such amount. If such payment or statement is for Sublicensing Revenue that is the last payment that Auspex is entitled to receive under (a) a License Agreement in which the Third Party's license to sell a Product in the U.S. is exclusive and not limited to a particular indication or field or (b) an Asset Purchase Agreement, then such payment or statement shall be accompanied by notice of such fact (such notice, the "*Final*

*Sublicense Revenue Payment Notice*). This Agreement shall expire upon Concert's receipt of such payment or statement and accompanying Final Sublicense Revenue Payment Notice, and Auspex will not have any further payment obligations to Concert.

**3.3 Payment Term.** Auspex's payment obligations under Sections 3.1 and 3.2 above with respect to a particular Product shall commence on the Effective Date and expire upon the expiration of the last to expire Valid Claim claiming the deuterated pirfenidone contained in such Product or the manufacture or use of such deuterated pirfenidone (such period, the "**Payment Term**"). For clarity, no payments are owed pursuant to Section 3.1 or 3.2 at any time when there is no Valid Claim claiming (i) the deuterated pirfenidone contained in the Product (1) sold in the U.S. by Auspex or its Affiliate (in the case of payments pursuant to Section 3.1) or (2) that is the subject of such Sublicense (in the case of payments pursuant to Section 3.2) or (ii) the manufacture or use of such deuterated pirfenidone.

**3.4 Auspex Change of Control Payment.**

(a) If an Auspex Change of Control occurs during the term of this Agreement, then, with respect solely to the first such Auspex Change of Control to occur during the term of this Agreement, Auspex shall pay to Concert, as described in greater detail in this Section 3.4, the equivalent of [\*\*] percent ([\*\*]%) of the value of Auspex Change of Control Consideration that is attributable to the United States pirfenidone rights. Because the world-wide pirfenidone rights are accepted by the Parties hereto to be [\*\*] percent ([\*\*]%) of Auspex's total value and the United States pirfenidone rights are accepted by the Parties hereto to be [\*\*] percent ([\*\*]%) of the world-wide pirfenidone rights, the equivalent of [\*\*] percent ([\*\*]%) of the value of Auspex Change of Control Consideration attributable to the United States pirfenidone rights is equal to [\*\*], which equals one and forty-four-one hundredths percent (1.44%) of the Auspex Change of Control Consideration. Within [\*\*] after the consummation of the Auspex Change of Control, provided that as of the date of the Auspex Change of Control there is at such time at least one Valid Claim that claims the deuterated pirfenidone contained in a Product or the manufacture or use of such deuterated pirfenidone, Auspex shall pay to Concert one and forty-four-one hundredths percent (1.44%) of the Auspex Change of Control Consideration that is distributed to Auspex or its Securityholders at the closing of the Auspex Change of Control in respect of such Securityholders' ownership of Common Stock of Auspex, Preferred Stock of Auspex, and options, warrants or other rights to purchase Preferred Stock or Common Stock of Auspex. In addition, as soon as administratively practicable (but in any event within [\*\*]) following each date on which any subsequent additional portion of the Auspex Change of Control Consideration becomes available for distribution as a result of an actual payment of such portion of the Auspex Change of Control Consideration to Auspex or its Securityholders in respect of such Securityholders' ownership of Common Stock of Auspex, Preferred Stock of Auspex, and options, warrants or other rights to purchase Preferred Stock or Common Stock of Auspex or the release of any Auspex Change of Control Consideration subject to an escrow or other contingency arrangement from the applicable escrow or contingency arrangement (each, a "**Subsequent Payment Date**"), Auspex shall pay to Concert one and forty-four-one hundredths percent (1.44%) of the Auspex Change of Control Consideration that is distributed to Auspex or its Securityholders on such Subsequent Payment Date.

(b) The payments required by this Section 3.4 shall be payable in the same form and proportion as the relevant Auspex Change of Control Consideration that triggers the applicable payment under this Section 3.4; *provided, however*, that [\*\*], any or all of the payments required to be paid pursuant to this paragraph may be [\*\*].

(c) If, at any time during the term of this Agreement, the stockholders of Auspex and its Affiliates are no longer eligible for additional distributions of Auspex Change of Control Consideration in respect of such stockholders' ownership of Common Stock of Auspex, Preferred Stock of Auspex, and options, warrants or other rights to purchase Preferred Stock or Common Stock of Auspex, then Auspex shall provide notice of such fact to Concert (such notice, the "***Final Change of Control Consideration Payment Notice***"). Provided that Auspex has made all payments under this Section 3.4 with respect to Auspex Change of Control Consideration distributed to stockholders of Auspex and its Affiliates prior to the date of such Final Change of Control Consideration Payment Notice, Auspex will not have any further payment obligations to Concert pursuant to this Section 3.4 after Concert's receipt of such Final Change of Control Consideration Payment Notice, even if a subsequent Auspex Change of Control occurs during the term of this Agreement.

(d) Auspex shall automatically be entitled to a credit equal to the sum of all payments made pursuant to this Section 3.4. Such credit may be applied solely towards any royalty payments that become due in accordance with Section 3.1 or Sublicense Revenue-based payments that become due in accordance with Section 3.2 after the payment amount pursuant to this Section 3.4 giving rise to the credit has been made to Concert. Auspex shall not have any obligation to make any payments pursuant to Section 3.1 or 3.2 at any time when it has any unused credit for any payment made pursuant to this Section 3.4 that is in excess of the payments otherwise due pursuant to Section 3.1 or 3.2.

(e) For the avoidance of doubt, nothing contained in this Agreement is intended to create or convey to Concert any equity or ownership interest in Auspex or any rights commonly associated with any such interest, including, but not limited to, the right to vote on any matters put before Auspex's stockholders. This Agreement and the rights hereunder do not constitute securities of Auspex.

(f) For clarity, Auspex does not have any payment obligations pursuant to this Section 3.4 if, as of the Auspex Change of Control, there is no Valid Claim claiming the deuterated pirfenidone contained in a Product or the manufacture or use of such deuterated pirfenidone.

(g) Neither Auspex nor any of its Affiliates shall enter into or execute any agreement or instrument in connection with, or otherwise cooperate with or permit, the first Auspex Change of Control transaction to occur during the term of this Agreement unless Auspex and its Affiliates make proper provision so that the acquiring entity and any other entity succeeding to any rights of Auspex or its Affiliates in the Product in the United States assume and succeed to the obligations of Auspex set forth in this Section 3.4 and, prior to or simultaneously with the consummation of such Auspex Change of Control transaction, Auspex delivers to Concert instrument(s) of assumption for the benefit of Concert effecting the assumption and succession described in this Section 3.4(g).

**3.5 Records and Audit.** For a period of [\*\*] after Net Sales is invoiced or Sublicense Revenue or Auspex Change of Control Consideration is received, Auspex shall keep complete and accurate records pertaining to the applicable revenue invoiced or received, in sufficient detail to permit Concert to confirm the accuracy of all payments made hereunder. Concert shall have the right to cause an independent, certified public accountant to audit such records to confirm Auspex's payments pursuant to Sections 3.1, 3.2 and 3.4; *provided, however*, that such auditor shall execute a confidentiality agreement with Auspex in customary form and shall only disclose to Concert whether Auspex paid Concert the correct amounts pursuant to Sections 3.1, 3.2 and 3.4 during the audit period and if not, any information necessary to explain the source of the discrepancy. If such audit determines that Auspex paid Concert less than the amount properly due and such determination is not subject to a good faith dispute, then Auspex shall promptly pay Concert an amount equal to such underpayment, and if the amount underpaid exceeds [\*\*] percent ([\*\*]%) of the amount actually due over the audited period, Auspex shall also reimburse Concert for the reasonable costs of such audit (including the fees and expenses of the certified public accountant). In the event such audit determines that Auspex paid Concert more than the amount properly due in respect of any quarter, then Concert shall promptly issue a refund to Auspex of such overpayment. Such audits may be exercised only [\*\*] and only once with respect each payment period, within [\*\*] after the payment period to which such records relate, upon reasonable advance notice to Auspex and during normal business hours. The terms of this Section 3.5 shall survive any expiration of this Agreement for a period of [\*\*].

**3.6 Withholding of Taxes.** Each Party shall be solely responsible for the payment of all taxes imposed on its share of income arising directly or indirectly from the efforts of the Parties under this Agreement. Any withholding of taxes levied by tax authorities on the payments by Auspex to Concert hereunder shall be borne by Concert and deducted by Auspex from the sums otherwise payable by it hereunder for payment to the proper tax authorities on behalf of Concert. Auspex agrees to cooperate with Concert in the event Concert claims exemption from such withholding or seeks deductions under any double taxation or other similar treaty or agreement from time to time in force, such cooperation to consist of providing receipts of payment of such withheld tax or other documents reasonably available to Concert.

## ARTICLE 4

### CONFIDENTIALITY

**4.1 Confidentiality.** Except to the extent expressly authorized by this Agreement or otherwise agreed in writing by Auspex, Concert agrees that it shall keep confidential and shall not publish or otherwise disclose and shall not use for any purpose other than as provided for in this Agreement any Confidential Information unless Concert can demonstrate by competent proof that such Confidential Information:

(a) was already known to Concert or its Affiliate, other than under an obligation of confidentiality, at the time of disclosure by Auspex or its Affiliate; provided, however, that this subsection shall not apply to Confidential Information that relates to the Assigned Patent and was known by Concert or its Affiliate as of the Effective Date;

(b) was generally available to the public or otherwise part of the public domain at the time of its disclosure to Concert or its Affiliate;

(c) became generally available to the public or otherwise part of the public domain after its disclosure and other than through any act or omission of Concert or its Affiliate in breach of this Agreement;

(d) was disclosed to Concert without any obligation of confidentiality by a Third Party who had a legal right to make such disclosure and who did not obtain such information directly or indirectly from Auspex or its Affiliate; or

(e) was independently discovered or developed by Concert or its Affiliate without access to or aid, application or use of Confidential Information, as evidenced by a contemporaneous writing.

**4.2 Authorized Disclosure.** Concert or its Affiliate may disclose Confidential Information to the extent such disclosure is reasonably necessary to comply with applicable laws, governmental regulations or court orders. In the event Concert or its Affiliate is legally required to make a disclosure of Confidential Information, Concert shall give reasonable advance notice to Auspex of such required disclosure so that Auspex may seek a protective order or other measure preventing or limiting the required disclosure or if, as between the Parties, only Concert is permitted to seek such order or measure, so that Concert may reasonably consider doing so at Auspex's request and expense.

**4.3 Terms of this Agreement.** The Parties agree that the material financial terms of this Agreement shall be considered confidential information of both Parties and that each Party shall keep such terms confidential unless otherwise agreed by the Parties; provided, however, that either Party may disclose such terms in confidence to any bona fide potential or actual investor, lender, acquiror, licensee and other financial or commercial partner solely for the purpose of evaluating or participating in a potential or actual investment, loan, acquisition, license or collaboration. The Parties will consult with one another and use reasonable efforts to agree on the provisions of this Agreement to be redacted in any filings required to be made by either Party with the Securities and Exchange Commission or as otherwise required by law, provided that each Party shall have the right to make any required disclosures as it deems necessary in order to comply with applicable laws and regulations, the rules of any stock exchange and other legal requirements.

**4.4 Attorney-Client Privilege.** Concert is not waiving, and will not be deemed to have waived or diminished, any of its attorney work product protections, attorney-client privileges or similar protections and privileges as a result of disclosing Confidential Information concerning the Assigned Patent or the inventions disclosed or claimed therein to Auspex, regardless of whether Concert has asserted, or is or may be entitled to assert, such privileges and protections. The Parties (a) share a common legal and commercial interest in all of such Confidential Information that is subject to such privileges and protections; (b) are or may become joint defendants in actions, suits or proceedings to which the Confidential Information covered by such protections and privileges relates; (c) intend that such privileges and protections remain intact should either Party become subject to any actual or threatened actions, suits or

proceedings to which the Confidential Information covered by such protections and privileges relates; and (d) intend that after the Effective Date that Auspex shall have the right to assert such protections and privileges. Neither Party shall admit, claim or contend, in actions, suits or proceedings involving either Party or otherwise, that Concert waived any of its attorney work-product protections, attorney-client privileges or similar protections and privileges with respect to any information, documents or other material concerning the Assigned Patent due to Concert disclosing such Confidential Information to Auspex.

## ARTICLE 5

### REPRESENTATIONS AND WARRANTIES

**5.1 Mutual Representations and Warranties.** Each Party hereby represents, warrants and covenants to the other Party as follows:

**(a) Corporate Existence and Power.** It is a corporation duly organized, validly existing and in good standing under the laws of the jurisdiction in which it is incorporated, and has full corporate power and authority and the legal right to own and operate its property and assets and to carry on its business as it is now being conducted and as contemplated by this Agreement, including without limitation, the right to grant the rights granted hereunder.

**(b) Authority and Binding Agreement.** As of Effective Date, (i) it has the corporate power and authority and the legal right to enter into this Agreement and perform its obligations hereunder; (ii) it has taken all necessary corporate action on its part required to authorize the execution and delivery of the Agreement and the performance of its obligations hereunder; and (iii) the Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid and binding obligation of such Party that is enforceable against it in accordance with its terms.

**5.2 Further Representations and Warranties by Concert.** Concert hereby further represents, warrants and covenants to Auspex as follows:

**(a) Patents and Patent Applications.**

(i) The Assigned Patent is the only U.S. patent or patent application owned or controlled by Concert as of the Effective Date that relates specifically to deuterated pifrenidone, its manufacture or use, or pharmaceutical products containing deuterated pifrenidone.

(ii) The manufacture, use, import or sale of deuterated pifrenidone would not infringe any U.S. patent or patent application (as if the pending claims were issued) specifically relating to deuterated pifrenidone, its manufacture or use, or pharmaceutical products containing deuterated pifrenidone, other than the Assigned Patent, that Concert owns or controls as of the Effective Date.

**(b) Assigned Patent.** As of the Effective Date, Concert is the sole owner of the entire right, title and interest in and to the Assigned Patent. Concert represents that it has the full and legal rights and authority to assign to Auspex the Assigned Patent.

**(c) Obligation to Assign.** All individuals who have performed research for Concert regarding deuterated pirlfenidone or the Assigned Patent have assigned to Concert all inventions and other intellectual property arising from such research.

**(d) No Conflict.** Concert has not entered, and shall not enter, into any agreement with any Third Party that is in conflict with the rights granted to Auspex under this Agreement, and has not taken and shall not take any action that would in any way prevent it from granting the rights granted to Auspex under this Agreement, or that would otherwise conflict with or adversely affect the rights granted to Auspex under this Agreement. Its performance and execution of this Agreement does not and will not result in a breach of any other contract to which it is a party. It is aware of no action, suit, inquiry or investigation instituted by any Third Party that threatens the validity of this Agreement.

**(e) No Third Party Rights.** No Third Party has or has ever had any license, option, lien or other rights or interest in or to the Assigned Patent.

**(f) Third Party Intellectual Property.** To Concert's knowledge as of the Effective Date, no intellectual property of any Third Party was infringed or misappropriated during the creation of the intellectual property that is the subject matter of the Assigned Patent.

**5.3 Disclaimers.** EXCEPT AS OTHERWISE SET FORTH IN THIS AGREEMENT, NEITHER PARTY MAKES, AND EACH PARTY HEREBY DISCLAIMS, ANY AND ALL REPRESENTATIONS AND WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, WITH RESPECT TO THE SUBJECT MATTER OF THIS AGREEMENT, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT AND ANY WARRANTY ARISING OUT OF PRIOR COURSE OF DEALING AND USAGE OF TRADE.

## ARTICLE 6

### INDEMNIFICATION

**6.1 Indemnification by Auspex.** Auspex shall indemnify, defend and hold Concert and its Affiliates and their respective officers, directors, trustees, employees, agents and their respective successors, heirs and assigns (collectively, the "**Concert Indemnitees**") harmless from and against all damages, costs, expenses and other liabilities, including reasonable attorney's fees and court costs (collectively, "**Losses**"), incurred by Concert Indemnitees in connection with any Third Party claim, action, suit or proceeding (collectively, "**Claims**") to the extent that such Claims arise out of, are based on, or result from (a) the breach of any of Auspex's obligations under this Agreement, including Auspex's representations and warranties, covenants and agreements set forth herein; (b) the willful misconduct or negligent or reckless acts, in

connection with this Agreement, of Auspex, its Affiliates, or the officers, directors, employees, or agents of Auspex or its Affiliates; or (c) the manufacture, use, offer for sale, sale or importation of any pharmaceutical product containing deuterated pirfenidone by Auspex, its Affiliates, licensees or sublicensees; *except*, in each case, to the extent such Losses result from the intentional misconduct, gross negligence or recklessness of any of the Concert Indemnitees or breach by Concert of any of its obligations under this Agreement.

**6.2 Indemnification by Concert.** Concert shall indemnify, defend and hold Auspex and its Affiliates and their respective officers, directors, trustees, employees, agents and their respective successors, heirs and assigns (collectively, the "*Auspex Indemnitees*") harmless from and against all Losses incurred by Auspex Indemnitees in connection with any Claim to the extent that such Claims arise out of, are based on, or result from (a) the breach of any of Concert's obligations under this Agreement, including Concert's representations and warranties, covenants and agreements set forth herein; or (b) the willful misconduct or negligent or reckless acts, in connection with this Agreement, of Concert, its Affiliates, or the officers, directors, employees, or agents of Concert or its Affiliates; *except*, in each case, to the extent such Losses result from the intentional misconduct, gross negligence or recklessness of any of the Auspex Indemnitees or breach by Auspex of any of its obligations under this Agreement.

**6.3 Procedure.** To be eligible to be so indemnified as described in this Article 6, each of the Indemnitees seeking to be indemnified shall provide the indemnifying Party with prompt notice of any claim (with a description of the claim and the nature and amount of any such loss) giving rise to the indemnification obligation pursuant to Sections 6.1 or 6.2, as the case may be, and the exclusive ability to defend such claim (with the reasonable cooperation of Indemnitee(s)). Each Indemnitee(s) shall have the right to retain its own counsel, at its own expense, if representation of the counsel of the indemnifying Party would be inappropriate due to actual or potential differing interests between such Indemnitee(s) and the indemnifying Party. Neither the Indemnitee(s) nor the indemnifying Party shall settle or consent to the entry of any judgment with respect to any claim for losses for which indemnification is sought without the prior written consent of the other Party (not to be unreasonably withheld or delayed); *provided however*, that the indemnifying Party shall have the right to settle or compromise any claim for losses without such prior written consent if the settlement or compromise provides for a full and unconditional release of the Indemnitee(s) and is not materially prejudicial to any Indemnitee's rights.

## ARTICLE 7

### TERM; EXPIRATION.

**7.1 Term.** The term of this Agreement shall commence upon the Effective Date and shall expire on the earliest of (a) expiration of the last Valid Claim and (b) Concert's receipt of a Final Sublicense Revenue Payment Notice pursuant to Section 3.2.

**7.2 Accrued Rights; Surviving Obligations.** Expiration of this Agreement shall not affect any accrued rights of either Party. The terms of Section 3.5, this Section 7.2, and Articles 4 and 6 of this Agreement shall survive expiration of this Agreement.

**ARTICLE 8**

**GOVERNING LAW; DISPUTE RESOLUTION.**

**8.1 Governing Law.** This Agreement shall be governed by the laws of the State of New York, excluding its choice of law rules.

**8.2 Legal Compliance.** The Parties shall review in good faith and cooperate in taking such actions to ensure compliance of this Agreement with all applicable laws.

**8.3 Dispute Resolution.**

(a) In the event of any dispute arising out of or related to this Agreement or any alleged breach hereof, the Parties shall refer such dispute to their respective Responsible Executive for attempted resolution by good faith negotiations within [\*\*] after such referral is made. In the event such officers are unable to resolve such dispute within such [\*\*] period, either Party may invoke the provisions of Section 8.3(b).

(b) Except as provided in Section 8.3(a), any claim or controversy arising out of or related to this Agreement or any breach hereof shall be submitted to a state or federal court of competent jurisdiction.

**ARTICLE 9**

**GENERAL PROVISIONS.**

**9.1 Notices.** Any notice required or permitted to be given under this Agreement shall be in writing, shall specifically refer to this Agreement, and shall be addressed to the appropriate Party at the address specified below or such other address as may be specified by such Party in writing in accordance with this Section 9.1, and shall be deemed to have been given for all purposes (a) when received, if hand-delivered or sent by confirmed facsimile or a reputable courier service, or (b) five (5) business days after mailing, if mailed by first class certified or registered airmail, postage prepaid, return receipt requested.

All notices to Auspex shall be addressed as follows:

Auspex Pharmaceuticals, Inc.  
3366 North Torrey Pines Court, Suite 225  
La Jolla, California, 92037  
Attn: Chief Executive Officer  
Fax: (858) 558-2401

With a copy to (which shall not constitute notice):

Cooley LLP  
Five Palo Alto Square  
3000 El Camino Real  
Palo Alto, CA 94306  
Attn: Marya A. Postner, Ph.D.  
Fax: (650) 849-7400

All notices to Concert shall be addressed as follows:

Concert Pharmaceuticals, Inc.  
99 Hayden Avenue, Suite 500,  
Lexington, MA 02421  
Attn: Chief Executive Officer  
Fax: (781) 674-5309

With a copy to (which shall not constitute notice):

Wilmer Cutler Pickering Hale and Dorr LLP  
60 State Street  
Boston, MA 02109  
Attn: Steven D. Barrett, Esq.  
Fax: (617) 526-5000

**9.2 Force Majeure.** Both Parties shall be excused from the performance of their obligations under this Agreement to the extent that such performance is prevented by force majeure and the non-performing Party promptly provides notice of the prevention to the other Party. Such excuse shall continue for so long as the condition constituting force majeure continues and the non-performing Party takes reasonable efforts to remove the condition. For purposes of this Agreement, force majeure shall include conditions beyond the control of the Parties, including an act of God, war, civil commotion, terrorist act, epidemic, failure or default of public utilities or common carriers, destruction of production facilities or materials by fire, earthquake, storm or like catastrophe, and failure of plant or machinery (provided that such failure could not have been prevented by the exercise of skill, diligence, and prudence that would be reasonably and ordinarily expected from a skilled and experienced person engaged in the same type of undertaking under the same or similar circumstances).

**9.3 Entire Agreement; Amendment.** This Agreement, including the Exhibits hereto, sets forth the complete, final and exclusive agreement and all of the covenants, promises, agreements, warranties, representations, conditions and understandings between the Parties hereto with respect to the subject matter hereof and supersedes, as of the Effective Date, all prior and contemporaneous agreements and understandings between the Parties with respect to the subject matter hereof. There are no covenants, promises, agreements, warranties, representations, conditions or understandings, either oral or written, between the Parties with respect to the subject matter of this Agreement other than as are set forth in this Agreement, including the Exhibits. No subsequent alteration, amendment, change or addition to this Agreement shall be binding upon the Parties unless reduced to writing and signed by an authorized officer of each Party.

**9.4 Non-Waiver.** The failure of a Party in any one or more instances to insist upon strict performance of any of the terms and conditions of this Agreement shall not be construed as a waiver or relinquishment, to any extent, of the right to assert or rely upon any such terms or conditions on any future occasion.

**9.5 Independent Contractors.** Each Party shall act solely as an independent contractor, and nothing in this Agreement shall be construed to give either Party the power or authority to act for, bind, or commit the other Party in any way. Nothing herein shall be construed to create the relationship of partners, principal and agent, or joint-venture partners between the Parties.

**9.6 Severability.** If any one or more of the provisions of this Agreement is held to be invalid or unenforceable by any court of competent jurisdiction from which no appeal can be or is taken, the provision shall be considered severed from this Agreement and shall not serve to invalidate any remaining provisions hereof. The Parties shall make a good faith effort to replace any invalid or unenforceable provision with a valid and enforceable one such that the objectives contemplated by the Parties when entering this Agreement may be realized.

**9.7 Assignment.**

(a) This Agreement and the rights and obligations under this Agreement may not be assigned, delegated, or otherwise transferred, in whole or in part, by operation of law or otherwise, by either Party without the other Party's express prior written consent; *provided, however*, that either Party may assign its rights or delegate its obligations under this Agreement without such consent to (a) its Affiliate or (b) its successor in interest in connection with any merger, consolidation, or sale of all or substantially all of the assets of such party. In the event of such assignment by Auspex that occurs concurrently with or following the grant of a Sublicense, Auspex (i.e., the original Party to this Agreement) shall remain liable for all payment obligations to Concert pursuant to Section 3.2 with respect to such Sublicense to the extent such assignee does not fulfill such payment obligations. In the event of such assignment by Auspex that occurs concurrently with or following an Auspex Change of Control, Auspex (i.e., the original Party to this Agreement) shall remain liable for all payment obligations to Concert pursuant to Section 3.4 with respect to such Auspex Change of Control to the extent such assignee does not fulfill such payment obligations.

(b) In the event of such assignment by Auspex that is to an Affiliate of Auspex and not concurrently with or following an Auspex Change of Control, the terms "Auspex" and "Party" in this Agreement shall, for purposes of determining Auspex's subsequent obligations to Concert pursuant to Section 3.4, be understood to refer to such Affiliate and to each direct and indirect parent company of such Affiliate (i.e., a subsequent change of control event of such Affiliate or any of its direct or indirect parent companies shall constitute an Auspex Change of Control if the definition of Auspex Change of Control is otherwise satisfied if such Affiliate or direct or indirect parent is substituted for Auspex in the definition of Auspex Change of Control), and Auspex (i.e., the original Party to this Agreement) shall remain liable for all

payment obligations to Concert pursuant to Section 3.4 with respect to such Auspex Change of Control only for so long as Auspex is a direct or indirect parent company of such Affiliate, following which time all payment obligations hereunder shall be the responsibility of such assignee and not (Auspex (i.e., the original Party to this Agreement). In the event of an assignment by Auspex to an Affiliate pursuant to this subsection (b) wherein in connection with such assignment such Affiliate also receives only those of Auspex's assets necessary to commercialize a Product, each reference to 1.44% in Section 3.4 would thereafter be replaced with [\*\*]% (in reflection that world-wide pirfenidone rights would be equal to [\*\*]% of such Affiliate's total value rather than the [\*\*]% set forth in Section 3.4). In the event of an assignment by Auspex to an Affiliate pursuant to this subsection (b) wherein in connection with such assignment such Affiliate would receive assets in addition to those of Auspex's assets necessary to commercialize a Product, the Parties would work in good faith to agree in writing to the value of the world-wide pirfenidone rights as a percentage of the total value of the Affiliate and such percentage would thereafter be substituted in lieu of [\*\*]% into the formula set forth in Section 3.4 and the result of such calculation shall be the percentage of such Auspex Change of Control Consideration to be paid, in lieu of 1.44%, to Concert on account of such Auspex Change of Control. In the event that the Parties hereto are unable to agree to such value as a percentage of the total value within [\*\*] of such assignment, then the Parties agree to jointly designate an appraiser that shall determine such value as a percentage of the total value, which shall thereafter be binding upon the Parties and such percentage would thereafter be substituted in lieu of [\*\*]% into the formula set forth in Section 3.4 and the result of such calculation shall be the percentage of such Auspex Change of Control Consideration to be paid, in lieu of 1.44%, to Concert on account of such Auspex Change of Control. The costs associated with such appraisal shall be shared equally by the Parties.

(c) Any successor or assignee of rights and/or obligations permitted hereunder (including payment obligations) shall, in writing to the other Party, expressly assume performance of such rights and/or obligations. In the case of any permitted assignment or transfer of or under this Agreement, this Agreement shall be binding upon, and inure to the benefit of, the successors, executors, heirs, representatives, administrators and assigns of the Parties hereto and the assigning Party shall remain liable for the obligations of its successor or assignee as set forth herein. Any attempted assignment, delegation, or transfer in violation of the foregoing will be null and void. For clarity, Auspex is free to assign, transfer and grant licenses or other rights to the Assigned Patent in its sole discretion and without the consent of Concert, and nothing in this Section 9.7 shall be interpreted as a limitation on such assignment, transfer or grant. Notwithstanding anything to the contrary in the foregoing, Auspex shall not assign this Agreement to any Affiliate or Third Party unless Auspex also assigns all Valid Claims to such Affiliate or Third Party.

**9.8 Performance by Affiliates.** Each Party may discharge any obligations and exercise any right hereunder through any of its Affiliates. Each Party hereby guarantees the performance by its Affiliates of such Party's obligations under this Agreement, and shall cause its Affiliates to comply with the provisions of this Agreement in connection with such performance. Any breach by a Party's Affiliate of any of such Party's obligations under this Agreement shall be deemed a breach by such Party, and the other Party may proceed directly against such Party without any obligation to first proceed against such Party's Affiliate.

**9.9 Expenses.** Each of the Parties will bear its own direct and indirect expenses (including legal and accounting fees), if any, incurred in connection with the negotiation and preparation of this Agreement and, except as set forth in this Agreement, the performance of the obligations contemplated hereby and thereby.

**9.10 No Strict Construction; Interpretation; Headings.** In the event an ambiguity or a question of intent or interpretation arises, this Agreement will be construed as if drafted jointly by the Parties and no presumption or burden of proof will arise favoring or disfavoring either Party by virtue of the authorship of any provisions of this Agreement. The language in this Agreement is to be construed in all cases according to its fair meaning. The definitions of the terms herein apply equally to the singular and plural forms of the terms defined. The headings of each Article and Section in this Agreement have been inserted for convenience of reference only and are not intended to limit or expand on the meaning of the language contained in the particular Article or Section.

**9.11 Limitation of Liability.** EXCEPT FOR DAMAGES AVAILABLE FOR BREACHES OF CONFIDENTIALITY OBLIGATIONS UNDER SECTION 4 AND THE INDEMNIFICATION RIGHTS AND OBLIGATIONS UNDER SECTION 6, NEITHER PARTY NOR ITS AFFILIATES AND THEIR RESPECTIVE OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, AND REPRESENTATIVES WILL BE LIABLE FOR, NOR WILL THE MEASURE OF DAMAGES INCLUDE ANY INCIDENTAL, SPECIAL, CONSEQUENTIAL, INDIRECT OR PUNITIVE DAMAGES ARISING OUT OF OR RELATING TO ITS PERFORMANCE OR FAILURE TO PERFORM UNDER THIS AGREEMENT, REGARDLESS OF THE BASIS ON WHICH A PARTY IS ENTITLED TO CLAIM DAMAGES, WHETHER IN CONTRACT OR TORT (INCLUDING BREACH OF WARRANTY, NEGLIGENCE AND STRICT LIABILITY), EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES IN ADVANCE.

**9.12 Counterparts.** This Agreement may be executed in one or more counterparts, each of which shall be an original and all of which shall constitute together the same document. Copies of original signature pages sent by facsimile and/or PDF shall have the same effect as signature pages containing original signatures.

*[Remainder of Page Intentionally Left Blank]*

**IN WITNESS WHEREOF**, the Parties hereto have duly executed this Agreement.

**AUSPEX PHARMACEUTICALS, INC.**

**CONCERT PHARMACEUTICALS, INC.**

/s/ Lawrence C. Fritz

/s/ Roger D. Tung

By:

By:

Name: Lawrence C. Fritz

Name: Roger D. Tung

Title: President & CEO

Title: President & CEO

[Signature Page to Patent Assignment Agreement]

**EXHIBIT A**

**ASSIGNMENT OF PATENTS AND PATENT APPLICATIONS**

**WHEREAS, CONCERT PHARMACEUTICALS, INC.**, a Delaware corporation, with its registered office at 99 Hayden Avenue, Suite 500, Lexington, MA 02421 ("**Concert**") is the owner of certain inventions which are disclosed in the patents, patent applications and/or provisional patent applications identified on **Schedule 1** attached hereto; and

**WHEREAS, AUSPEX PHARMACEUTICALS, INC.**, a Delaware corporation with its registered office at 3366 North Torrey Pines Court, Suite 225, La Jolla, California, 92037 ("**Auspex**") desires to acquire the entire, exclusive right, title and interest in and to said inventions and any and all patents to be obtained therefor.

**NOW, THEREFORE**, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Concert does hereby assign, sell and transfer unto Auspex, its successors and assigns, the entire, exclusive right, title and interest in and to said inventions, in any form or embodiment thereof, and in and to said applications; and in and to any and all applications filed in any country based thereon, including the right to file applications in countries other than the country of priority filing under the provisions of any international convention; also in and to any and all improvements on said inventions now or hereafter made by employees, agents or contractors of Auspex; also the entire, exclusive, right, title and interest in and to any and all patents, including reissues and extensions thereof, to be obtained in any country upon said inventions or improvements; and any and all continuing applications, including divisional, continuation and continuation-in-part applications, substitute applications, and applications claiming benefit of an earlier filed provisional application, which may be filed upon said inventions or improvements in any country; together with the right to sue and recover for, and the right to profits or damages due or accrued arising out of or in connection with, any and all past, present or future infringements of said patent applications (and any patent(s) issuing thereon); and

Concert hereby authorizes and requests each issuing authority to issue any and all patents on said applications to Auspex, as assignee of the entire interest.

IN WITNESS WHEREOF, Concert by its duly authorized officer has executed this assignment as an instrument under seal this \_\_\_\_ day of September 2011.

**CONCERT PHARMACEUTICALS, INC.**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

State of \_\_\_\_\_ )

)

ss.

County of \_\_\_\_\_ )

On this \_\_\_\_ day of September 2011 before me personally appeared \_\_\_\_\_, known to me to be the person who executed the foregoing instrument and acknowledged that he/she executed the same as his/her free act and deed; in testimony whereof I have hereto set my hand and official seal on the day last above written.

(seal)

\_\_\_\_\_  
Notary Public or Consular Officer

My Commission expires \_\_\_\_\_

**Schedule 1**

1. U.S. Patent Application Serial Number 12/283,290  
Title: "Deuterated Pirfenidone"  
Filing Date: September 10, 2008  
Publication Number: US20090131485  
Publication Date: May 21, 2009

**CERTIFICATION PURSUANT TO RULE 13a-14(a)  
OF THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO  
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Roger D. Tung, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Concert 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(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 11, 2015

/s/ Roger D. Tung

Roger D. Tung  
President and Chief Executive Officer

**CERTIFICATION PURSUANT TO RULE 13a-14(a)  
OF THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO  
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Ryan Daws, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Concert 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(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 11, 2015

/s/ Ryan Daws

Ryan Daws

Chief Financial Officer

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

In connection with the Quarterly Report on Form 10-Q of Concert Pharmaceuticals, Inc. (the "Company") for the period ended March 31, 2015, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Roger D. Tung, President and Chief Executive Officer of the Company, hereby 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) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: May 11, 2015

/s/ Roger D. Tung  
\_\_\_\_\_  
Roger D. Tung  
President and Chief Executive Officer

*A signed original of this written statement required by Section 906 has been provided to Concert Pharmaceuticals, Inc. and will be retained by Concert Pharmaceuticals, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.*

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

In connection with the Quarterly Report on Form 10-Q of Concert Pharmaceuticals, Inc. (the "Company") for the period ended March 31, 2015, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Ryan Daws, Chief Financial Officer of the Company, hereby 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) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: May 11, 2015

/s/ Ryan Daws  
Ryan Daws  
Chief Financial Officer

*A signed original of this written statement required by Section 906 has been provided to Concert Pharmaceuticals, Inc. and will be retained by Concert Pharmaceuticals, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.*

