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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2015

OR

☐ **TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE EXCHANGE ACT OF 1934**

From the transition period from to .

Commission File Number 001-36076

FATE THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**65-1311552**
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)
3535 General Atomics Court, Suite 200, San Diego, CA	**92121**
(Address of principal executive offices)	(Zip Code)

(858) 875-1800

(Registrant's telephone number, including area code)

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate 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 ☒

As of August 3, 2015, 28,694,577 shares of the registrant's common stock, par value $0.001 per share, were issued and outstanding.

FATE THERAPEUTICS, INC.

FORM 10-Q

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

Fate Therapeutics, Inc.

Condensed Consolidated Balance Sheets
(in thousands, except share and per share data)

	June 30, 2015 (unaudited)	December 31, 2014
Assets		
Current assets:		
Cash and cash equivalents	$ 81,176	$ 49,101
Prepaid expenses and other current assets	395	760
Total current assets	81,571	49,861
Property and equipment, net	1,766	1,200
Restricted cash	122	122
Other assets	24	—
Total assets	$ 83,483	$ 51,183
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 1,507	$ 645
Accrued expenses	2,491	2,260
Current portion of deferred rent	35	85
Current portion of deferred revenue	2,105	—
Repurchase liability for unvested equity awards	21	45
Long-term debt, current portion	5,156	1,535
Total current liabilities	11,315	4,570
Deferred rent	91	51
Deferred revenue	5,986	—
Accrued expenses	478	149
Long-term debt, net of current portion	14,539	18,073
Commitments and contingencies (Note 5)		
Stockholders' equity:		
Preferred stock, $0.001 par value; authorized shares—5,000,000 at June 30, 2015 and December 31, 2014; no shares issued or outstanding	—	—
Common stock, $0.001 par value; authorized shares — 150,000,000 at June 30, 2015 and December 31, 2014; issued and outstanding shares — 28,618,567 at June 30, 2015 and 20,569,399 at December 31, 2014	29	21
Additional paid-in capital	179,097	140,711
Accumulated deficit	(128,052)	(112,392)
Total stockholders' equity	51,074	28,340
Total liabilities and stockholders' equity	$ 83,483	$ 51,183

See accompanying notes.

Fate Therapeutics, Inc.

Condensed Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except share and per share data)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2015	2014	2015	2014
	(unaudited)			
Collaboration revenue	$ 329	$ —	$ 329	$ —
Operating expenses:				
Research and development	4,857	3,968	9,425	8,490
General and administrative	2,690	2,072	5,446	4,487
Total operating expenses	7,547	6,040	14,871	12,977
Loss from operations	(7,218)	(6,040)	(14,542)	(12,977)
Other income (expense):				
Interest income	2	1	3	1
Interest expense	(563)	(28)	(1,121)	(71)
Total other expense, net	(561)	(27)	(1,118)	(70)
Net loss and comprehensive loss	$ (7,779)	$ (6,067)	$ (15,660)	$ (13,047)
Net loss per common share, basic and diluted	$ (0.33)	$ (0.30)	$ (0.70)	$ (0.64)
Weighted-average common shares used to compute basic and diluted net loss per share	23,920,630	20,467,782	22,246,832	20,407,632

See accompanying notes.

Fate Therapeutics, Inc.

Condensed Consolidated Statements of Cash Flows
(in thousands)

	Six Months Ended June 30,	
	2015	2014
	(unaudited)	
Operating activities		
Net loss	$ (15,660)	$ (13,047)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	290	256
Stock-based compensation	1,346	1,295
Amortization of discounts and debt issuance costs	87	14
Noncash interest expense	329	17
Deferred rent	(10)	(18)
Deferred revenue	8,091	—
Stock-based milestone charges	—	375
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	375	356
Accounts payable and accrued expenses	856	8
Net cash used in operating activities	(4,296)	(10,744)
Investing activities		
Purchase of property and equipment	(665)	(424)
Net cash used in investing activities	(665)	(424)
Financing activities		
Issuance of common stock from equity incentive plans, net of repurchases and issuance costs	164	144
Proceeds from public offering of common stock, net of issuance costs	32,292	—
Proceeds from sale of common stock to collaboration partner	4,580	—
Payments on long-term debt	—	(1,000)
Net cash provided by (used in) financing activities	37,036	(856)
Net change in cash and cash equivalents	32,075	(12,024)
Cash and cash equivalents at beginning of the period	49,101	54,036
Cash and cash equivalents at end of the period	$ 81,176	$ 42,012

See accompanying notes.

Fate Therapeutics, Inc.

Notes to Condensed Consolidated Financial Statements
(Unaudited)

1. Organization and Summary of Significant Accounting Policies

Organization

Fate Therapeutics, Inc. (the "Company") was incorporated in the state of Delaware on April 27, 2007 and has its principal operations in San Diego, California. The Company is a clinical-stage biopharmaceutical company engaged in the development of programmed cellular therapeutics for the treatment of severe, life-threatening diseases. The Company has built a novel platform to program the function and fate of cells *ex vivo* using pharmacologic modulators, such as small molecules. The Company's lead product candidate, ProHema®, is an *ex vivo* programmed hematopoietic cellular therapeutic, which is currently in clinical development for the treatment of hematologic malignancies and rare genetic disorders in patients undergoing hematopoietic stem cell transplantation. The Company is also developing *ex vivo* programmed hematopoietic and myogenic cellular product candidates using its patent-protected induced pluripotent stem cell technology.

As of June 30, 2015, the Company has devoted substantially all of its efforts to product development, raising capital and building infrastructure and has not generated any revenues from any sales of its therapeutic products. To date, the Company's revenues have been derived from collaboration agreements and government grants.

Initial Public Offering

On October 4, 2013, the Company completed its initial public offering (the "IPO") whereby it sold 7,666,667 shares of common stock at a public offering price of $6.00 per share. Gross proceeds from the offering were $46.0 million. After giving effect to underwriting discounts, commissions and other cash costs related to the offering, net proceeds were $40.5 million.

Follow-on Public Equity Offering

In May 2015, the Company completed a public offering of common stock in which the Company sold 6,900,000 shares of its common stock at an offering price of $5.00 per share. Gross proceeds from the offering were $34.5 million. Total underwriting discounts, commissions, and other cash costs related to the offering were $2.4 million, of which $2.2 million had been paid as of June 30, 2015. After giving effect to all such costs, including those unpaid as of June 30, 2015, total net proceeds from the offering were $32.1 million.

Use of Estimates

The Company's consolidated financial statements are prepared in accordance with United States generally accepted accounting principles ("GAAP"). The preparation of the Company's consolidated financial statements requires it to make estimates and assumptions that impact the reported amounts of assets, liabilities, revenues and expenses and the disclosure of contingent assets and liabilities in the Company's consolidated financial statements and accompanying notes. The most significant estimates in the Company's consolidated financial statements relate to accrued expenses. Although these estimates are based on the Company's knowledge of current events and actions it may undertake in the future, actual results may ultimately materially differ from these estimates and assumptions.

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its subsidiaries, Fate Therapeutics (Canada), Inc. or "Fate Canada", incorporated in Canada, Fate Therapeutics Ltd., incorporated in the United Kingdom, and Destin Therapeutics Inc., incorporated in Canada, which was dissolved in June 2014. To date, the aggregate operations of these subsidiaries have not been significant and all intercompany transactions and balances have been eliminated in consolidation.

Cash and Cash Equivalents

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

Unaudited Interim Financial Information

The accompanying interim condensed consolidated financial statements are unaudited. These unaudited interim condensed consolidated financial statements have been prepared in accordance with GAAP and following the requirements of the United States Securities and Exchange Commission ("SEC") for interim reporting. As permitted under those rules, certain footnotes or other financial information that are normally required by GAAP can be condensed or omitted. In management's opinion, the unaudited interim financial statements have been prepared on the same basis as the audited financial statements and include all adjustments, which include only normal recurring adjustments, necessary for the fair presentation of the Company's financial position and its results of operations and comprehensive loss and its cash flows for periods presented. These statements do not include all disclosures required by GAAP and should be read in conjunction with the Company's financial statements and accompanying notes for the fiscal year ended December 31, 2014, contained in the Company's Annual Report on Form 10-K for the year ended December 31, 2014 filed by the Company with the SEC on March 12, 2015. The results for the three and six months ended June 30, 2015 are not necessarily indicative of the results expected for the full fiscal year or any other interim period or any future year or period.

Revenue Recognition

The Company recognizes revenues when all four of the following criteria are met: (i) persuasive evidence that an agreement exists; (ii) delivery of the products and/or services has occurred; (iii) the selling price is fixed or determinable; and (iv) collectability is reasonably assured.

Revenue arrangements with multiple elements are analyzed to determine whether the elements can be divided into separate units of accounting or whether the elements must be accounted for as a single unit of accounting. The Company divides the elements into separate units of accounting and applies the applicable revenue recognition criteria to each of the elements, if the delivered elements have value to the customer on a stand-alone basis, if the arrangement includes a general right of return relative to the delivered elements, and if the delivery or performance of the undelivered elements is considered probable and substantially within the Company's control.

For transactions entered into prior to 2011, revenue was allocated to each element based on its relative fair value when objective and reliable evidence of fair value existed for all elements in an arrangement. If an element was sold on a stand-alone basis, the fair value of the element was the price charged for the element. When the Company was unable to establish fair value for delivered elements or when fair value of undelivered elements had not been established, revenue was deferred until all elements were delivered or until fair value could be objectively determined for any undelivered elements.

Beginning in 2011, revenue has been allocated to each element at the inception of the arrangement using the relative selling price method that is based on a three-tier hierarchy. The relative selling price method requires that the estimated selling price for each element be based on vendor-specific objective evidence ("VSOE") of fair value, which represents the price charged for each element when it is sold separately or, for an element not yet being sold separately, the price established by management. When VSOE of fair value is not available, third-party evidence ("TPE") of fair value is acceptable, or a best estimate of selling price is used if neither VSOE nor TPE is available. A best estimate of selling price should be consistent with the objective of determining the price at which the Company would transact if the element were sold regularly on a stand-alone basis and should also take into account market conditions and company-specific factors.

Revenue arrangements with multiple elements may include license fees, research and development payments, milestone payments, other contingent payments, and royalties on any product sales derived from collaborations. The Company recognizes nonrefundable license fees with stand-alone value as revenue at the time that the Company has satisfied all performance obligations, and recognizes license fees without stand-alone value as revenue in combination with any undelivered performance obligations. The Company recognizes a research and development payment as revenue over the term of the collaboration agreement as contracted amounts are earned, or reimbursable costs are incurred, under the agreement, where contracted amounts are considered to be earned in relative proportion to the performance required under the applicable agreement. The Company recognizes a milestone payment, which is contingent upon the achievement of a milestone in its entirety, as revenue in the period in which the milestone is achieved only if the milestone meets all criteria to be considered substantive. These criteria include the following: (i) the consideration being earned should be commensurate with either the Company's performance to achieve the milestone or the enhancement of the value of the item delivered as a result of a specific outcome resulting from the Company's performance to achieve the milestone; (ii) the consideration being earned should relate solely to past performance; (iii) the consideration being earned should be reasonable relative to all deliverables and payment terms in the arrangement; and (iv) the milestone should be considered in its entirety and cannot be bifurcated into substantive and nonsubstantive components. Any amounts received pursuant to revenue arrangements with multiple elements prior to satisfying the Company's revenue recognition criteria are recorded as deferred revenue on the Company's consolidated balance sheets.

Revenue from government grants is recorded when reimbursable expenses are incurred under the grant in accordance with the terms of the grant award.

Stock-Based Compensation

Stock-based compensation expense represents the cost of the grant date fair value of employee stock option grants recognized over the requisite service period of the awards (usually the vesting period) on a straight-line basis, net of estimated forfeitures. For stock option grants for which vesting is subject to performance-based milestones, the expense is recorded over the remaining service period after the point when the achievement of the milestone is probable or the performance condition has been achieved. For stock option grants for which vesting is subject to both performance-based milestones and market conditions, expense is recorded over the derived service period after the point when the achievement of the performance-based milestone is probable or the performance condition has been achieved. The Company estimates the fair value of stock option grants using the Black-Scholes option pricing model, with the exception of option grants for which vesting is subject to both performance-based milestones and market conditions, which are valued using a lattice-based model.

The Company accounts for stock options and restricted stock awards to non-employees using the fair value approach. Stock options and restricted stock awards to non-employees are subject to periodic revaluation over their vesting terms. For stock option grants for which vesting is subject to performance-based milestones, the expense is recorded over the remaining service period after the point when the performance condition is determined to be probable of achievement or when it has been achieved.

Net Loss per Common Share

Basic net loss per common share is calculated by dividing the net loss by the weighted-average number of shares of common stock outstanding for the period, without consideration for common stock equivalents. Excluded from the weighted-average number of shares outstanding are shares which have been issued upon the early exercise of stock options and are subject to future vesting and unvested restricted stock totaling 51,055 shares and 80,645 shares for the three months ended June 30, 2015 and 2014, respectively and 54,754 shares and 84,344 shares for the six months ended June 30, 2015 and 2014, respectively. Diluted net loss per share is calculated by dividing the net loss by the weighted-average number of common stock equivalents outstanding for the period determined using the treasury-stock method. Dilutive common stock equivalents for the periods presented include warrants for the purchase of common stock, and common stock options outstanding under the Company's stock option and incentive plan. For all periods presented, there is no difference in the number of shares used to calculate basic and diluted shares outstanding due to the Company's net loss position.

For the three and six months ended June 30, 2015, the Company realized a net loss of $7.8 million and $15.7 million, respectively. Shares of potentially dilutive securities totaled 3.0 million for the three and six months ended June 30, 2015, including options to purchase 2.9 million shares of common stock.

For the three and six months ended June 30, 2014, the Company realized a net loss of $6.1 million and $13.0 million, respectively. Shares of potentially dilutive securities totaled 2.4 million for the three and six months ended June 30, 2014, including options to purchase 2.4 million shares of common stock.

Recent Accounting Pronouncements

In April 2015, the Financial Accounting Standards Board (the "FASB") issued ASU 2015-03, which requires that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the carrying amount of that debt liability, consistent with debt discounts. The update is effective for financial statements issued for fiscal years beginning after December 15, 2015. As early adoption of this amendment is permitted, the Company has implemented the update accordingly by reclassifying prior period and current period amounts from assets to liabilities. The adoption of this guidance did not have a material impact on the Company's Consolidated Financial Statements.

In August 2014, the FASB issued ASU 2014-15, which defined management's responsibility to evaluate whether there is substantial doubt about an entity's ability to continue as a going concern and to provide related disclosure. ASU 2014-15 defined the term substantial doubt and requires an assessment for a period of one year after the date of the issuance of the financial statements. It requires certain disclosures when substantial doubt is alleviated as a result of consideration of management's plans and requires an express statement and other disclosures when substantial doubt is not alleviated. The guidance becomes effective for reporting periods ending after December 15, 2016, with early adoption permitted. The Company does not believe that the adoption of this guidance will have a material impact on its Consolidated Financial Statements.

In May 2014, the FASB issued ASU 2014-09, which created a single, principle-based revenue recognition model that will supersede and replace nearly all existing U.S. GAAP revenue recognition guidance. Entities will recognize revenue in a manner that depicts the transfer of goods or services to customers at an amount that reflects the consideration to which the entity expects to be entitled to receive in exchange for those goods or services. The model provides that entities follow five steps: (i) identify the contract with a customer, (ii) identify the performance obligations in the contract, (iii) determine the transaction price, (iv) allocate the transaction price to the performance obligations, and (v) recognize revenue. For public business entities, the guidance becomes effective for annual reporting periods beginning after December 15, 2017, and interim periods therein. The Company is currently evaluating the impact the adoption of this guidance will have on its Consolidated Financial Statements.

2. Juno Collaboration and License Agreement

On May 4, 2015, the Company entered into a research collaboration and license agreement (the "Agreement") with Juno Therapeutics, Inc. ("Juno") to identify small molecules to program the therapeutic properties of Juno's genetically-engineered T cell product candidates. Pursuant to the terms of the Agreement, Juno paid the Company a non-refundable upfront payment of $5.0 million and purchased 1,000,000 shares of the Company's common stock at a price of $8.00 per share.

Additionally, Juno agreed to fund all of the Company's activities under the collaboration for an exclusive four-year research term beginning on the effective date of the Agreement, with minimum annual research payments of $2.0 million to the Company. Juno has the option to extend the exclusive research term for an additional two years beyond the initial four-year term, subject to the payment of an extension fee of $3.0 million and the continued funding of the Company's activities under the collaboration during the extended term, with minimum annual research payments of $4.0 million to the Company during the two-year extension period. Upon exercise of the research term extension, the Company has the option to require Juno to purchase up to $10.0 million of the Company's common stock at a premium equal to 120% of the then thirty-day trailing volume weighted average trading price of the Company's common stock.

The Company applied Accounting Standards Codification ("ASC") 605-25, *Revenue Recognition — Multiple Element Arrangements,* to evaluate the appropriate accounting for the Agreement. In accordance with this guidance, the Company assessed the potential deliverables, including an exclusive license granted by the Company to Juno for certain intellectual property and research services to be performed by the Company, and determined that the deliverables did not have stand-alone value. The Company determined that the license deliverable granted under the Agreement does not have standalone value given the highly specific nature of the small molecules to be identified for use with Juno's genetically-engineered T cell product candidates. The Company concluded that there is one single unit of accounting, and the arrangement consideration will be recognized in the same manner as the final deliverable, which is the research services. As such, the upfront payment of $5.0 million was recorded as deferred revenue and is being recognized over the initial four-year research term under the Agreement. With respect to the $8.0 million payment for the Company's common stock, the Company determined that the common stock purchase price of $8.00 per share represented a premium of $3.40 per share. This premium represents arrangement consideration and therefore the aggregate premium of $3.4 million was recorded as deferred revenue and is being recorded as revenue ratably over the initial four-year research term. The remaining $4.6 million consideration that represents the purchase of common stock was recorded as the issuance of common stock in shareholders' equity.

Pursuant to the collaboration's research plan under the Agreement, the Company will be responsible for screening and identifying small molecule modulators of immunological cells, while Juno will be responsible for the development and commercialization of engineered T cell immunotherapies incorporating the Company's modulators. As the Company is principally responsible for the performance of the research services under the Agreement, revenue is recognized on a gross basis for such services when earned. Payments for research services will be recognized as deferred revenue until earned. No such payments were received during the three months ended June 30, 2015.

Total revenue recognized under the Agreement for the three months ended June 30, 2015 was $0.3 million. As of June 30, 2015, aggregate deferred revenue related to the Agreement was $8.1 million.

Under the Agreement, the Company has granted Juno an exclusive worldwide license to certain of its intellectual property, including its intellectual property arising under the collaboration, to make, use, sell and otherwise exploit genetically-engineered T cell immunotherapies using or incorporating small molecule modulators directed against certain designated tumor-associated antigen targets, subject to the selection of a target by Juno. The Company has retained exclusive rights to such intellectual property, including its intellectual property arising under the collaboration, for all other purposes, including its use outside of those targets selected by Juno.

The Company is eligible under the Agreement to receive selection fees for each tumor-associated antigen target selected by Juno and bonus selection fees based on the aggregate number of tumor-associated antigen targets selected by Juno. In accordance with ASC 605-28, *Revenue Recognition — Milestone Method*, the Company determined that such contingent payments do not constitute milestone payments and will not be accounted for under the milestone method of revenue recognition. The events leading to these payments do not meet the definition of a milestone under ASU 2010-17 because the achievement of these events depends on Juno's performance and selections. Any revenue from these contingent selection payments would be subject to an allocation of arrangement consideration and would be recognized over any remaining period of performance obligation, if any, relating to the collaboration.

In connection with each Juno product that uses or incorporates the Company's small molecule modulators, Juno has agreed to pay the Company non-refundable, non-creditable milestone payments totaling up to approximately $51.0 million in the aggregate per product upon the achievement of various clinical, regulatory and commercial milestones. Additionally, in connection with the third Juno product and the fifth Juno product that uses or incorporates the Company's small molecule modulators, Juno has agreed to pay the Company additional non-refundable, non-creditable bonus milestone payments totaling up to approximately $116.0 million and $137.5 million, respectively, in the aggregate, per product upon the achievement of various clinical, regulatory, and commercial milestones. In accordance with ASU 2010-17, the Company determined that these contingent payments meet the definition of a milestone under ASU 2010-17, and that the milestones are substantive given that the milestones are commensurate with the Company's performance, relate solely to the Company's past performance, and are reasonable relative to other deliverables and payments under the Agreement. Accordingly, the milestones under the Agreement will be accounted for as revenue on the achievement date, if any.

Beginning on the date of the first commercial sale (in each country) for each Juno product that uses or incorporates the Company's small molecule modulators, and continuing until the later of: i) the expiration of last valid patent claim, ii) ten years after such first commercial sale, or iii) the expiration of all data and other regulatory exclusivity periods afforded each product, Juno has agreed to pay the Company royalties on net sales of each Juno product that uses or incorporates the Company's small molecule modulators in the low single-digits.

The Agreement will end on the date that no further payments are due under the Agreement.

3. Asset Acquisition of Verio Therapeutics Inc.

On April 7, 2010, the Company acquired Verio Therapeutics Inc. ("Verio"), a development stage company headquartered in Ottawa, Ontario to gain access to its exclusively licensed intellectual property. In connection with the asset acquisition of Verio, the stockholders of Verio received 900,000 non-voting shares of Fate Canada (the "Exchangeable Shares") that were initially exchangeable into 138,462 shares of the Company's common stock and, subject to the validation of certain scientific data and the achievement of certain preclinical, clinical, commercial and financial milestones, were exchangeable for up to 884,605 shares of the Company's common stock.

As a result of the Company's IPO on October 4, 2013, 480,763 shares of the Company's common stock were issued during the fourth quarter of 2013 pursuant to the redemption of the Exchangeable Shares. The total number of shares of the Company's common stock issued upon the exchange of the Exchangeable Shares as a result of the IPO had increased from 138,462 shares of the Company's common stock to a total of 480,763 shares of the Company's common stock based upon the achievement of certain contractual milestones. Additionally, during the six months ended June 30, 2014, based on the achievement of certain preclinical milestones, an additional 38,463 shares of the Company's common stock were earned and issued, resulting in a $0.4 million charge to research and development expense.

In April 2015, the contractual earn-out period during which milestones were eligible to be earned and achieved expired under the Verio agreement and, as such, there are no additional contractual milestones that remain eligible for achievement. Accordingly, no additional shares of the Company's common stock remain issuable under the Verio agreement.

4. Fair Value Measurements

The carrying amounts of accounts payable and accrued liabilities are considered to be representative of their respective fair values because of the short-term nature of those instruments. Based on the borrowing rates currently available to the Company for loans with similar terms, which is considered a Level 2 input as described below, the Company believes that the fair value of long-term debt approximates its carrying value.

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

market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the accounting guidance establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1: Observable inputs such as quoted prices in active markets;

Level 2: Inputs, other than the quoted prices in active markets, that are observable either directly or indirectly; and

Level 3: Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

Financial assets measured at fair value on a recurring basis consist of the Company's cash equivalents. As of each of June 30, 2015 and December 31, 2014, the carrying amount of cash equivalents was $35.3 million, which approximates fair value and was determined based upon Level 1 inputs. Cash equivalents primarily consisted of money market funds. As of June 30, 2015 and December 31, 2014, the Company did not hold any Level 2 or Level 3 financial assets that are recorded at fair value on a recurring basis.

None of the Company's non-financial assets or liabilities is recorded at fair value on a non-recurring basis. No transfers between levels have occurred during the periods presented.

As of June 30, 2015 and December 31, 2014, the Company had no material liabilities measured at fair value on a recurring basis.

5. Accrued Expenses, Long-Term Debt, Commitments and Contingencies

Accrued Expenses

Current accrued expenses consist of the following (in thousands):

	June 30, 2015	December 31, 2014
Accrued payroll and other employee benefits	$ 879	$ 1,234
Accrued clinical trial costs	534	415
Accrued other	1,078	611
Accrued expenses	$ 2,491	$ 2,260

During the six months ended June 30, 2015, the Company issued 19,956 shares of its common stock to certain senior executives of the Company as consideration for a portion of their 2014 annual bonuses. All related amounts were accrued for as liabilities as of December 31, 2014. Future senior executive bonus amounts, timing, and method of payment are at the sole discretion of the Board of Directors of the Company. As such, all relevant bonus estimates are accrued for as liabilities as of June 30, 2015.

Long-term accrued expenses consist primarily of accruals for the final payment fees associated with our long-term debt.

Long-Term Debt

Long-term debt and unamortized discount balances are as follows (in thousands):

	June 30, 2015	December 31, 2014
Long-term debt	$ 20,000	$ 20,000
Less debt issuance costs and discount, net of current portion	(139)	(381)
Long-term debt, net of long-term portion of debt issuance costs and discount	19,861	19,619
Less current portion of long-term debt	(5,322)	(1,546)
Long-term debt, net	$ 14,539	$ 18,073
Current portion of long-term debt	$ 5,322	$ 1,546
Less current portion of debt issuance costs and discount	(166)	(11)
Current portion of long-term debt, net	$ 5,156	$ 1,535

On July 30, 2014, the Company entered into an Amended and Restated Loan and Security Agreement (the "Restated LSA") with Silicon Valley Bank (the "Bank"), collateralized by substantially all of the Company's assets, excluding certain intellectual property. The Restated LSA amends and restates the Loan and Security Agreement, dated as of January 5, 2009, as amended, by and between the Company and the Bank (the "Loan Agreement"). Pursuant to the Restated LSA, the Bank agreed to make loans to the Company in an aggregate principal amount of up to $20.0 million, comprised of (i) a $10.0 million term loan, funded at the closing date (the "Term A Loan") and (ii) subject to the achievement of a specified clinical milestone relating to the Company's Phase 2 clinical trial of ProHema, additional term loans totaling up to $10.0 million in the aggregate, which were available until December 31, 2014 (each, a "Term B Loan"). On December 24, 2014, the Company elected to draw on the full $10.0 million under a Term B Loan.

The Term A Loan and the Term B Loan mature on January 1, 2018 and June 1, 2018, respectively and bear interest at a fixed annual rate of 6.94% and 7.07%, respectively. Interest became payable in cash on a monthly basis beginning the first day of each month following the month in which the funding date of each loan occurred. The Company is required to make a monthly payment of interest only during the first twelve months following the funding date of each loan, and thereafter is required to repay the principal and interest under each loan in thirty equal monthly installments based on a thirty-month amortization schedule. The Company is required to make a final payment fee of 7.5%, equaling $0.8 million, of the funded amount for each of the Term A Loan and Term B Loan on the respective maturity dates. The final payment fees are accrued as interest expense over the terms of the loans and recorded in long-term accrued expenses.

A portion of the proceeds from the Term A Loan were used to repay loans outstanding under the Loan Agreement and to pay for transaction fees related to the Restated LSA, including a commitment fee of $0.4 million paid by the Company to the Bank. Net proceeds from the Term A Loan, after repayment of loans outstanding under the Loan Agreement and transaction fees, were $8.8 million. The Company determined that the repayment of the Loan Agreement was a debt extinguishment, and accounted for the Term A Loan at fair value as of the issuance date accordingly.

Proceeds from the Term B Loan were $10.0 million. In connection with the funding of the Term B Loan, the Company issued the Bank and one of its affiliates fully-exercisable warrants to purchase an aggregate of 98,039 shares of the Company's common stock (the "Warrants") at an exercise price of $4.08 per share. The Warrants expire in December 2021. The aggregate fair value of the Warrants was determined to be $0.4 million using the Black-Scholes option pricing model and was recorded as a debt discount on the Term B Loan and is amortized to interest expense over the term of the Term B Loan using the effective interest method.

The Company determined the effective interest rates of the Term A Loan and Term B Loan to be 10.3% and 12.0%, respectively. For the three and six months ended June 30, 2015, the Company recorded $0.6 million and $1.1 million, respectively, in aggregate interest expense related to the Term A and Term B Loans.

Warrants to purchase 36,074 shares of the Company's common stock at a weighted average exercise price of $7.21 per share issued in connection with the Loan Agreement remain outstanding as of June 30, 2015, with 5,305 and 30,769 of such warrants having expiration dates in January 2019 and August 2021, respectively.

Facility Lease

The Company leases certain office and laboratory space from a stockholder of the Company under a non-cancelable operating lease. In March 2015, the Company extended the term of the lease on this facility an additional 15 months through September 2017. The lease is subject to additional charges for common area maintenance and other costs. In connection with the lease, the Company entered into a cash-collateralized irrevocable standby letter of credit in the amount of $0.1 million. As of June 30, 2015, future minimum payments under the operating lease are $2.3 million.

In January 2015, the Company entered into a sublease for additional laboratory space. The sublease is accounted for as an operating lease and expires in September 2017. Under the sublease, total future minimum payments as of June 30, 2015 are $0.7 million.

6. Stockholders' Equity

Stock option activity under all equity and stock option plans is summarized as follows:

	Number of Options	Weighted-Average Price
Balance at December 31, 2014	2,425,969	$ 3.83
Granted	942,768	5.01
Canceled	(327,700)	5.59
Exercised	(129,212)	1.53
Balance at June 30, 2015	2,911,825	$ 4.11

The allocation of stock-based compensation for all options and restricted stock awards is as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2015	2014	2015	2014
Research and development	$ 416	$ 229	$ 720	$ 794
General and administrative	322	195	626	501
	$ 738	$ 424	$ 1,346	$ 1,295

As of June 30, 2015, the outstanding options included 120,953 performance-based options for which the achievement of the performance-based vesting provisions was determined not to be probable. The aggregate grant date fair value of these unvested options at June 30, 2015 was $0.4 million.

As of June 30, 2015, the unrecognized compensation cost related to outstanding options (excluding those with performance-based conditions) was $4.4 million and is expected to be recognized as expense over approximately 2.9 years.

The weighted-average assumptions used in the Black-Scholes option pricing model to determine the fair value of the employee stock option grants were as follows:

	Six Months Ended June 30,	
	2015	2014
Risk-free interest rate	1.6%	1.9%
Expected volatility	82.2%	94.5%
Expected term (in years)	6.0	6.0
Expected dividend yield	0.0%	0.0%

The weighted-average assumptions used in the Black-Scholes option pricing model to determine the fair value of the non-employee stock option grants were as follows:

	Six Months Ended June 30,	
	2015	2014
Risk-free interest rate	0.5%	2.2%
Expected volatility	61.9%	94.3%
Remaining contractual term (in years)	1.6	6.6
Expected dividend yield	0.0%	0.0%

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

The following discussion and analysis should be read in conjunction with our financial statements and accompanying notes included in this Quarterly Report on Form 10-Q and the financial statements and accompanying notes thereto for the fiscal year ended December 31, 2014 and the related Management's Discussion and Analysis of Financial Condition and Results of Operations, which are contained in our Annual Report on Form 10-K filed with the Securities and Exchange Commission on March 12, 2015.

This Quarterly Report on Form 10-Q contains "forward-looking statements" within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Such forward-looking statements, which represent our intent, belief, or current expectations, involve risks and uncertainties and other factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. In some cases you can identify forward-looking statements by terms such as "may," "will," "expect," "anticipate," "estimate," "intend," "plan," "predict," "potential," "believe," "should" and similar expressions. Factors that could cause or contribute to differences in results include, but are not limited to, those set forth under "Risk Factors" under Item 1A of Part II below. Except as required by law, we undertake no obligation to update these forward-looking statements to reflect events or circumstances after the date of this report or to reflect actual outcomes.

Overview

We are a clinical-stage biopharmaceutical company engaged in the development of programmed cellular therapeutics for the treatment of severe, life-threatening diseases. We have built a novel platform to program the function and fate of cells *ex vivo* using pharmacologic modulators, such as small molecules. Our lead product candidate, ProHema®, is an *ex vivo* programmed hematopoietic cellular therapeutic, which is currently in clinical development for the treatment of hematologic malignancies and rare genetic disorders in patients undergoing hematopoietic stem cell transplantation. We are also developing *ex vivo* programmed hematopoietic and myogenic cellular product candidates using our patent-protected induced pluripotent stem cell technology. We believe that our programmed cellular product candidates have disease-transformative or curative potential across a broad range of orphan indications.

Since our inception in 2007, we have devoted substantially all of our resources to the research and development of our product candidates and cellular programming technology, the creation, licensing and protection of related intellectual property and the provision of general and administrative support for these activities. To date, we have funded our operations primarily through the public sale of common stock, the private placement of preferred stock and convertible notes, collaboration agreements, and through commercial bank debt that included the issuance of warrants.

We have never been profitable and have incurred net losses in each year since inception. Substantially all of our net losses 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 operating losses for at least the next several years. Our net losses may fluctuate significantly from quarter to quarter and year to year. We expect our expenses will increase substantially in connection with our ongoing activities as we:

- conduct clinical trials of our product candidates;
- continue our research and development efforts, including under our collaboration agreement;
- manufacture preclinical study and clinical trial materials;
- maintain, expand and protect our intellectual property portfolio;
- engage with regulatory authorities for the development of, and seek regulatory approvals for, our product candidates;
- hire additional clinical, regulatory, quality control and technical personnel to advance our product candidates;
- hire additional scientific personnel to advance our research and development efforts; and
- hire general and administrative personnel to operate as a public company and support our operations.

We do not expect to generate any revenues from sales of any therapeutic products unless and until we successfully complete development and obtain regulatory approval for one or more of our product candidates, which we expect will take a number of years. If we obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. Accordingly, we will seek to fund our operations through public or private equity or debt financings or other sources. 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 when needed would have a negative effect on our financial condition and ability to develop our product candidates.

Financial Operations Overview

We conduct substantially all of our activities through Fate Therapeutics, Inc., a Delaware corporation, at our facilities in San Diego, California. Fate Therapeutics, Inc. owns 100% of the voting shares of Fate Therapeutics (Canada) Inc., or Fate Canada, that were outstanding at June 30, 2015 and directs all of its operational activities, which are insignificant. The following information is presented on a consolidated basis to include the accounts of Fate Therapeutics, Inc. and Fate Canada. All intercompany transactions and balances are eliminated in consolidation.

Revenue

To date, we have not generated any revenues from therapeutic product sales. Our revenues have been derived from collaboration agreements and government grants.

On May 4, 2015, we entered into a research collaboration and license agreement (the "Agreement") with Juno Therapeutics, Inc. ("Juno") to identify small molecules to program the therapeutic properties of Juno's genetically-engineered T cell product candidates. In connection with the Agreement, we received an upfront, non-refundable payment of $5.0 million and $8.0 million for the purchase of 1,000,000 shares of our common stock at $8.00 per share. Based on the upfront payment and the premium paid on the share purchase, we recorded $8.4 million of deferred revenue to be recognized ratably as revenue over the initial four-year research term. Additionally, we will receive a minimum of $2.0 million in research funding annually during the initial four-year term. We account for the research funding as revenue using the gross method and records such amounts received from Juno as revenue when earned.

Per the Agreement, Juno has the option to extend the research term an additional two-years subject to payment of a one-time, non-refundable extension fee of $3.0 million and minimum research funding of $4.0 million per year during the extended two-year research term. Additionally, if Juno elects to exercise its extension option, Fate then has the option to require Juno to purchase up to $10.0 million of our common stock at a premium equal to 120% of the then thirty-day trailing volume weighted average trading price.

Additionally, we are eligible to receive certain contingent payments related to the selection of certain modulated targets by Juno, and to the achievement of certain preclinical, regulatory, and commercial milestones and royalties on commercial sales of each Juno product that uses or incorporates our small molecule modulators, under the Agreement. To date, no such payments have been received by us.

In connection with the Agreement, we have recognized $0.3 million during the three months ended June 30, 2015 as collaboration revenue in the consolidated statements of operations. As of June 30, 2015, aggregate deferred revenue related to the Agreement was $8.1 million.

Collaboration revenues were also generated from our collaboration agreement with Becton, Dickinson and Company, or BD. In September 2010, we entered into a worldwide exclusive license and collaboration agreement with BD for the joint development and worldwide commercialization of certain induced pluripotent stem cell, or iPSC, tools and technologies for use in drug discovery and development. The license and collaboration agreement was assigned by BD to Corning Incorporated in October 2012. In connection with the agreement, we received an upfront, non-refundable license payment, and received research funding for the conduct of joint development activities during the three-year period ended September 30, 2013. We are eligible to receive certain commercialization milestones and royalties on the sale of iPSC reagent products. We do not anticipate generating any significant revenues under the agreement with BD in the future.

Grant revenue has been generated primarily through research and development grant programs offered by the U.S. government and its agencies. In April 2011, we were awarded a $2.1 million grant from the U.S. Army Telemedicine & Advanced Technology Research Center, or TATRC, to identify and develop regenerative medicines for acute sound-induced hearing loss. All funding under the TATRC grant was expended in full as of May 2013.

Research and Development Expenses

Research and development expenses consist of costs associated with the research and development of our product candidates and cellular programming technology, and the performance of research activities under our collaboration agreements. These costs are expensed as incurred and include:

- salaries and employee-related costs, including stock-based compensation;

- costs associated with conducting our preclinical, clinical and regulatory activities, including fees paid to third-party professional consultants and service providers;
- costs incurred under clinical trial agreements with investigative sites;
- costs incurred under our collaboration agreements;
- costs for laboratory supplies;
- costs to acquire, develop and manufacture preclinical study and clinical trial materials;
- charges associated with the achievement of milestones pursuant to our asset acquisition of Verio Therapeutics Inc., or Verio, that was completed in April 2010; and
- facilities, depreciation and other expenses including allocated expenses for rent and maintenance of facilities.

We plan to increase our current level of research and development expenses for the foreseeable future as we continue the development of our product candidates and cellular programming technology, and as we perform research activities under our collaboration agreement with Juno. Our current planned research and development activities over the next twelve months consist primarily of the following:

- conducting our Phase 2 clinical trial of ProHema to examine its safety and its curative potential in adult patients with orphan hematologic malignancies undergoing allogeneic hematopoietic stem cell transplants, or HSCT (the PUMA study);
- initiating and conducting our Phase 1b clinical trial of ProHema to examine its safety and curative potential in pediatric patients with inherited metabolic disorders, or IMDs, including lysosomal storage disorders, or LSDs, undergoing allogeneic HSCT (the PROVIDE study);
- conducting our Phase 1b clinical trial of ProHema to examine its safety and curative potential in pediatric patients with orphan hematologic malignancies undergoing allogeneic HSCT (the PROMPT study);
- researching the therapeutic potential of our programmed cellular product candidates, including those derived from human induced pluripotent stem cells; and
- performing research activities under the Agreement with Juno.

Due to the inherently unpredictable nature of preclinical and clinical development, and given our novel therapeutic approach and the current stage of development of our product candidates, we cannot determine and are unable to estimate with certainty the timelines we will require and the costs we will incur for the development of our product candidates, including ProHema. Clinical and preclinical development timelines and costs, and the potential of development success, can differ materially from expectations. In addition, we cannot forecast which product candidates may be subject to future collaborations, when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development plans and capital requirements.

The following table summarizes our research and development expenses by major programs for the periods indicated (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2015	2014	2015	2014
HSC modulation platform	$ 3,110	$ 2,151	$ 6,256	$ 4,301
Other preclinical programs and technologies	659	1,103	1,331	2,689
Total direct research and development expenses	3,769	3,254	7,587	6,990
Unallocated expenses	1,088	714	1,838	1,500
Total research and development expenses	$ 4,857	$ 3,968	$ 9,425	$ 8,490

Unallocated expenses consist primarily of facility costs, general equipment and supply costs, depreciation, and other miscellaneous costs, all of which we do not allocate to specific programs as these expenses are deployed across all of our research and development operations.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and employee-related costs, including stock-based compensation, for our employees in executive, operational, finance and human resource functions; professional fees for accounting, legal and tax services; costs for obtaining, prosecuting and maintaining our intellectual property; and other costs and fees, including director and officer insurance premiums, to support our operations as a public company. We anticipate that our general and administrative expenses will increase in the future as we increase our research and development activities, maintain compliance with exchange listing and SEC requirements and continue to operate as a public company.

Other Income (Expense), Net

Other income (expense) consists primarily of interest income earned on cash and cash equivalents, interest expense on convertible notes and on amounts outstanding under our credit facilities, and debt extinguishments.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations are based on our financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in our financial statements. On an ongoing basis, we evaluate our estimates and judgments, including those related to accrued expenses and stock-based compensation. We base our estimates on historical experience, known trends and events, and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

The estimates and judgments involved in the accounting policies as described in Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2014 continue to be our critical accounting policies. There were no material changes to our critical accounting policies and estimates during the six months ended June 30, 2015.

See Note 1 to the Condensed Consolidated Financial Statements for information related to recent accounting pronouncements.

Results of Operations

Comparison of the Three Months Ended June 30, 2015 and 2014

The following table summarizes the results of our operations for the three months ended June 30, 2015 and 2014 (in thousands):

	Three Months Ended June 30,		
	2015	2014	Increase
Collaboration revenue	$ 329	$ —	$ 329
Research and development expense	4,857	3,968	889
General and administrative expense	2,690	2,072	618
Total other expense, net	561	27	534

Revenue. During the three months ended June 30, 2015, we recognized revenue of $0.3 million under the Agreement with Juno, which we entered into in May 2015.

Research and development expenses. Research and development expenses were $4.9 million for the three months ended June 30, 2015, compared to $4.0 million for the three months ended June 30, 2014. The increase in research and development expenses primarily includes the following changes:

- $0.5 million increase in compensation and benefits expense, including employee stock-based compensation expense, relating to an increase in employee headcount to support the clinical development of ProHema and the evaluation of our other product candidates; and
- $0.2 million increase in expenditures for laboratory equipment and supplies relating to the conduct of our clinical trials, and to the conduct of our preclinical research activities.

General and administrative expenses. General and administrative expenses were $2.7 million for the three months ended June 30, 2015, compared to $2.1 million for the three months ended June 30, 2014. The increase in general and administrative expenses primarily reflects the following:

- $0.2 million increase in compensation and benefits expense, including employee stock-based compensation expense; and
- $0.2 million increase in intellectual property-related expenses.

Other expense, net. Other expense, net was $0.6 million for the three months ended June 30, 2015, compared to $27,000 for the three months ended June 30, 2014. The change in other expense was primarily due to interest expense related to our term loans with Silicon Valley Bank.

Comparison of the Six Months Ended June 30, 2015 and 2014

The following table summarizes the results of our operations for the six months ended June 30, 2015 and 2014 (in thousands):

	Six Months Ended June 30,		
	2015	2014	Increase
Collaboration revenue	$ 329	$ —	$ 329
Research and development expense	9,425	8,490	935
General and administrative expense	5,446	4,487	959
Total other expense, net	1,118	70	1,048

Revenue. During the six months ended June 30, 2015, we recognized revenue of $0.3 million under the Agreement with Juno, which we entered into in May 2015.

Research and development expenses. Research and development expenses were $9.4 million for the six months ended June 30, 2015, compared to $8.5 million for the six months ended June 30, 2014. The increase in research and development expenses primarily reflects the following:

- $0.5 million increase in compensation and benefits expense, including stock-based compensation expense, relating to an increase in employee headcount to support the clinical development of ProHema and the evaluation of our other product candidates;
- $0.3 million increase in third-party professional consultant and service provider expenses relating to the clinical development of ProHema and the conduct of preclinical research activities; and
- $0.3 million increase in expenditures for laboratory equipment and supplies relating to the conduct of our clinical trials; which were partially offset by
- $0.4 million non-cash charge during the six months ended June 30, 2014 related to the achievement of a pre-clinical milestone under our agreement with the former Verio stockholders.

General and administrative expenses. General and administrative expenses were $5.4 million for the six months ended June 30, 2015, compared to $4.5 million for the six months ended June 30, 2014. The increase in general and administrative expenses primarily reflects the following:

- $0.3 million increase in compensation and benefits expense, including stock-based compensation expense;
- $0.2 million increase in intellectual property-related expenses; and

- $0.2 million increase in third-party financial and legal professional service provider and insurance expenses to support our operations as a public company.

Other expense, net. Other expense, net was $1.1 million for the six months ended June 30, 2015, compared to $0.1 million for the six months ended June 30, 2014. The change in other expense was primarily due to interest expense related to our term loans with Silicon Valley Bank.

Liquidity and Capital Resources

We have incurred losses and negative cash flows from operations since inception. As of June 30, 2015, we had an accumulated deficit of $128.1 million and anticipate that we will continue to incur net losses for the foreseeable future.

Operating Activities

Cash used in operating activities decreased from $10.7 million for the six months ended June 30, 2014 to $4.3 million for the six months ended June 30, 2015. The primary driver of this change in cash used in operating activities was $8.1 million in deferred revenue that resulted from the Agreement with Juno in May 2015, offset by our increase in net loss from 2014 to 2015.

Agreement with Juno Therapeutics, Inc.

On May 4, 2015, we entered into a research collaboration and license agreement with Juno to identify small molecules to program the therapeutic properties of Juno's genetically-engineered T cell product candidates. Pursuant to the terms of the Agreement, Juno paid us an upfront payment of $5.0 million, and purchased one million shares of our common stock, at $8.00 per share, for an aggregate purchase price of $8.0 million. Additionally, Juno agreed to fund all of our activities under the collaboration for an exclusive four-year research term beginning on the effective date of the Agreement, with minimum annual research payments of $2.0 million to us. Juno has the option to extend the exclusive research term for an additional two years beyond the initial four-year term, subject to the payment of an extension fee of $3.0 million and the continued funding of our activities under the collaboration during the extended term, with minimum annual research payments of $4.0 million to us during the two-year extension period. As of June 30, 2015, no research payments have been received by us.

We are eligible under the Agreement to receive selection fees for each tumor-associated antigen target selected by Juno and bonus selection fees based on the aggregate number of tumor-associated antigen targets selected by Juno. Additionally, in connection with each Juno product that uses or incorporates our small molecule modulators, Juno has agreed to pay us non-refundable, non-creditable milestone payments totaling up to approximately $51.0 million, in the aggregate, per product upon the achievement of various clinical, regulatory and commercial milestones. Additionally, in connection with the third Juno product and the fifth Juno product that uses or incorporates our small molecule modulators, Juno has agreed to pay us additional non-refundable, non-creditable bonus milestone payments totaling up to approximately $116.0 million and $137.5 million, respectively, in the aggregate, per product upon the achievement of various clinical, regulatory, and commercial milestones. As of June 30, 2015, no selection fees or milestone payments have been received by us.

Beginning on the date of the first commercial sale (in each country) for each Juno product that uses or incorporates our small molecule modulators, and continuing until the later of i) the expiration of last valid patent claim, ii) ten years after such first commercial sale, or iii) the expiration of all data and other regulatory exclusivity periods afforded each product, Juno has agreed to pay us royalties on net sales of each Juno product that uses or incorporates our small molecule modulators in the low single-digits. As of June 30, 2015, no royalties have been received us.

Investing Activities

During the six months ended June 30, 2015 and 2014, investing activities used cash of $0.7 million and $0.4 million, respectively, for the purchase of property and equipment.

Financing Activities

For the six months ended June 30, 2015, financing activities provided cash of $37.0 million. Financing activities primarily consisted of $32.3 million of net proceeds from our May 2015 follow-on public offering of our common stock and $4.6 million from our May 2015 collaboration agreement with Juno, which amount represents the fair value of the equity component from Juno's common stock purchase under the agreement. For the six months ended June 30, 2014, financing activities used cash of $0.9 million, which primarily related to payments on long-term debt.

From our inception through June 30, 2015, we have funded our consolidated operations primarily through the public sale of common stock, the private placement of preferred stock and convertible notes, collaboration agreements, and through commercial bank debt that included the issuance of warrants. As of June 30, 2015, we had cash and cash equivalents of $81.2 million.

In May 2015, we completed a public offering of common stock in which we sold 6,900,000 shares of our common stock at an offering price of $5.00 per share. Gross proceeds from the offering were $34.5 million. Total underwriting discounts, commissions, and other cash costs related to the offering were $2.4 million, of which $2.2 million has been paid as of June 30, 2015. After giving effect to all such costs, including those unpaid as of June 30, 2015, total net proceeds from the offering were $32.1 million.

Our IPO on October 4, 2013 resulted in net proceeds of $40.5 million.

Silicon Valley Bank Debt Facility

On July 30, 2014, we entered into an Amended and Restated Loan and Security Agreement (the "Restated LSA") with Silicon Valley Bank (the "Bank"), collateralized by substantially all of our assets, excluding certain intellectual property. The Restated LSA amends and restates the Loan and Security Agreement, dated as of January 5, 2009, as amended, by and between us and the Bank (the "Loan Agreement"). Pursuant to the Restated LSA, the Bank agreed to make loans to us in an aggregate principal amount of up to $20.0 million, comprised of (i) a $10.0 million term loan, funded at the closing date (the "Term A Loan") and (ii) subject to the achievement of a specified clinical milestone relating to our Phase 2 clinical trial of ProHema, additional term loans totaling up to $10.0 million in the aggregate, which were available until December 31, 2014 (each, a "Term B Loan"). On December 24, 2014, we elected to draw $10.0 million under the Term B Loan.

The Term A Loan and the Term B Loan mature on January 1, 2018 and June 1, 2018, respectively and bear interest at a fixed annual rate of 6.94% and 7.07%, respectively. Interest became payable in cash on a monthly basis beginning the first day of each month following the month in which the funding date of each loan occurred. We are required to make a monthly payment of interest only during the first twelve months following the funding date of each loan, and thereafter is required to repay the principal and interest under each loan in thirty equal monthly installments based on a thirty-month amortization schedule. The Company is required to make a final payment fee of 7.5%, equaling $0.8 million, of the funded amount for each of the Term A Loan and Term B Loan on their respective maturity dates.

A portion of the proceeds from the Term A Loan were used to repay loans outstanding under the Loan Agreement and to pay for transaction fees related to the Restated LSA, including a commitment fee of $0.4 million paid by us to the Bank. Net proceeds from the Term A Loan, after repayment of loans outstanding under the Loan Agreement and transaction fees, were $8.8 million.

Proceeds from the Term B Loan were $10.0 million. In connection with the funding of the Term B Loan, we issued the Bank and one of its affiliates fully-exercisable warrants to purchase an aggregate of 98,039 shares of our common stock (the "Warrants") at an exercise price of $4.08 per share. The Warrants expire in December 2021. The aggregate fair value of the Warrants was determined to be $0.4 million using the Black-Scholes option pricing model. The net proceeds from the Term A and Term B Loans have been used for, and we expect to continue to use net proceeds for, working capital purposes, including the research and development of our product candidates and cellular programming technology.

Shelf Registration Statement

In October 2014, the SEC declared effective a shelf registration filed by us in October 2014. The shelf registration statement allows us to issue certain securities, including shares of our common stock, from time to time for an aggregate offering price of up to $100 million. The specific terms of any offering, if any, under the shelf registration statement would be established at the time of such offering. As of July 29, 2015, after taking into account the our May 2015 public offering of common stock, there is $65.5 million remaining under the shelf registration statement.

Agreement with Juno Therapeutics, Inc.

Under the Agreement with Juno, Juno purchased one million shares of our common stock, at $8.00 per share, for an aggregate purchase price of $8.0 million in May 2015, $4.6 million of which was considered an equity component of the transaction. Juno has the option to extend the exclusive research term under the Agreement for an additional two years beyond the initial four-year term, subject to the payment of an extension fee of $3.0 million and the continued funding of our activities under the collaboration during the extended term, with minimum annual research payments of $4.0 million to us during the two-year extension period. Upon exercise of the research term extension, we have the option to require Juno to purchase up to $10.0 million of our common stock at a premium equal to 120% of the then thirty-day trailing volume weighted average trading price of our common stock.

See the *Operating Activities* in the "Liquidity and Capital Resources" section above for further discussion on the Agreement**.**

Operating Capital Requirements

We anticipate that we will continue to incur losses for the foreseeable future, and we expect the losses to increase as we continue the research and development of, and seek regulatory approvals for, our product candidates. Our product candidates have not yet achieved regulatory approval, and we may not be successful in achieving commercialization of our product candidates.

We believe our existing cash and cash equivalents as of June 30, 2015 will be sufficient to fund our projected operating requirements for at least the next twelve months. However, we are subject to all the risks and uncertainties incident in the research and development of therapeutic products. For example, the FDA or other regulatory authorities may require us to generate additional data or conduct additional preclinical studies or clinical trials, or may impose other requirements beyond those that we currently anticipate. Additionally, it is possible for a product candidate to show promising results in preclinical studies or in clinical trials, but fail to establish sufficient safety and efficacy data necessary to obtain regulatory approvals. As a result of these and other risks and uncertainties and the probability of success, the duration and the cost of our research and development activities required to advance a product candidate cannot be accurately estimated and are subject to considerable variation. We may encounter difficulties, complications, delays and other unknown factors and unforeseen expenses in the course of our research and development activities, any of which may significantly increase our capital requirements and could adversely affect our liquidity.

We will require additional capital for the research and development of our product candidates, and we may be forced to seek additional funds sooner than expected to pursue our research and development activities. We expect to finance our capital requirements in the foreseeable future through the sale of public or private equity or debt securities. However, additional capital may not be available to us on reasonable terms, if at all. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we may have to significantly delay, scale back or discontinue the research or development of one or more of our product candidates. If we do raise additional funds through the issuance of additional equity or debt securities, it could result in dilution to our existing stockholders, increased fixed payment obligations and the existence of securities with rights that may be senior to those of our common stock. Additionally, if we incur indebtedness, we may become subject to financial or other covenants that could adversely restrict, impair or affect our ability to conduct our business, such as requiring us to relinquish rights to certain of our product candidates or technologies or limiting our ability to acquire, sell or license intellectual property rights or incur additional debt. Any of these events could significantly harm our business, operations, financial condition and prospects.

Our forecast of the period of time through which our existing cash and cash equivalents will be adequate to support our operations is a forward-looking statement and involves significant risks and uncertainties. We have based this forecast on assumptions that may prove to be wrong, and actual results could vary materially from our expectations, which may adversely affect our capital resources and liquidity. We could utilize our available capital resources sooner than we currently expect. The amount and timing of future funding requirements, both near- and long-term, will depend on many factors, including, but not limited to:

- the initiation, progress, size, timing, duration, costs and results of preclinical studies and clinical trials for our product candidates;
- the time, cost and outcome of seeking and obtaining regulatory approvals by the FDA and comparable foreign regulatory authorities, including the potential for the FDA or comparable foreign regulatory authorities to require that we perform more studies than, or evaluate clinical endpoints other than those that we currently expect;
- the number and characteristics of product candidates that we pursue;
- the extent to which we are required to pay milestone or other payments under our in-license agreements and the timing of such payments;
- the extent to which milestones are achieved under our collaboration agreement with Juno, and the time to achievement of such milestones;
- the cost of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
- our need to expand our research and development activities, including our need and ability to hire additional employees;
- our need to implement additional infrastructure and internal systems and hire additional employees to operate as a public company;

- the establishment and continuation of collaborations and strategic alliances;
- the effect of competing technological and market developments; and
- the cost of establishing sales, distribution, marketing and manufacturing capabilities, and the pricing and reimbursement, for any products for which we may receive regulatory approval.

If we cannot continue or expand our research and development operations, or otherwise capitalize on our business opportunities, because we lack sufficient capital, our business, operations, financial condition and prospects could be materially adversely affected.

Contractual Obligations and Commitments

In July 2014, we entered into the Restated LSA with the Bank. Pursuant to the Restated LSA, the Bank agreed to make loans to us in an aggregate principal amount of up to $20.0 million, which we have fully drawn upon. See Note 5 of the Condensed Consolidated Financial Statements for further details.

We have no material contractual obligations not fully recorded on our Condensed Consolidated Balance Sheets or fully disclosed in the notes to the financial statements.

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

Interest Rate Risk

Our cash and cash equivalents as of June 30, 2015 consisted of cash and money market mutual funds. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of U.S. interest rates. However, because of the short-term nature of the instruments in our portfolio, a 10% change in market interest rates would not have a material impact on our financial condition and/or results of operations.

Our outstanding debt bears interest at a fixed rate and therefore has no exposure to changes in interest rates.

Item 4. Controls and Procedures

Disclosure Controls and Procedures

We carried out an evaluation, under the supervision and with the participation of our management, including our chief executive officer and chief financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act as of the end of the period covered by this Quarterly Report on Form 10-Q. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable and not absolute assurance of achieving the desired control objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on this evaluation, our chief executive officer and chief financial officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of June 30, 2015.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during our latest fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

We are not a party to any material legal proceedings at this time. From time to time, we may be subject to various legal proceedings and claims that arise in the ordinary course of our business activities. Although the results of litigation and claims cannot be predicted with certainty, we do not believe we are party to any claim or litigation the outcome of which, if determined adversely to us, would individually or in the aggregate be reasonably expected to have a material adverse effect on our business. Regardless of the outcome, litigation can have an adverse effect on us because of defense and settlement costs, diversion of management resources and other factors.

Item 1A. Risk Factors

You should carefully consider the following risk factors, as well as the other information in this Quarterly Report on Form 10-Q, and in our other public filings. The occurrence of any of these risks could harm our business, financial condition, results of operations and/or growth prospects or cause our actual results to differ materially from those contained in forward-looking statements we have made in this report and those we may make from time to time. You should consider all of the risk factors described in our public filings when evaluating our business.

Risks Related to the Discovery, Development and Regulation of Our Product Candidates

If we fail to complete the preclinical or clinical development of, or to obtain regulatory approval for, our product candidates, our business would be significantly harmed.

All of our product candidates are currently in research or clinical development, including our lead product candidate, ProHema, which is currently in Phase 2 clinical development. We have not completed clinical development of or obtained regulatory approval for any of our product candidates. Only a small percentage of research and development programs ultimately result in commercially successful products, and we cannot assure you that any of our product candidates will demonstrate the safety and efficacy profile necessary to support further preclinical study, clinical development or regulatory approval.

We may delay or cancel our ongoing research and development activities for any of our product candidates for a variety of reasons, including:

- determining that a product candidate is ineffective or causes harmful side effects during preclinical studies or clinical trials;
- difficulty establishing predictive preclinical models for demonstration of safety and efficacy of a product candidate in one or more potential therapeutic areas for clinical development;
- difficulties in manufacturing a product candidate, including the inability to manufacture a product candidate in a sufficient quantity, suitable form, or in a cost-effective manner, or under processes acceptable to the FDA for marketing approval;
- the proprietary rights of third parties, which may preclude us from developing or commercializing a product candidate;
- determining that a product candidate may be uneconomical to develop or commercialize, or may fail to achieve market acceptance or adequate reimbursement;
- our inability to secure strategic partners which may be necessary for advancement of a product candidate into clinical development or commercialization; or
- our prioritization of other product candidates for advancement.

Additionally, we will only obtain regulatory approval to market a product candidate if we can demonstrate, to the satisfaction of the FDA or comparable foreign regulatory authorities, in well-designed and conducted clinical trials that the product candidate is manufactured in accordance with applicable regulatory requirements, is safe and effective, and otherwise meets the appropriate standards required for approval for a particular indication. Our ability to obtain regulatory approval of our product candidates depends on, among other things, completion of additional preclinical studies and clinical trials, whether our clinical trials demonstrate statistically significant efficacy with safety profiles that do not potentially outweigh the therapeutic benefit, and whether regulatory agencies agree that the data from our clinical trials and our manufacturing processes are sufficient to support approval. The final results of our current and future clinical trials may not meet the FDA's or other regulatory agencies' requirements to approve a product candidate for marketing, and the regulatory agencies may otherwise determine that our manufacturing processes or facilities are insufficient to support approval. We may need to conduct preclinical studies and clinical trials that we currently do not anticipate. If we fail to complete preclinical or clinical development of, or obtain regulatory approval for, our product candidates, we will not be able to generate any revenues from product sales, which will harm our business, prospects, financial condition and results of operations.

Development of our product candidates will require substantial additional funding, without which we will be unable to complete clinical development of, or obtain regulatory approval for, our product candidates.

Developing therapeutic products, including conducting preclinical studies and clinical trials of cellular therapeutics, is expensive. Based upon our currently expected level of operating expenditures, we believe that we will be able to fund our operations for at least the next twelve months. However, our resources will likely be insufficient to conduct research and development programs to the full extent currently planned. We will require substantial additional capital to conduct the research and development and clinical and regulatory activities necessary to bring our product candidates to market. Our future capital requirements will depend on many factors, including, but not limited to:

- the progress, results, timing and costs of our preclinical studies and clinical trials;
- continued progress in our research and development programs, including the preclinical studies and clinical trials of our product candidates;
- our ability to initiate, and the progress, results, size, timing and costs of, additional future clinical trials of our product candidates that will be necessary to support any application for regulatory approval;
- our ability to maintain, expand and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make, or that we may receive, in connection with the licensing, filing, prosecution, defense and enforcement of any patents or other intellectual property rights;
- the cost of commercialization activities and arrangements, including the commercial manufacturing of our product candidates; and
- our ability to establish and maintain strategic arrangements and alliances with third-party collaborators to advance the research, development and commercialization of therapeutic products.

We cannot guarantee that additional capital will be available in sufficient amounts or on terms acceptable to us, if at all. We intend to seek additional funding through the public or private sales of our securities, including equity securities. Any additional equity financings will be dilutive to our stockholders and any additional debt financings may involve operating covenants that restrict our business.

If we cannot raise additional capital or obtain adequate funds, we may be required to curtail significantly our research and clinical programs or may not be able to continue our research or clinical development of our product candidates. Our failure to raise additional capital, or obtain adequate funds, will have a material adverse effect on our business, operating results, prospects, and market price of shares of our common stock.

Interim results from ongoing clinical trials and results from preclinical studies and earlier clinical trials are not predictive of our ongoing or future clinical trials.

All of our product candidates are still in an early stage of development, and we cannot be assured that the development of any of our product candidates will ultimately be successful. For example, although an independent data monitoring committee, or iDMC, supported the continuation of our Phase 2 PUMA study of ProHema based upon two scheduled interim data reviews, the PUMA study has not been completed and the interim data reviews, which were based upon data from a limited number of subjects who are still under evaluation and subject to ongoing safety surveillance, may not be predictive of safety or efficacy of ProHema in the final analysis of the PUMA study. In addition, although the results of our completed Phase 1b ProHema-01 study in adults with hematologic malignancies undergoing double umbilical cord blood transplant demonstrated human proof-of-concept, we may not achieve or duplicate these results in the PUMA study or in planned additional clinical trials of ProHema, including the PROMPT or PROVIDE studies in pediatric patients.

The results of our ongoing and future clinical trials may differ from interim results or from results achieved in earlier clinical trials or in preclinical studies for a variety of reasons, including:

- we may not demonstrate the potency and efficacy benefits observed in preclinical studies or earlier clinical trials;
- our efforts to standardize and automate the manufacture of ProHema may adversely affect its safety, purity, potency or efficacy;
- the expansion in the number of participating clinical centers, which are independent institutions and are more geographically dispersed, may introduce additional variability and complexity in conducting clinical trials and in evaluating clinical results;
- deviations in the manufacture of ProHema by cell processing facilities at clinical centers participating in clinical trials that we conduct;
- use of our product candidates in pediatric patients may result in side effects or other adverse events not observed in adult patients;
- differences in study design, including differences in conditioning regimens, eligibility criteria, and patient populations;
- safety or adverse events in patients enrolled in current or future clinical trials; and
- later-stage trials that enroll a larger number of patients may not produce the same or similar results as earlier trials with fewer patients.

Results from preclinical testing and early clinical trials are not necessarily predictive of the results of later clinical trials, and interim results from any clinical trial do not necessarily predict final results of that trial. Even if our ongoing clinical trials are successful, we will likely need to conduct additional clinical trials, including registrational trials and trials in additional patient populations or under different treatment conditions, before we are able to seek approvals for our product candidates from the FDA and regulatory authorities outside the United States to market and sell these product candidates. Our failure to meet the requirements to support marketing approval for our product candidates in our ongoing and future clinical trials would substantially harm our business and prospects.

We may face delays in completing our clinical trials, and we may not be able to complete them at all.

We have not completed the clinical trials necessary to support an application for approval to market any of our product candidates. We may experience delays in our ongoing clinical trials, and we do not know whether we will be able to initiate, enroll patients in, or complete, our planned clinical trials on time, if at all. Our current and future clinical trials of our product candidates may be delayed, unsuccessful or terminated as a result of many factors, including factors related to:

- difficulties in identifying eligible patients for participation in our clinical trials due to our focus on the development of product candidates for the treatment of rare diseases;
- difficulties enrolling a sufficient number of suitable patients to conduct our clinical trials, including difficulties relating to patients enrolling in studies with agents sponsored by our competitors;

- difficulties in achieving study endpoints, demonstrating efficacy and safety, and completing data analysis in clinical trials for any of our product candidates;
- the occurrence of unexpected safety issues or adverse events in any current or subsequent clinical trial of any product candidate;
- securing and maintaining the support of clinical investigators and investigational sites, and obtaining institutional review board, or IRB, approval at each site for the conduct of our clinical trials;
- governmental or regulatory delays, failure to obtain regulatory approval, or uncertainty or changes in regulatory requirements, policy or guidelines;
- reaching agreement on acceptable terms with third-party service providers and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different service providers and clinical trial sites;
- failure of clinical trial sites to manufacture certain of our product candidates consistently in accordance with our protocol-specified processes at their cell processing facilities for use in our clinical trials;
- our failure, or the failure of third-party service providers or clinical trial sites, to ensure the proper and timely conduct and analysis of our clinical trials;
- inability to reach agreement on clinical trial design and parameters with regulatory authorities, investigators and IRBs;
- obtaining sufficient quantities of critical reagents and other materials and equipment necessary for the manufacture and processing of any product candidate;
- data monitoring committees recommending suspension, termination or a clinical hold for various reasons, including concerns about patient safety;
- the serious, life-threatening diseases of the patients in our clinical trials, who may die or suffer adverse medical events for reasons that may not be related to our product candidates;
- failure of patients to complete clinical trials due to safety issues, side effects, or other reasons; and
- approval of competitive agents that may materially alter the standard of care or otherwise render our product candidates or clinical trial designs obsolete.

If we experience delays in the completion of any clinical trial of our product candidates or any of these clinical trials are terminated before completion, the commercial prospects of our product candidates will be harmed. In addition, any delays in commencing or completing our clinical trials will increase our costs, slow down our product candidate development and approval process, and jeopardize our ability to commence product sales and generate revenues. Furthermore, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates. Any of these occurrences would significantly harm our business, prospects, financial condition and results of operations.

Our clinical development of ProHema could be substantially delayed if the FDA requires us to conduct unanticipated studies or trials or imposes other requirements or restrictions.

The FDA may require us to generate additional preclinical, product or clinical data, including data supporting the use of our nutrient rich media, or NRM, formulation, or our reduced volume formulation for pediatric use, as a condition to continuing and completing the PUMA and PROMPT studies, or to initiating and completing the PROVIDE study or any other subsequent clinical trials, of ProHema. Additionally, the FDA may in the future have comments, or impose requirements, on our protocols for conducting the PUMA, PROMPT, or PROVIDE studies, or any other subsequent clinical trials, of ProHema. Any requirements to generate additional data or redesign or modify our protocols, or other additional comments, requirements or impositions by the FDA, may cause delays in the conduct of the PUMA study, the PROMPT study or the PROVIDE study, or other subsequent clinical development activities for ProHema, and could require us to incur additional development costs and resources, seek funding for these increased costs or resources or delay our timeline for, or cease, our clinical development activities for ProHema, or could create uncertainty and additional complexity in our ability to obtain regulatory approval for ProHema.

Further, if the results of our clinical trials are inconclusive, or if there are safety concerns or adverse events associated with our product candidates, we may:

- be delayed in obtaining, or unable to obtain, regulatory approval for our product candidates;
- be required to amend the protocols for our clinical trials, perform additional clinical trials to support approval or be subject to additional post-marketing testing requirements;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings or contraindications; or
- have regulatory authorities withdraw their approval of the product or impose restrictions on its use.

Our plans for clinical development and commercialization of our product candidates could be substantially delayed or restricted if the FDA or other regulatory authorities impose additional requirements on our manufacturing processes or if we are required to change our manufacturing processes to comply with regulatory requirements.

The requirement that ProHema be manufactured in close proximity to transplant centers within a short period of time before transplantation may present unprecedented complexities associated with ensuring consistent manufacture in compliance with regulatory requirements as necessary for marketing approval. The FDA has indicated that we will need to standardize the process for manufacturing ProHema, and that ProHema used in registrational clinical trials must be manufactured in compliance with FDA regulatory requirements. In addition, the FDA may impose additional requirements on our processes for the manufacture of ProHema or our other product candidates.

While ProHema is currently manufactured at clinical cell processing facilities operated by or affiliated with our clinical sites, we may be required to identify alternative processes for the manufacture of ProHema in compliance with applicable regulatory requirements, and in the future we may manufacture ProHema at facilities operated by us, by transplant centers, or by third parties. Any requirements to modify our manufacturing processes, and any delays in, or inability to, establish manufacturing processes acceptable to the FDA could require us to incur additional development costs or result in delays to our clinical development plans, or could create uncertainty and additional complexity in our ability to obtain regulatory approval for ProHema. Any such events could delay or prevent our ability to obtain regulatory approval or commercialize ProHema, which would adversely affect our business, financial condition and results of operations.

We study our product candidates in patient populations with significant comorbidities that may result in deaths or serious adverse or unacceptable side effects and require us to abandon or limit our clinical development activities.

Patients undergoing treatment with certain of our product candidates, including ProHema, may also receive chemotherapy, radiation, and/or other high dose or myeloablative treatments in the course of treatment of their disease, and may therefore experience side effects or adverse events, including death, that are unrelated to our product candidates. While these side effects or adverse events may be unrelated to our product candidates, they may still affect the success of our clinical studies. The inclusion of critically ill patients in our clinical studies may result in deaths or other adverse medical events due to underlying disease or to other therapies or medications that such patients may be using. Any of these events could prevent us from advancing ProHema or other product candidates through clinical development, and from obtaining regulatory approval, and would impair our ability to commercialize our product candidates. Any inability to advance ProHema or any other product candidate through clinical development would have a material adverse effect on our business, and the value of our common stock would decline.

Our planned clinical development activities for ProHema in pediatric patients, including our PROMPT and PROVIDE studies, present additional operational, technical and timeline risks.

Many clinical centers that could potentially participate in our pediatric clinical trials of ProHema are distinct and separate from the centers participating in the PUMA study, and finding a sufficient number of qualified centers that would be interested in participating in our pediatric trials may take additional time. There are fewer eligible patients with hematologic malignancies and rare genetic disorders for our PROMPT and PROVIDE studies because the total number of pediatric patients who undergo allogeneic HSCT for the treatment of such diseases and disorders is lower than it is in adults. This may increase the time to commencement of our planned and future pediatric studies, or may delay or limit our ability to enroll patients in these studies, and any of these events may impair our ability to complete our planned and future pediatric studies, including our PROMPT and PROVIDE studies.

Further, to evaluate ProHema in pediatric patients, we have developed a reduced volume formulation of ProHema for children, due to their smaller size and requirement for smaller infusion volume. Although we have received permission from the FDA to use a formulation of ProHema having a reduced volume for the treatment of pediatric patients in our planned PROMPT and PROVIDE studies, the FDA may require us to generate additional preclinical, product, or clinical data to support the use of any reduced volume formulation of ProHema in these studies prior to or following their commencement, or in any subsequent trials of ProHema, or may impose other restrictions on the use of any reduced volume formulation of ProHema. Any such requirement or imposition may present technical challenges and may cause further delays in the commencement or conduct of our planned pediatric clinical trials. Any delays in, or any inability to conduct, our planned clinical development activities for pediatric patients would have an adverse effect on our business operations.

Because our product candidates are based on novel technologies, it is difficult to predict the applicable regulatory pathway to approval and the time, the cost and our ability to successfully complete clinical development, and to obtain the necessary regulatory and reimbursement approvals required for commercialization, of our product candidates.

ProHema and other product candidates that we may develop based on our cell programming technology represent novel therapeutics, and we face uncertainties associated with the clinical development, regulatory pathways to approval, and reimbursement required for successful commercialization of these product candidates. The clinical development and regulatory approval of novel product candidates such as ours can be more expensive and take longer than for other more well-known or extensively studied pharmaceutical or biopharmaceutical product candidates due a lack of prior experiences on the side of both developers and regulatory agencies. Additionally, due to the uncertainties associated with the clinical development and the regulatory pathways of our product candidates, we may be required to modify or change our clinical development plans or our regulatory pathways for approval. Any such modification or changes could delay or prevent our ability to develop, obtain regulatory approval or commercialize our product candidates, which would adversely affect our business, financial condition and results of operations.

Cellular therapeutics, and stem cell therapies in particular, represent a relatively new therapeutic area, and the FDA has cautioned consumers about potential safety risks associated with these therapies. To date, there are relatively few approved cellular therapeutics. In addition, there are currently no approved products in any major territory throughout the world with a label designation that supports the use of a product to improve multi-lineage engraftment or survival in patients undergoing HSCT, which makes it difficult to determine the time and cost required to obtain regulatory approvals in the United States or other jurisdictions for ProHema or any other product candidates that we may develop.

Regulatory requirements governing cell therapy products have changed frequently and the FDA or other regulatory bodies may change the requirements for or identify different regulatory pathways for approval for any of our product candidates. For example, the FDA established the Office of Cellular, Tissue and Gene Therapies within its Center for Biologics Evaluation and Research, or CBER, to consolidate the review of gene therapy and related products, and the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its review, and it is possible that new or different bodies may be established or be granted the responsibility for regulating pharmacologically modulated cellular therapeutics such as ours. In particular, there is uncertainty as to whether the FDA will regulate pharmacologically modulated cellular therapeutics, such as ProHema and other product candidates that we may develop, as biological products (and therefore subject to approval under a biologics license application, or BLA) or as drug products (and therefore subject to approval under a new drug application, or NDA) and to date our discussions with the FDA have not been determinate. As a result, we may be required to change our regulatory strategy or to modify our applications for regulatory approval, which could delay and impair our ability to complete the clinical development of, and obtain regulatory approval for our product candidates. Changes in regulatory authorities and advisory groups, or any new requirements or guidelines they promulgate, may lengthen the regulatory review process, require us to perform additional studies, increase our development costs, lead to changes in regulatory pathways, positions and interpretations, delay or prevent approval and commercialization of our product candidates or lead to significant post-approval limitations or restrictions. As we advance our product candidates, we will be required to consult with the FDA and other regulatory authorities, and our products will likely be reviewed by the FDA's advisory committee. We also must comply with applicable requirements, and if we fail to do so, we may be required to delay or discontinue development of our product candidates. Delays or unexpected costs in obtaining, or the failure to obtain, the regulatory approval necessary to bring a potential product to market could impair our ability to generate sufficient product revenues to maintain our business.

Even if we obtain regulatory approval for a product candidate, our products will remain subject to regulatory scrutiny.

Any product candidate for which we obtain marketing approval, along with the manufacturing processes, qualification testing, post-approval clinical data, labeling and promotional activities for such product, will be subject to continual and additional requirements of the FDA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information, reports, registration and listing requirements, requirements relating to current good manufacturing practices, or cGMP, quality control, quality assurance and corresponding maintenance of records and documents, 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 conditions of approval, or contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. The FDA closely regulates the post-approval marketing and promotion of pharmaceutical and biological products to ensure such products are marketed only for the approved indications and in accordance with the provisions of the approved labeling. Later discovery of previously unknown problems with our products, manufacturing processes, or failure to comply with regulatory requirements, may lead to various adverse conditions, including significant delays in bringing our product candidates to market and or being precluded from manufacturing or selling our product candidates, any of which could significantly harm our business.

We expect to rely on orphan drug status to develop and commercialize certain of our product candidates, but our orphan drug designations may not confer marketing exclusivity or other expected commercial benefits.

We expect to rely on orphan drug exclusivity for ProHema and potential future product candidates that we may develop. Orphan drug status confers seven years of marketing exclusivity in the United States under the Federal Food, Drug, and Cosmetic Act, and up to ten years of marketing exclusivity in Europe for a particular product in a specified indication. The FDA has granted orphan designation for ProHema for the enhancement of stem cell engraftment to treat neutropenia, thrombocytopenia, lymphopenia and anemia, and the European Commission has granted orphan designation for ProHema for the treatment of acute myeloid leukemia. While we have been granted these orphan designations, we will not be able to rely on these designations to exclude other companies from manufacturing or selling biological products using the same principal molecular structural features for the same indication beyond these timeframes. Furthermore, any marketing exclusivity in Europe can be reduced from ten years to six years if the initial designation criteria have significantly changed since the market authorization of the orphan product.

For any product candidate for which we have been granted orphan drug designation in a particular indication, it is possible that another company also holding orphan drug designation for the same product candidate will receive marketing approval for the same indication before we do. If that were to happen, our applications for that indication may not be approved until the competing company's period of exclusivity expires. Even if we are the first to obtain marketing authorization for an orphan drug indication in the United States, there are circumstances under which a competing product may be approved for the same indication during the seven-year period of marketing exclusivity, such as if the later product is shown to be clinically superior to our orphan product, or if the later product is deemed a different product than ours. Further, the seven-year marketing exclusivity would not prevent competitors from obtaining approval of the same product candidate as ours for indications other than those in which we have been granted orphan drug designation, or for the use of other types of products in the same indications as our orphan product.

We may be subject to certain regulations, including federal and state healthcare fraud and abuse laws and health information privacy and security laws. Any failure to comply with these regulations could have a material adverse effect on our business and financial condition.

If we obtain FDA approval for any of our product candidates and begin commercializing those products in the United States, our operations may be subject to various federal and state healthcare laws, including, without limitation, fraud and abuse laws, false claims laws, data privacy and security laws, as well as transparency laws regarding payments or other items of value provided to healthcare providers. These laws may impact, among other things, our proposed sales, marketing and education programs. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. Because of the breadth of these laws and the narrowness of the safe harbors, it is possible that some of our business activities could be subject to challenge under one or more of these laws. Additionally, if our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

Risks Related to Our Reliance on Third Parties

We depend on facilities operated by transplant centers for the manufacture of ProHema under specific conditions. Any failure by these facilities to manufacture ProHema consistently and under the proper conditions may result in delays to our clinical development plans and impair our ability to obtain approval for, or commercialize, ProHema.

ProHema is currently manufactured at clinical cell processing facilities operated by or affiliated with our clinical sites and is required to be manufactured in close proximity to the treatment site on the same day as product administration. The FDA has stated that we will be required to standardize the manufacture of ProHema, including our oversight for facility and raw material and vendor qualification through to final product analytical testing and release. The manufacture of ProHema for use in registrational clinical trials and commercialization will be subject to the requirements of applicable regulatory authorities, including the FDA, and the use of our current manufacturing processes to manufacture ProHema for commercialization may require each of the clinical cell processing facilities at which ProHema is manufactured to comply with cGMP and other regulatory requirements, and be subject to inspections by the FDA or other applicable regulatory authorities that would be conducted after the submission of a BLA or other marketing application. Although we are responsible for ensuring compliance with applicable regulatory requirements and for overseeing all aspects of product manufacture and release prior to applying for marketing approval, we do not control the activities of these third-party cell processing facilities and are completely dependent on their ability to comply with the FDA's requirements and to properly execute the protocol for the manufacture of ProHema. In particular, if the FDA requires each of the clinical cell processing facilities to comply with cGMP, there can be no guarantee that they will be able to do so. Because of these manufacturing requirements, if the applicable clinical cell processing facilities are unable to manufacture ProHema in a manner that conforms to our specifications and the FDA's strict regulatory requirements, we may be required to identify alternative processes or facilities for the manufacture of ProHema, which may require us to spend significant additional time and resources, and would impair our ability to complete the clinical development of, and to commercialize, ProHema. To comply with applicable regulatory requirements and our protocols for the manufacture of ProHema, the clinical cell processing facility may be required to possess or obtain certain equipment, including but not limited to biosafety cabinets, warming devices, cell washing devices, freezers or other materials, or to modify aspects of its operations, including its physical facility or layout, environmental systems, monitoring systems, quality systems or training procedures. If a clinical cell processing facility is unwilling or unable to comply with these regulatory requirements or with our protocols for the manufacture of ProHema, it will be restricted or prohibited from manufacturing ProHema and making it available for administration to patients. Any failure by these clinical cell processing facilities to properly manufacture ProHema may adversely affect the safety and efficacy profile of ProHema or cause the FDA or other regulatory authorities to impose restrictions or prohibitions on the manufacture and use of ProHema in both the clinical and the commercial setting, which would have an adverse effect on our business.

We depend on third-party suppliers for various components, materials and equipment required for the manufacture of ProHema and do not have supply arrangements for certain of these components.

We currently rely, and expect to continue to rely, on third-party suppliers for components necessary for the manufacture of ProHema. We have not entered into, and may not be able to enter into, agreements for the supply of certain components. Even if we are able to enter into such agreements, we may be limited to a sole third-party for the supply of certain required components, including FT1050 and components for our NRM formulation. Additionally, to date, we and our clinical cell processing facilities have purchased equipment, materials and disposables, such as automated cell washing devices, automated cell warming units, commercially available media and cell transfer and wash sets, used for the manufacture of ProHema from third parties. We rely on the general commercial availability of these materials, and we do not have any current contractual relationships for the supply of these materials. Accordingly, we may incur delays or increased costs due to any interruption in supply, and we cannot guarantee that we will have an adequate supply of components, equipment, materials and disposables to complete our planned clinical development and commercialization of ProHema.

If we are required to change suppliers, or modify the components, equipment, materials or disposables used for the manufacture of ProHema, we may be required to change our manufacturing processes or clinical trial protocols or to provide additional data to regulatory authorities in order to use any alternative components, equipment, materials or disposables, any of which could delay, or increase the costs required to complete, our clinical development and commercialization of ProHema. Additionally, any such change or modification may adversely affect the safety, efficacy or potency of ProHema, and could adversely affect our clinical development of ProHema and harm our business.

We face a variety of challenges and uncertainties associated with our dependence on the availability of human umbilical cord blood units, or CBUs, at cord blood banks for the manufacture of ProHema.

CBUs are one of the raw materials for the manufacture of ProHema. The CBUs currently used in the manufacture of ProHema are procured directly by the clinical cell processing facilities from cord blood banks. The availability of CBUs for the manufacture of ProHema depends on a number of regulatory, political, economic and technical factors outside of our control, including:

- government policies relating to the regulation of CBUs for clinical use;
- the availability of government funding for cord blood banks;
- individual cord blood bank policies and practices relating to CBU acquisition and banking;
- the pricing of CBUs;
- the methods used in searching for and matching CBUs to patients, which involve emerging technology related to current and future CBU parameters that guide the selection of an appropriate CBU for transplantation; and
- methods for the procurement and shipment of CBUs and their handling and storage at clinical sites.

Additionally, we do not have control over the supply, availability, price or types of CBUs that these clinical cell processing facilities use in the manufacture of ProHema. We rely heavily on these third parties to procure CBUs from cord blood banks that are compliant with government regulations and within the current standard of care. In addition, we may identify specific characteristics of CBUs, such as their volume and red blood cell content, which may limit their ability to be used to manufacture ProHema even though these CBUs may otherwise be suitable for use in allogeneic transplant. As a result, the requirement for CBUs to meet our specifications may limit the potential inventory of CBUs eligible for use in the manufacture of ProHema.

In the United States, cord blood banks are required to file a biologics license application, or BLA, and to meet certain continued regulatory requirements, in order to bank and provide CBUs for transplantation. CBUs from a cord blood bank that maintains a BLA are considered to be licensed and have a product label describing their intended use. While the FDA currently allows unlicensed CBUs to be used for transplantation, and we have used both unlicensed and licensed CBUs in the manufacture of ProHema for our clinical trials, the FDA may later prohibit the use of unlicensed CBUs for transplantation or require ProHema to be manufactured using only licensed CBUs. Additionally, although CBUs from foreign cord blood banks, which are generally unlicensed, are currently available in the United States for use in transplantation and we have used CBUs from foreign cord blood banks in our clinical trials, changes in U.S. and foreign regulations may prohibit or limit the future use of foreign CBUs in the United States. Any inability to procure adequate supplies of CBUs will adversely affect our ability to develop and commercialize ProHema.

We currently rely on third parties to conduct certain research and development activities and to support the conduct of our clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to timely develop, obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.

We have relied upon and expect to continue to rely upon third parties for the conduct of certain research and preclinical development activities and for the execution of our clinical trials. We control only certain aspects of the activities of these third parties. We are responsible for complying, and we are responsible for ensuring that our third-party service providers comply, with good clinical practices, or GCP, which are regulations and guidelines enforced by the FDA, as well as comparable foreign regulations and guidelines, for all of our product candidates in clinical development. Regulatory authorities enforce these regulations through periodic inspections of trial sponsors, principal investigators and trial sites. We cannot assure that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials comply with GCP requirements. In addition, our registrational clinical trials must be conducted with product produced under applicable regulatory requirements.

If these third parties do not successfully carry out their contractual duties or obligations, meet expected deadlines or successfully complete activities as planned, or if the quality or accuracy of the research, preclinical development activities or clinical data they obtain is compromised due to the failure to adhere to our protocols, regulatory requirements or for other reasons, our research, preclinical development activities and clinical trials, and the development of our product candidates, may be extended, delayed or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. Further, if our agreements with third parties are terminated for any reason, the development of our product candidates may be delayed or impaired, and we may be unable to advance our product candidates. As a result, our results of operations and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenues could be delayed.

We rely on third parties for the manufacture of our product candidates.

We do not independently conduct all aspects of our product manufacturing, and currently rely and expect to continue to rely on third-party manufacturers for the manufacture of any product candidates that we may develop. These third-party manufacturers will be required to comply with applicable FDA regulatory requirements and other applicable laws and regulations. We will have no control over the ability of these third parties to comply with these requirements, or to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or any other applicable regulatory authorities do not approve the facilities of these third parties for the manufacture of our product candidates or any products that we may successfully develop, or if it withdraws any such approval, or if our suppliers or contract manufacturers decide they no longer want to supply or manufacture for us, we may need to find alternative manufacturing facilities, in which case we might not be able to identify manufacturers for clinical or commercial supply on acceptable terms, or at all. In addition, we anticipate that the manufacture of our product candidates will be difficult, and it is possible that any third-party manufacturers that we engage may experience delays or technical challenges in such manufacture. Any of these factors would significantly impact our ability to develop, obtain regulatory approval for or commercialize our product candidates, and would adversely affect our business.

Risks Related to Our Intellectual Property

If we are unable to protect our intellectual property, other companies could develop products based on our discoveries, which may reduce demand for our products and harm our business.

Our commercial success will depend in part on our ability to obtain and maintain intellectual property protection for our product candidates, the processes used to manufacture them and the methods for using them, in order to prevent third parties from making, using, selling, offering to sell or importing our product candidates. We own and have exclusive licenses to patent portfolios for our product candidates, although we cannot be certain that our existing patents and patent applications provide adequate protection or that any additional patents will issue to us with claims that provide adequate protection of our other product candidates. Further, we cannot predict the breadth of claims that may be enforced in our patents if we attempt to enforce them or if they are challenged in court or in other proceedings. If we are unable to secure and maintain protection for our product candidates, or if any patents we obtain or license are deemed invalid and unenforceable, our ability to commercialize or license our technology could be adversely affected.

Others have filed, and in the future are likely to file, patent applications covering products and technologies that are similar, identical or competitive to ours or important to our business. We cannot be certain that any patent application owned by a third party will not have priority over patent applications filed or in-licensed by us, or that we or our licensors will not be involved in interference, opposition, reexamination, review, reissue, post grant review or invalidity proceedings before U.S. or non-U.S. patent offices.

We also rely upon unpatented trade secrets and improvements, unpatented know-how and continuing technological innovation to develop and maintain our competitive position, which we seek to protect, in part, through confidentiality agreements with our commercial collaborators, employees and consultants. We also have invention or patent assignment agreements with our employees and some, but not all, of our commercial collaborators and consultants. However, if our employees, commercial collaborators or consultants breach these agreements, we may not have adequate remedies for any such breach, and our trade secrets may otherwise become known or independently discovered by our competitors, which would adversely affect our business position.

We depend on our licensors to prosecute and maintain patents and patent applications that are material to our business. Any failure by our licensors to effectively protect these intellectual property rights could adversely affect our business and operations.

Certain rights to our key technologies and product candidates, including intellectual property relating to ProHema and our induced pluripotent stem cell (iPSC) technology, are licensed from third parties. As a licensee of third party intellectual property, we rely on our licensors to file and prosecute patent applications and maintain patents, and otherwise protect the licensed intellectual property under some of our license agreements. We have not had and do not have primary control over these activities for certain of our licensed patents, patent applications and other intellectual property rights, and we cannot be certain that such activities will result in valid and enforceable patents and other intellectual property rights. Additionally, our licensors may have the right to control enforcement of our licensed patents or defense of any claims asserting the invalidity of these patents and we cannot be certain that our licensors will allocate sufficient resources or prioritize enforcement of such patents or defense of such claims to protect our interests in the licensed patents. Even if we are not a party to these legal actions, an adverse outcome could harm our business because it might prevent us from continuing to license intellectual property that we may need to operate our business.

If we fail to comply with our obligations under our license agreements, we could lose rights to our product candidates or key technologies.

We have obtained rights to develop, market and sell some of our product candidates, including ProHema, through intellectual property license agreements with third parties. These license agreements impose various diligence, milestone payment, royalty and other obligations on us. If we fail to comply with our obligations under our license agreements, we could lose some or all of our rights to develop, market and sell products covered by these licenses, and our ability to form collaborations or partnerships may be impaired. In addition, disputes may arise under our license agreements with third parties, which could prevent or impair our ability to maintain our current licensing arrangements on acceptable terms and to develop and commercialize the affected product candidates.

We may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights.

If we choose to go to court to stop another party from using the inventions claimed in any patents we obtain, that individual or company has the right to ask the court to rule that such patents are invalid or should not be enforced against that third party. These lawsuits are expensive and would consume time and resources and divert the attention of managerial and scientific personnel even if we were successful in stopping the infringement of such patents. There is a risk that the court will decide that such patents are not valid and that we do not have the right to stop the other party from using the inventions. There is also the risk that, even if the validity of such patents is upheld, the court will refuse to stop the other party on the ground that such other party's activities do not infringe our rights to such patents. If we were not successful in defending our intellectual property, our competitors could develop and market products based on our discoveries, which may reduce demand for our products.

We may infringe the intellectual property rights of others, which may prevent or delay our product development efforts and stop us from commercializing or increase the costs of commercializing our product candidates.

Our success will depend in part on our ability to operate without infringing the proprietary rights of third parties. Our competitors may have filed, and may in the future file, patent applications covering products and technologies similar to ours. Any such patent application may have priority over our patent applications, which could further require us to obtain rights from third parties to issued patents covering such products and technologies. We cannot guarantee that the manufacture, use or marketing of ProHema or any other product candidates that we develop will not infringe third-party patents.

A third party may claim that we are using inventions covered by the third party's patent rights and may go to court to stop us from engaging in our normal operations and activities, including making or selling our product candidates. Patent litigation is costly and time consuming. We may not have sufficient resources to address these actions, and such actions could affect our results of operations and divert the attention of managerial and scientific personnel.

If a patent infringement suit were brought against us, we may be forced to stop or delay developing, manufacturing, or selling potential products that are claimed to infringe a third party's intellectual property, unless that third party grants us rights to use its intellectual property. In such cases, we may be required to obtain licenses to patents or proprietary rights of others in order to continue development, manufacture or sale of our products. If we are unable to obtain a license or develop or obtain non-infringing technology, or if we fail to defend an infringement action successfully, or if we are found to have infringed a valid patent, we may incur substantial monetary damages, encounter significant delays in bringing our product candidates to market and be precluded from manufacturing or selling our product candidates, any of which could harm our business significantly.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed alleged trade secrets.

As is common in the biotechnology and pharmaceutical industries, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and independent contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we could lose valuable intellectual property rights or personnel, which could adversely affect our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

Risks Related to the Commercialization of Our Product Candidates

We have limited marketing experience and do not have a sales force or distribution capabilities, and if our products are approved, we may be unable to commercialize them successfully.

We currently have limited experience in marketing and selling therapeutic products. If any of our product candidates are approved for marketing, we intend to establish marketing and sales capabilities internally or we may selectively seek to enter into partnerships with other entities to utilize their marketing and distribution capabilities. If we are unable to develop adequate marketing and sales capabilities on our own or effectively partner with third parties, our product revenues will suffer.

The commercial success of our product candidates will depend upon the degree of market acceptance by physicians, patients, third-party payers and others in the medical community.

The commercial success of our products, if approved for marketing, will depend in part on the medical community, patients and third-party payers accepting our product candidates as effective and safe. If these products do not achieve an adequate level of acceptance, we may not generate significant product revenue and may not become profitable. The degree of market acceptance of our products, if approved for marketing, will depend on a number of factors, including:

- the safety and efficacy of the products, and advantages over alternative treatments;
- the labeling of any approved product;
- the prevalence and severity of any side effects, including any limitations or warnings contained in a product's approved labeling;
- the emergence, and timing of market introduction, of competitive products;
- the effectiveness of our marketing strategy; and
- sufficient third-party insurance coverage or governmental reimbursement.

Even if a potential product displays a favorable efficacy and safety profile in preclinical studies and clinical trials, market acceptance of the product will not be known until after it is launched. Any failure to achieve market acceptance for our product candidates will harm our business, results and financial condition.

We expect to face uncertainty regarding the pricing of ProHema and any other product candidates that we may develop. If pricing policies for our product candidates are unfavorable, our commercial success will be impaired.

Due to the targeted indication of HSCT procedures in general and our HSC product candidates in particular, we face significant uncertainty as to the pricing of any such products for which we may receive marketing approval. While we anticipate that pricing for any cellular therapeutic product candidates that we develop will be relatively high due to their anticipated use in a one-time, potentially life-saving procedure with curative intent, the biopharmaceutical industry has recently experienced significant pricing pressures, including in the area of orphan drug products. Additionally, because our target patient populations are relatively small, the pricing and reimbursement of our product candidates, if approved, must be adequate to support commercial infrastructure. If pricing is set at unsatisfactory levels, our ability to successfully market and sell our product candidates will be adversely affected.

The insurance coverage and reimbursement status of newly-approved products is uncertain. Failure to obtain or maintain adequate coverage and reimbursement for new products could limit our product revenues.

The availability and extent of reimbursement by governmental and private payers is essential for most patients to be able to afford expensive treatments, such as HSCT. There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products by government and third-party payers. In particular, there is no body of established practices and precedents for reimbursement of stem cell products, and it is difficult to predict what the regulatory authority or private payer will decide with respect to reimbursement levels for novel products such as ours. Our products may not qualify for coverage or direct reimbursement and may be subject to limited reimbursement. If reimbursement or insurance coverage is not available, or is available only to limited levels, we may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be sufficient to allow us to establish or maintain pricing to generate income.

In addition, reimbursement agencies in foreign jurisdictions may be more conservative than those in the United States. Accordingly, in markets outside the United States, the reimbursement for our products may be reduced compared with the United States and may be insufficient to generate commercially reasonable revenues and profits. Moreover, increasing efforts by governmental and third-party payers, in the United States and abroad, to cap or reduce healthcare costs may cause such organizations to limit both coverage and level of reimbursement for new products approved and, as a result, they may not cover or provide adequate payment for our product candidates. Failure to obtain or maintain adequate reimbursement for any products for which we receive marketing approval will adversely affect our ability to achieve commercial success.

If the market opportunities for our product candidates are smaller than we believe they are, our revenues may be adversely affected and our business may suffer. Because the target patient populations of our product candidates are small, we must be able to successfully identify patients and capture a significant market share to achieve and maintain profitability.

We focus our research and product development on treatments for orphan diseases and rare genetic disorders. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our product candidates, are based on estimates. These estimates may prove to be incorrect, and new studies may change the estimated incidence or prevalence of these diseases. The number of patients in the United States, Europe and elsewhere may turn out to be lower than expected or may not be otherwise amenable to treatment with our products, or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business. Additionally, because our target patient populations are small, we will be required to capture a significant market share to achieve and maintain profitability.

Risks Related to Our Business and Industry

The success of our product candidates, including ProHema, is substantially dependent on developments within the field of HSCT, some of which are beyond our control.

Our product candidates, including ProHema, are designed and are being developed as therapeutic entities for use in HSCT. Any adverse developments in the field of stem cell therapeutics generally, and in the practice of HSCT in particular, will negatively affect our ability to develop and commercialize our product candidates. If the market for HSCT procedures declines or fails to grow at anticipated levels for any reason, or if the need for patients to undergo HSCT procedures is obviated due to the development and commercialization of therapeutics targeting the underlying cause of diseases addressed by HSCT, our business prospects will be significantly harmed.

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

The biotechnology and pharmaceutical industries are intensely competitive and subject to rapid and significant technological change. We face competition from biotechnology and pharmaceutical companies, universities, and other research institutions, and many of our competitors have greater financial and other resources, such as larger research and development staff and more experienced marketing and manufacturing organizations. In particular, there are several companies and institutions developing products that may obviate the need for HSCT, or may be competitive to products in our research pipeline, or may render our product candidates obsolete or noncompetitive. Should one or more of these products be successful, the market for our products may be reduced or eliminated, and we may not achieve commercial success.

We may not be able to manage our business effectively if we are unable to attract and retain key personnel and consultants.

We may not be able to retain or attract qualified management, finance, scientific and clinical personnel and consultants due to the intense competition for qualified personnel and consultants among biotechnology, pharmaceutical and other businesses. If we are not able to retain and attract necessary personnel and consultants to accomplish our business objectives, we may experience constraints that will significantly impede the achievement of our development objectives, our ability to raise additional capital and our ability to implement our business strategy.

If we fail to maintain an effective system of disclosure controls and procedures and internal controls, our ability to produce accurate financial statements or comply with applicable regulations could be impaired.

As a public company, we are required to comply with the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, and the related rules and regulations of the SEC, expanded disclosure requirements, accelerated reporting requirements and more complex accounting rules. Company responsibilities required by the Sarbanes-Oxley Act include establishing and maintaining corporate oversight and adequate internal control over financial reporting and disclosure controls and procedures. Effective internal controls are necessary for us to produce reliable financial reports and are important to help prevent financial fraud.

We cannot assure that we will not have material weaknesses or significant deficiencies in our internal control over financial reporting. If we are unable to successfully remediate any material weakness or significant deficiency in our internal control over financial reporting, or identify any material weaknesses or significant deficiencies that may exist, the accuracy and timing of our financial reporting may be adversely affected, we may be unable to maintain compliance with securities law requirements regarding timely filing of periodic reports in addition to applicable stock exchange listing requirements, and our stock price may decline materially as a result.

We are party to a loan and security agreement that contains operating and financial covenants that may restrict our business and financing activities.

In July 2014, we entered into an amended and restated loan and security agreement with Silicon Valley Bank, pursuant to which we have been extended term loans in the aggregate principal amount of $20.0 million. Borrowings under this loan and security agreement are secured by substantially all of our assets, excluding certain intellectual property rights. The loan and security agreement restricts our ability, among other things, to:

- sell, transfer or otherwise dispose of any of our business or property, subject to limited exceptions;
- make material changes to our business or management;
- enter into transactions resulting in significant changes to the voting control of our stock;
- make certain changes to our organizational structure;
- consolidate or merge with other entities or acquire other entities;
- incur additional indebtedness or create encumbrances on our assets;
- pay dividends, other than dividends paid solely in shares of our common stock, or make distributions on and, in certain cases, repurchase our stock;
- enter into transactions with our affiliates;
- repay subordinated indebtedness; or
- make certain investments.

In addition, we are required under our loan agreement to comply with various operating covenants that may restrict our ability to finance our operations, engage in business activities or expand or fully pursue our business strategies. A breach of any of these covenants could result in a default under the loan and security agreement, which could cause all of the outstanding indebtedness under the facility to become immediately due and payable.

If we are unable to generate sufficient cash to repay our debt obligations when they become due and payable, we may not be able to obtain additional debt or equity financing on favorable terms, if at all, which may negatively affect our business operations and financial condition.

We have entered into a strategic research collaboration and license agreement with Juno Therapeutics, Inc. to pursue the identification and application of small molecule modulators to program certain genetically-engineered T cells. Our collaboration may be terminated, or may not be successful, due to a number of factors, which could have a material adverse effect on our business and operating results.

We are party to a strategic research collaboration and license agreement with Juno Therapeutics, Inc., or Juno, for the identification and application of small molecule modulators for programming the therapeutic properties of genetically-engineered chimeric antigen receptor (CAR) and T cell receptor (TCR) based cellular immunotherapies directed against certain targets designated by Juno. Under the agreement, Juno has agreed to fund our collaboration research activities for an initial research term ending in May 2019, subject to a two-year extension under certain circumstances, and we are eligible to receive target selection fees and clinical, regulatory, and commercial milestones, as well as royalties on sales, should any products using our modulators be developed and commercialized. Our collaboration with Juno may be terminated, or may not be successful, due to a number of factors. For example, we may be unable to identify small molecule modulators that are effective in modulating genetically-engineered T cell products, or Juno may elect not to develop any genetically-engineered T cell products incorporating any modulators that are identified through the collaboration. If the collaboration is unsuccessful for these or other reasons, or is otherwise terminated for any reason, we may not receive all or any of the research program funding, target selection fees, milestone payments or royalties under the agreement. Any of the foregoing could result in a material adverse effect on our business, results of operations and prospects and would likely cause our stock price to decline.

In addition, during the term of our research activities under the agreement, we have agreed to collaborate exclusively with Juno on the research and development of small molecule modulators with respect to T cells that have been genetically-engineered to express chimeric antigen receptors or T cell receptors against certain targets designated by Juno. Furthermore, during the term of the agreement, we will be unable to conduct, or enable third parties to conduct, research, development and commercialization activities using small molecule modulators to program T cell product candidates that have been genetically-engineered to express chimeric antigen receptors or T cell receptors directed against certain targets selected by Juno. These restrictions may prevent us from exploiting our small molecule modulators or impair our ability to pursue research, development and commercialization opportunities that we would otherwise deem to be beneficial to our business.

If we engage in an acquisition, reorganization or business combination, we will incur a variety of risks that could adversely affect our business operations or our stockholders.

From time to time we have considered, and we will continue to consider in the future, strategic business initiatives intended to further the expansion and development of our business. These initiatives may include acquiring businesses, technologies or products or entering into a business combination with another company. If we pursue such a strategy, we could, among other things:

- issue equity securities that would dilute our current stockholders' percentage ownership;
- incur substantial debt that may place strains on our operations;
- spend substantial operational, financial and management resources to integrate new businesses, technologies and products;
- assume substantial actual or contingent liabilities;
- reprioritize our development programs and even cease development and commercialization of our product candidates; or
- merge with, or otherwise enter into a business combination with, another company in which our stockholders would receive cash or shares of the other company on terms that certain of our stockholders may not deem desirable.

Although we intend to evaluate and consider acquisitions, reorganizations and business combinations in the future, we have no agreements or understandings with respect to any acquisition, reorganization or business combination at this time.

We face potential product liability exposure far in excess of our limited insurance coverage.

The use of our product candidates in clinical trials and the sale of any products for which we obtain marketing approval exposes us to the risk of product liability claims. Product liability claims might be brought against us by participants in clinical trials, consumers, healthcare providers, pharmaceutical companies or others selling or otherwise coming into contact with our product candidates. We carry product liability insurance and we believe our product liability insurance coverage is sufficient in light of our current clinical programs. In addition, if and when we obtain marketing approval for product candidates, we intend to expand our insurance coverage to include the sale of commercial products; however, we may be unable to obtain insurance coverage for any approved products on commercially reasonable terms or in sufficient amounts to protect us against losses due to liability.

On occasion, large judgments have been awarded in class action lawsuits based on drugs or medical treatments that had unanticipated adverse effects. In addition, under some of our agreements with clinical trial sites, we are required to indemnify the sites and their personnel against product liability and other claims. A successful product liability claim or series of claims brought against us or any third parties whom we are required to indemnify could cause our stock price to decline and, if judgments exceed our insurance coverage, could adversely affect our results of operations and business.

Patients with the diseases targeted by our product candidates are often already in severe and advanced stages of disease and have both known and unknown significant pre-existing and potentially life-threatening health risks. During the course of treatment, patients may suffer adverse events, including death, for a variety of reasons. Such events, whether or not resulting from our product candidates, could subject us to costly litigation, require us to pay substantial amounts of money to injured patients, delay, negatively affect or end our opportunity to receive or maintain regulatory approval to market our products, or require us to suspend or abandon our commercialization efforts. Even in a circumstance in which we do not believe that an adverse event is related to our products, the investigation into the circumstance may be time-consuming or inconclusive. These investigations may interrupt our development and commercialization efforts, delay our regulatory approval process, or impact and limit the type of regulatory approvals our product candidates receive or maintain. As a result of these factors, a product liability claim, even if successfully defended, could have a material adverse effect on our business, financial condition or results of operations.

We use hazardous chemicals, biological materials and infectious agents in our business. Any claims relating to improper handling, storage or disposal of these materials could be time consuming and costly.

Our research and development and manufacturing processes involve the controlled use of hazardous materials, including chemicals, biological materials and infectious disease agents. Our operations produce hazardous waste products. We cannot eliminate the risk of accidental contamination or discharge and any resultant injury from these materials. We may be sued for any injury or contamination that results from our use or the use by third parties of these materials, and our liability may exceed our insurance coverage and our total assets.

Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with the regulations of the FDA or foreign regulators, provide accurate information to the FDA or foreign regulators, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. Employee and independent contractor misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and cause serious harm to our reputation. If any actions alleging such conduct are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant effect on our business, including the imposition of significant fines or other sanctions.

Risks Related to Our Financial Condition and the Ownership of Our Common Stock

We have a limited operating history, have incurred significant losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future.

We are a clinical-stage biopharmaceutical discovery and development company, formed in 2007, with a limited operating history. We have not yet obtained regulatory approval for any product candidates or generated any revenues from therapeutic product sales. Since inception, we have incurred significant net losses in each year and as of June 30, 2015 we had an accumulated deficit of approximately $128.1 million. We expect to continue to incur losses for the foreseeable future as we continue to fund our ongoing and planned clinical trials of ProHema and our other ongoing and planned research and development activities. We also expect to incur significant operating and capital expenditures as we continue our development of, and seek regulatory approval for, our product candidates, in-license or acquire new product development opportunities, implement additional infrastructure and internal systems and hire additional scientific, clinical, and marketing personnel. We anticipate that our net losses for the next several years could be significant as we conduct our planned operations.

Because of the numerous risks and uncertainties associated with pharmaceutical and biological product development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve profitability. In addition, our expenses could increase if we are required by the FDA, or comparable foreign regulatory authorities, to perform studies or trials in addition to those currently expected, or if there are any delays in completing our clinical trials, preclinical studies or the research and development of any of our product candidates. The amount of our future net losses will depend, in part, on the rate of increase in our expenses, our ability to generate revenues and our ability to raise additional capital. These net losses have had, and will continue to have, an adverse effect on our stockholders' equity and working capital.

Our stock price is subject to fluctuation based on a variety of factors.

The market price of shares of our common stock could be subject to wide fluctuations as a result of many risks listed in this section, and others beyond our control, including:

- the results of our clinical trials and preclinical studies, and the results of clinical trials and preclinical studies by others;
- developments related to the FDA or to regulations applicable to cellular therapeutics generally or our product candidates in particular, including but not limited to regulatory pathways and clinical trial requirements for approvals;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, collaborations or capital commitments;
- developments related to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- additions or departures of key management or scientific personnel;
- actual or anticipated changes in our research and development activities and our business prospects, including in relation to our competitors;
- developments of technological innovations or new therapeutic products by us or others in the field of stem cell therapeutics or immunotherapeutics;
- announcements or expectations of additional equity or debt financing efforts;
- sales of our common stock by us, including pursuant to the terms of our stock purchase agreement with Juno Therapeutics, Inc., or by our insiders or our other stockholders;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- comments by securities analysts;
- fluctuations in our operating results; and
- general economic and market conditions.

These and other market and industry factors may cause the market price and demand for our common stock to fluctuate substantially, regardless of our actual operating performance, which may limit or prevent investors from readily selling their shares of common stock and may otherwise negatively affect the liquidity of our common stock. In addition, the stock market in general, and The NASDAQ Global Market and pharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. In the past, when the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit and divert the time and attention of our management.

Our principal stockholders exercise significant control over our company.

As of July 22, 2015, our executive officers, directors and entities affiliated with our five percent stockholders beneficially own, in the aggregate, shares representing approximately 58% of our outstanding voting stock. Although we are not aware of any voting arrangements in place among these stockholders, if these stockholders were to choose to act together, as a result of their stock ownership, they would be able to influence our management and affairs and control all matters submitted to our stockholders for approval, including the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. This concentration of ownership may have the effect of delaying or preventing a change in control of our company or affecting the liquidity and volatility of our common stock, and might affect the market price of our common stock.

We may sell additional equity or debt securities or enter into other arrangements to fund our operations, which may result in dilution to our stockholders and impose restrictions or limitations on our business.

We expect that significant additional capital will be needed in the future to continue our planned operations, and we may seek additional funding through a combination of equity offerings, debt financings, government or other third-party funding and other collaborations, strategic alliances and licensing arrangements. These financing activities may have an adverse effect on our stockholders' rights, the market price of our common stock and on our operations, and may require us to relinquish rights to some of our technologies, intellectual property or product candidates, issue additional equity or debt securities, or otherwise agree to terms unfavorable to us. We have an effective shelf registration statement on file with the SEC that provides for the sale of up to approximately $65 million in the aggregate of shares of our common stock, preferred stock, debt securities, warrants and/or units by us. Any such sale or issuance of securities may result in dilution to our stockholders and may cause the market price of our stock to decline, and new investors could gain rights superior to our existing stockholders. In addition, in July 2014, we entered into an amended and restated loan and security agreement with Silicon Valley Bank, which imposes restrictive covenants on our operations. Any future debt financings may impose additional restrictive covenants or otherwise adversely affect the holdings or the rights of our stockholders, and any additional equity financings will be dilutive to our stockholders. Furthermore, additional equity or debt financing might not be available to us on reasonable terms, if at all.

We have broad discretion over the use of our cash and cash equivalents and may not use them effectively.

Our management has broad discretion to use our cash and cash equivalents, and any additional funds that we may raise, to fund our operations and could spend these funds in ways that do not improve our results of operations or enhance the value of our common stock. The failure by our management to 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 to fund operations, we may invest our cash and cash equivalents in a manner that does not produce income or that loses value.

Provisions of Delaware law or our charter documents could delay or prevent an acquisition of our company, and could make it more difficult for you to change management.

Provisions of Delaware law and our amended and restated certificate of incorporation and amended and restated bylaws may discourage, delay or prevent a merger, acquisition or other change in control that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions may also prevent or delay attempts by stockholders to replace or remove our current management or members of our board of directors. These provisions include:

- a classified board of directors with limitations on the removal of directors;
- advance notice requirements for stockholder proposals and nominations;

- the inability of stockholders to act by written consent or to call special meetings;
- the ability of our board of directors to make, alter or repeal our amended and restated bylaws; and
- the authority of our board of directors to issue preferred stock with such terms as our board of directors may determine.

As a result, these provisions could limit the price that investors are willing to pay in the future for shares of our common stock. These provisions might also discourage a potential acquisition proposal or tender offer, even if the acquisition proposal or tender offer is at a premium over the then-current market price for our common stock.

Our ability to use our net operating loss carryforwards may be subject to limitation and may result in increased future tax liability to us.

Generally, a change of more than 50% in the ownership of a corporation's stock, by value, over a three-year period constitutes an ownership change for U.S. federal income tax purposes. An ownership change may limit a company's ability to use its net operating loss carryforwards attributable to the period prior to such change. We have not performed a detailed analysis to determine whether an ownership change under Section 382 of the Internal Revenue Code has occurred after each of our previous private placements of preferred stock or after the issuance of shares of common stock in connection with our IPO. In the event we have undergone an ownership change under Section 382, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards to offset U.S. federal taxable income may become subject to limitations, which could potentially result in increased future tax liability to us.

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

a) All information with respect to this item has been previously reported in our Current Report on Form 8-K.

b) None.

c) None.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosure

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

See Exhibit Index.

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.

Fate Therapeutics, Inc.

Date: August 5, 2015

By: /s/ Christian Weyer
Christian Weyer
President and Chief Executive Officer
(Principal Executive Officer)

By: /s/ J. Scott Wolchko
J. Scott Wolchko
Chief Financial Officer and Chief Operating Officer
(Principal Financial and Accounting Officer)

Table of Contents

Index to Exhibits

Exhibit Number	Description of Document
3.1	Amended and Restated Certificate of Incorporation (filed as Exhibit 3.2 to the registrant's Registration Statement on Form S-1/A (File No. 333-190608) filed with the SEC on August 29, 2013 and incorporated herein by reference).
3.2	Amended and Restated Bylaws (filed as Exhibit 3.4 to the registrant's Registration Statement on Form S-1/A (File No. 333-190608) filed with the SEC on August 29, 2013 and incorporated herein by reference).
4.1	Specimen Common Stock Certificate (filed as Exhibit 4.1 to the registrant's Registration Statement on Form S-1/A (File No. 333-190608) filed with the SEC on August 29, 2013 and incorporated herein by reference).
4.2†	Stock Purchase Agreement between the registrant and Juno Therapeutics, Inc., dated as of May 4, 2015.
10.1†	Collaboration and License Agreement between the registrant and Juno Therapeutics, Inc., dated as of May 4, 2015.
10.2	Amendment to Amended and Restated Investor Rights Agreement between the registrant and certain of its stockholders, dated as of May 4, 2015.
31.1	Certification of Principal Executive Officer pursuant to Rules 13a-14 and 15-d-14 promulgated pursuant to the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Principal Financial Officer pursuant to Rules 13a-14 and 15-d-14 promulgated pursuant to the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
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

† Certain provisions of this Exhibit have been omitted pursuant to a request for confidential treatment.

Exhibit 4.2

STOCK PURCHASE AGREEMENT

THIS STOCK PURCHASE AGREEMENT (this "***Agreement***") is made as of May 4, 2015 (the "***Effective Date***"), by and between **FATE THERAPEUTICS, INC.**, a Delaware corporation (the "***Company***"), having its principal place of business at 3535 General Atomics Court, Suite 200, San Diego, CA 92121, and **JUNO THERAPEUTICS, INC.**, a Delaware corporation (the "***Purchaser***"), having its principal place of business at 307 Westlake Ave N, 300, Seattle, WA 98109.

WHEREAS, the Company and the Purchaser have entered into that certain Collaboration and License Agreement of even date herewith (the "***License Agreement***"); and

WHEREAS, in connection with the License Agreement, the Company wishes to sell to the Purchaser, and the Purchaser wishes to purchase from the Company, shares of the Company's common stock, par value $0.001 per share ("***Common Stock***"), on the terms and subject to the conditions set forth in this Agreement.

AGREEMENT

In consideration of the mutual covenants contained in this Agreement, and for other good and valuable consideration, the receipt of which is hereby acknowledged, the Company and the Purchaser hereby agree as follows:

1. DEFINITIONS

Capitalized terms used but not defined herein shall have the meanings provided in the License Agreement. In addition, the following terms shall have the respective meanings set forth below:

1.1 ***"Affiliate"*** shall mean any corporation or other entity, whether *de jure* or *de facto*, which is directly or indirectly controlling, controlled by or under common control of a party hereto for so long as such control exists. For the purposes of this Section, ***"control"*** shall mean the direct or indirect ownership of at least 50% of the outstanding shares or other voting rights of the subject entity having the power to vote on or direct the affairs of the entity, or if not meeting the preceding, the maximum voting right that may be held by the particular Party under the laws of the country where such entity exists.

1.2 "***Aggregate Purchase Price***" shall mean, (a) with respect to the Initial Closing, the product of the Initial Closing Share Price multiplied by the number of Initial Closing Shares, and (b) with respect to the Extension Closing, the product of the Extension Closing Share Price multiplied by the number of Extension Closing Shares, in each case rounded up to the nearest whole penny.

1.3 ***"Acquisition Transaction"*** shall mean any transaction involving: (i) any sale, license, lease, exchange, transfer or other disposition of the assets of the Company or any subsidiary of the Company constituting more than 50% of the consolidated assets of the Company or accounting for more than 50% of the consolidated revenues of the Company in

any one transaction or in a series of related transactions; (ii) any offer to purchase, tender offer, exchange offer or any similar transaction or series of related transactions made by any Person involving more than 50% of the outstanding shares of capital stock of the Company; or (iii) any merger, consolidation, business combination, share exchange, reorganization or similar transaction or series of related transactions involving the Company or any subsidiary of the Company whereby the holders of voting capital stock of the Company immediately prior to any such transaction hold less than 50% of the voting capital stock of the Company or the surviving corporation (or its parent company) immediately after the consummation of any such transaction.

1.4 "***Closing***" shall mean each of the Initial Closing and the Extension Closing, if any.

1.5 "***Closing Date***" shall mean each of the Initial Closing Date and the Extension Closing Date, if any.

1.6 "***Company Securities***" shall have the meaning set forth in Section 7.1.

1.7 "***Election Notice***" and "***Election Notice Date***" shall have the meaning set forth in Section 2.3(b).

1.8 "***Exchange Act***" shall mean the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

1.9 "***Extension Closing***," "***Extension Closing Date***" and "***Extension Closing Shares***" shall have the meanings set forth in Section 2.3(b).

1.10 ***"Extension Closing Share Price"*** shall mean 120% of the volume weighted average trading price per share of Common Stock for the 30 trading days ending on and including the Extension Notice Date, as reported on the Nasdaq Stock Market.

1.11 ***"Extension Notice"*** shall mean the written notice by Purchaser of the exercise of the Extension Option (as defined in Section 2.5 of the License Agreement).

1.12 ***"Extension Notice Date"*** shall mean the date of receipt by the Company of the Extension Notice, or if such date is not a trading day, the last trading day immediately prior to such date.

1.13 "***Initial Closing***," "***Initial Closing Date***" and "***Initial Closing Shares***" shall have the meanings set forth in Section 2.3(a).

1.14 "***Initial Closing Share Price***" shall mean $8.00 per share of Common Stock.

1.15 "***Nasdaq***" shall mean The Nasdaq Stock Market LLC.

1.16 "***Person***" shall mean any individual, corporation, limited liability company, partnership, association, trust, estate or other entity or organization.

1.17 "***Restricted Transaction***" shall have the meaning set forth in Section 7.1.

1.18 "***Rule 144***" shall have the meaning set forth in Section 4.8(a).

1.19 "***SEC***" shall mean the U.S. Securities and Exchange Commission.

1.20 "***SEC Filings***" shall mean all reports, schedules, forms, statements and other documents filed or required to be filed by the Company with the SEC pursuant to the requirements of the Securities Act or the Exchange Act, including material filed pursuant to Section 13(a) or 15(c) of the Exchange Act, in each case, together with all exhibits, supplements, amendments and schedules thereto, and all documents incorporated by reference therein.

1.21 "***Securities Act***" shall mean the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

1.22 "***Shares***" shall mean the shares of Common Stock purchased under this Agreement.

1.23 "***Share Price***" shall mean the Initial Closing Share Price or the Extension Closing Share Price, as applicable.

2. AGREEMENT TO SELL AND PURCHASE

2.1 **Authorization of Shares.** The Company has authorized the sale and issuance to the Purchaser of the Shares under the terms and conditions of this Agreement.

2.2 **Sale and Issuance of Shares.** On the basis of the representations and warranties herein, and upon the terms and subject to the conditions hereof, the Purchaser agrees to purchase from the Company, and the Company agrees to issue and sell to the Purchaser, the Shares at a price per share equal to the applicable Share Price.

2.3 **Closings.**

(a) **Initial Closing.** Subject to the satisfaction or waiver of the conditions set forth herein, the initial Closing (the "***Initial Closing***") shall take place on the 3rd calendar day following the Effective Date (or, if such 3rd calendar day is not a business day, the next business day subsequent to such 3rd calendar day) at the offices of the Company or at such earlier time and such other place as the Company and the Purchaser may agree in writing (the date of the Initial Closing, the "***Initial Closing Date***"). At the Initial Closing, (i) the Company shall deposit 1,000,000 Shares (the "***Initial Closing Shares***") with its transfer agent to be held in book entry form for the benefit of, and in the name of, the Purchaser and (ii) the Purchaser shall pay the Aggregate Purchase Price for the Initial Closing Shares in U.S. dollars by bank wire transfer in immediately available funds to a bank account designated by the Company.

(b) **Extension Closing.** Subject to the satisfaction or waiver of the conditions set forth herein, an additional Closing (the "***Extension Closing***") shall take place

on the 3rd calendar day (or, if such 3rd calendar day is not a business day, the next business day subsequent to such 3rd calendar day) following the receipt by the Purchaser of the Company's written election provided pursuant to Section 5.2(b) of the License Agreement (the "***Election Notice***" and the date of such Election Notice, the "***Election Notice Date***") at the offices of the Company or at such earlier time and such other place as the Company and the Purchaser may agree in writing (the date of the Extension Closing, the "***Extension Closing Date***"). At the Extension Closing, (i) the Company shall deposit the Extension Closing Shares (defined below) with its transfer agent to be held in book entry form for the benefit of, and in the name of, the Purchaser and (ii) the Purchaser shall pay the Aggregate Purchase Price for the Extension Closing Shares in U.S. dollars by bank wire transfer in immediately available funds to a bank account designated by the Company. "***Extension Closing Shares***" shall mean that number of Shares as is equal to the lesser of (A) 0.0999 multiplied by the number of shares of the Company's Common Stock outstanding as of the Election Notice Date, rounded down to the nearest whole share, minus the number of Initial Closing Shares purchased pursuant to Section 2.3(a) of this Agreement and (B) $10,000,000 divided by the Extension Closing Share Price, rounded down to the nearest whole share; provided, however, that to the extent that the purchase of such Extension Closing Shares in addition to the Initial Closing Shares would result in Purchaser beneficially owning in excess of 19.99% of the outstanding shares of Common Stock or the voting power of the Company as of immediately prior to the Effective Date (the "***Ownership Maximum***"), then the number of Extension Closing Shares purchased by Purchaser pursuant to this Agreement shall be reduced to the extent necessary such that such beneficial ownership does not exceed the Ownership Maximum. For the avoidance of doubt, if the Company does not deliver the Election Notice pursuant to Section 5.2(b) of the License Agreement within the time period specified therein, there will not be an Extension Closing and the Purchaser shall have no rights or obligations to acquire Shares under this Section 2.3(b).

(c) The parties agree that the aggregate number of shares to be issued at all Closings shall not exceed such number of shares that is equal to 19.99% of the outstanding shares of Common Stock or the voting power of the Company as of immediately prior to the Effective Date.

2.4 **Purchase Price Allocation**. The parties agree that for income tax purposes, the amount of the premium of each of the Initial Closing Share Price and the Extension Closing Share Price, as applicable, over the fair market value of the applicable Shares as of the applicable Closing Date shall be deemed additional consideration to the Company pursuant to the License Agreement, and the fair market value of the applicable Shares shall be deemed consideration to the Company for the issuance of such Shares. The Company, in its sole discretion shall make all decisions relating to the determination of the value of shares for purposes of this section. The parties shall file all income tax returns in a manner consistent with this section, and shall not take any income tax position inconsistent with this section in any tax proceeding or context, unless required by a final determination, within the meaning of section 1313 of the Internal Revenue Code of 1986, as amended (or any similar provision or non-federal income tax law).

3. REPRESENTATIONS, WARRANTIES AND COVENANTS OF THE COMPANY

The Company hereby represents and warrants to the Purchaser as of each Closing Date as follows:

3.1 **Organization, Good Standing and Qualification**. The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware and has all requisite corporate power and authority to carry on its business. The Company is duly qualified to transact business as a corporation and is in good standing in each jurisdiction in which the failure so to qualify would have a material adverse effect upon the Company's ability to perform its obligations under this Agreement.

3.2 **Authorization; Due Execution.** The Company has the requisite corporate power and authority to enter into this Agreement and to perform its obligations under the terms of this Agreement. All corporate action on the part of the Company, its officers, directors and stockholders necessary for the authorization, execution and delivery of this Agreement has been taken. This Agreement has been duly authorized, executed and delivered by the Company and, upon due execution and delivery by the Purchaser, this Agreement will be a valid and binding obligation of the Company, enforceable in accordance with its terms, except as enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally or by equitable principles.

3.3 **Valid Issuance of Stock.** The Shares, when issued, sold and delivered in accordance with the terms of Section 2 hereof for the consideration and on the terms and conditions set forth herein, will be duly and validly authorized and issued, fully paid and nonassessable and, based in part upon the representations of the Purchaser in this Agreement, will be issued in compliance with all applicable federal and state securities laws.

3.4 **No Violations or Defaults**. There exists no violation or default by the Company or any of its subsidiaries under (i) the Company's Amended and Restated Certificate of Incorporation or Amended and Restated Bylaws, each as amended to date (copies of which have been filed with the SEC), or such subsidiaries' charters, bylaws or other organizational documents, or (ii) the provisions of any instrument or agreement evidencing, governing or otherwise relating to any material indebtedness of the Company or any of its subsidiaries. There exists no default under any other agreement to which the Company or any of its subsidiaries is party, which default could have a material adverse effect upon the Company's ability to perform its obligations under this Agreement.

3.5 **SEC Filings.** The Company has timely filed with the SEC all SEC Filings. The SEC Filings were prepared in accordance with and, as of the date on which each such SEC Filing was filed with the SEC, complied in all material respects with the applicable requirements of the Securities Act and Exchange Act. None of such SEC Filings, including, without limitation, any financial statements, exhibits and schedules included therein and documents incorporated therein by reference, at the time filed, declared effective or mailed, as the case may be, contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading.

3.6 **Material Changes.** Since December 31, 2014, except as specifically disclosed in SEC Filings dated prior to the Effective Date (in the case of the Initial Closing) or dated prior to the Extension Notice Date (in the case of the Extension Closing): (i) there have been no events, occurrences or developments that have had or would reasonably be expected to have, either individually or in the aggregate, a material adverse effect on the business, operations or financial condition of the Company and its subsidiaries, taken as a whole, (ii) the Company has not incurred any material liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice and (B) liabilities not required to be reflected in the Company's financial statements pursuant to generally accepted accounting principles in the United States ("***GAAP***") or disclosed in filings made with the SEC, (iii) the Company has not altered materially its method of accounting or the manner in which it keeps its accounting books and records, (iv) the Company has not declared or made any dividend or distribution of cash, shares of capital stock or other property to its stockholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its capital stock (other than in connection with repurchases of unvested stock issued to employees of the Company), and (v) the Company has not issued any equity securities, except Common Stock issued pursuant to existing Company equity incentive, stock option or stock purchase plans or agreements or executive and director compensation arrangements disclosed in the SEC Filings dated prior to the Effective Date (in the case of the Initial Closing) or dated prior to the Extension Notice Date (in the case of the Extension Closing).

3.7 **Investment Company.** The Company is not, and immediately after receipt of payment for the Shares, will not be an "investment company" within the meaning of the Investment Company Act of 1940, as amended. The Company shall conduct its business in a manner so that it will not become subject to the Investment Company Act of 1940, as amended.

3.8 **Registration Rights.** Other than as disclosed in the Company's SEC Filings, no Person has any right to cause the Company to effect the registration under the Securities Act of the transfer of any securities of the Company.

3.9 **Listing and Maintenance Requirements.** The Common Stock is registered pursuant to Section 12(b) of the Exchange Act, and the Company has taken no action designed to terminate the registration of the Common Stock under the Exchange Act nor has the Company received any notification that the SEC is contemplating terminating such registration. The Company has not, in the previous twelve (12) months, received (i) written notice from Nasdaq that the Company is not in compliance with the listing or maintenance requirements of Nasdaq that would result in immediate delisting or (ii) any notification, Staff Delisting Determination, or Public Reprimand Letter (as such terms are defined in applicable Nasdaq listing rules) that requires a public announcement by the Company of any noncompliance or deficiency with respect to such listing or maintenance requirements (other than any public announcement relating to noncompliance or deficiency under Rules 5605(b)(1), 5605(c)(2), 5605(d)(2), 5450(a)(1), or 5250(c)(1) of the Nasdaq listing rules). The Company is in compliance with all listing and maintenance requirements of Nasdaq on the date hereof, except for any noncompliance or deficiency which may exist under Rules 5605(b)(1), 5605(c)(2), 5605(d)(2), 5450(a)(1), or 5250(c)(1) of the Nasdaq listing rules and

in each such case where the Company fully expects to, and has a plan to, regain compliance in accordance with applicable Nasdaq procedures and cure periods such as to avoid any suspension of trading of the Company's stock on Nasdaq or delisting actions by Nasdaq.

3.10 **No Integrated Offering.** Assuming the accuracy of Purchaser's representations and warranties set forth in Sections 4.4 — 4.7 hereof, none of the Company nor, to the Company's knowledge, any of its Affiliates or any Person acting on its behalf has, directly or indirectly, at any time within the past six (6) months, made any offers or sales of any Company security or solicited any offers to buy any security under circumstances that would (i) eliminate the availability of the exemption from registration under Regulation D under the Securities Act in connection with the offer and sale by the Company of the Shares or (ii) cause the offering of the Shares to be integrated with prior offerings by the Company for purposes of any applicable law, regulation or stockholder approval provisions, including, without limitation, under the rules and regulations of Nasdaq.

3.11 **OFAC.** Neither the Company nor, to the Company's knowledge, any director, officer, agent, employee, Affiliate or Person acting on behalf of the Company is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department ("***OFAC***"); and the Company will not directly or indirectly use the proceeds of the sale of the Shares, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Person or entity, towards any sales or operations in Cuba, Iran, Syria, Sudan, Myanmar or any other country sanctioned by OFAC or for the purpose of financing the activities of any Person currently subject to any U.S. sanctions administered by OFAC.

3.12 **FCPA.** Neither the Company nor, to the Company' knowledge, any agent or other Person acting on behalf of the Company, has: (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company (or made by any Person acting on its behalf of which the Company is aware) which is in violation of law or (iv) violated in any material respect any provision of the Foreign Corrupt Practices Act of 1977, as amended.

3.13 **Internal Accounting Controls.** The Company maintains a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset and liability accountability, (iii) access to assets or incurrence of liabilities is permitted only in accordance with management's general or specific authorization, and (iv) the recorded accountability for assets and liabilities is compared with the existing assets and liabilities at reasonable intervals and appropriate action is taken with respect to any differences.

3.14 **Sarbanes-Oxley; Disclosure Controls.** As of the date of the Initial Closing, the Company is an "emerging growth company," as defined in Section 2(a) of the

Securities Act. The Company is in compliance in all material respects with all of the provisions of the Sarbanes-Oxley Act of 2002 that are applicable to the Company. The Company has established disclosure controls and procedures (as such term is defined in Rule 13a-15(e) and 15d-15(e) under the Exchange Act) for the Company and designed such disclosure controls and procedures to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms. The Company's certifying officers have evaluated the effectiveness of the Company's disclosure controls and procedures as of the end of the period covered by the Company's most recently filed periodic report under the Exchange Act (such date, the "***Evaluation Date***"). The Company presented in its most recently filed periodic report under the Exchange Act the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there has been no change in the Company's internal control over financial reporting (as such term is defined in the Exchange Act) that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

3.15 **Governmental Consents.** No consent, approval, order or authorization of, or registration, qualification, designation, declaration or filing with, any federal, state, local or provincial governmental or regulatory authority or securities exchange on the part of the Company is required in connection with the consummation of the transactions contemplated by this Agreement, except for such notices or additional listing applications required or permitted to be filed with certain state and federal securities commissions or securities exchanges after the Closing Date, which notices and applications will be filed on a timely basis.

3.16 **No Required Additional Issuances.** The issuance and sale of the Shares will not obligate the Company to issue shares of Common Stock or other securities to any Person and will not result in a right of any holder of securities of the Company to adjust the exercise, conversion, exchange or reset price under any of such securities.

3.17 **Application of Takeover Protections; Rights Agreements.** The Company and its Board of Directors have taken all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Company's charter documents or the laws of the State of Delaware that is or would reasonably be expected to become applicable to the Purchaser as a result of Purchaser and the Company fulfilling their obligations or exercising their rights under this Agreement or the License Agreement, including, without limitation, the Company's issuance of the Shares and Purchaser's ownership of the Shares.

3.18 **No Conflict.** The Company's execution, delivery and performance of this Agreement does not violate (i) any provision of the Company's Amended and Restated Certificate of Incorporation or Amended and Restated Bylaws, each as amended to date (copies of which have been filed with the SEC), (ii) any provision of any material contract or agreement (copies of which have been filed with the SEC), or order, writ, judgment,

injunction, decree, determination or award to which the Company is a party or by which it is bound, or (iii) to the Company's knowledge, any law, rule or regulation currently in effect having applicability to the Company.

4. REPRESENTATIONS, WARRANTIES AND COVENANTS OF THE PURCHASER

The Purchaser hereby represents and warrants to the Company as of each Closing Date as follows:

4.1 **Organization and Good Standing**. The Purchaser is a corporation duly organized, validly existing and in good standing under the laws of its jurisdiction of incorporation and has all requisite corporate power and authority to carry on its business.

4.2 **Authorization; Due Execution.** The Purchaser has the requisite corporate power and authority to enter into this Agreement and to perform its obligations under the terms of this Agreement. All corporate action on the part of the Purchaser, its officers, directors and stockholders necessary for the authorization, execution and delivery of this Agreement have been taken. This Agreement has been duly authorized, executed and delivered by the Purchaser, and, upon due execution and delivery by the Company, this Agreement will be a valid and binding obligation of the Purchaser, enforceable in accordance with its terms, except as enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally or by equitable principles.

4.3 **No Current Ownership in the Company.** Other than the Shares acquired under this Agreement, neither the Purchaser nor any of its Affiliates own any shares of Common Stock or have any rights to acquire Common Stock.

4.4 **Purchase Entirely for Own Account.** This Agreement is made with the Purchaser in reliance upon the Purchaser's representation to the Company, which the Purchaser hereby confirms by executing this Agreement, that the Shares purchased by the Purchaser will be acquired for investment for the Purchaser's own account, not as a nominee or agent, and not with a view to the resale or distribution of any part thereof, and that the Purchaser has no present intention of selling, granting any participation in, or otherwise distributing the same. Purchaser does not have any contract, undertaking, agreement or arrangement with any Person to sell, transfer or grant participation to such Person or to any third party, with respect to the Shares, if issued.

4.5 **Disclosure of Information.** The Purchaser has received all the information that it has requested and that it considers necessary or appropriate for deciding whether to enter into this Agreement and to acquire the Shares, and the Purchaser further represents that it has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of the Shares; provided, however, that neither such inquiries nor any other investigation conducted by or on behalf of the Purchaser or its representatives or counsel shall modify, amend or affect Purchaser's right to rely on the truth, accuracy and completeness of the Company's representations and warranties contained in this Agreement or the License Agreement.

4.6 **Investment Experience.** The Purchaser acknowledges that it is able to fend for itself, can bear the economic risk of its investment and has such knowledge and experience in financial or business matters that it is capable of evaluating the merits and risks of the investment in the Shares. The Purchaser has not been organized solely for the purpose of acquiring the Shares.

4.7 **Accredited Investor.** The Purchaser is an "accredited investor" as such term is defined in Rule 501 of the General Rules and Regulations promulgated by the SEC pursuant to the Securities Act.

4.8 **Restricted Securities.** The Purchaser understands that:

(a) the Shares will not be registered under the Securities Act by reason of a specific exemption therefrom, and that the Purchaser must, therefore, bear the economic risk of such investment, unless and until a subsequent disposition thereof is registered under the Securities Act or is exempt from such registration, such as under Rule 144 of the Securities Act (***"Rule 144"***);

(b) each book-entry entitlement representing the Shares will be noted with the following legends:

(i) THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE "*ACT*") AND MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, ASSIGNED, PLEDGED OR HYPOTHECATED UNLESS AND UNTIL REGISTERED UNDER THE ACT OR UNLESS THE COMPANY HAS RECEIVED AN OPINION OF COUNSEL SATISFACTORY TO THE COMPANY AND ITS COUNSEL THAT SUCH REGISTRATION IS NOT REQUIRED; and

(ii) Any legend required to be placed thereon under applicable state securities laws.

(c) The Company will instruct its transfer agent not to register the transfer of the Shares (or any portion thereof) unless the conditions specified in the foregoing legends are satisfied, until such time as a transfer is made, pursuant to the terms of this Agreement, and in compliance with Rule 144 or pursuant to a registration statement or, if the opinion of counsel referred to above is to the further effect that such legend is not required in order to establish compliance with any provisions of the Securities Act or this Agreement.

4.9 **No Short Sales.** The Purchaser has not engaged, and will not engage, in any short sales of the Company's Common Stock within the three month period prior to the applicable Closing Date.

4.10 **No Legal, Tax or Investment Advice.** The Purchaser understands that nothing in the SEC Filings, this Agreement or any other materials presented to the Purchaser in connection with the purchase and sale of the Shares constitutes legal, tax or investment advice and that independent legal counsel has reviewed these documents and materials on the Purchaser's behalf. The Purchaser has consulted such legal, tax and investment advisors as

it, in its sole discretion, has deemed necessary or appropriate in connection with its purchase of the Shares.

5. CONDITIONS TO THE COMPANY'S OBLIGATIONS AT CLOSING

5.1 **Closing**. The Company's obligation to sell, issue and deliver the Shares to the Purchaser at each Closing shall be subject to the following conditions to the extent not waived by the Company:

(a) **Receipt of Payment**. The Company shall have received payment in full, by wire transfer of immediately available funds, for the Shares at the applicable Share Price.

(b) **License Agreement.** The License Agreement shall have been executed and delivered by the Company and the Purchaser and shall remain in full force and effect.

(c) **Representations and Warranties; Obligations.** The representations and warranties made by the Purchaser in Section 4 hereof shall be true and correct on the applicable Closing Date. The Purchaser shall have performed and complied with all obligations and conditions required to be performed and complied with by the Purchaser under this Agreement on, as of or prior to the applicable Closing Date.

(d) **Provision of Election Notice.** With respect to the Extension Closing, the Company shall have delivered the Election Notice to the Purchaser in accordance with Section 5.2(b) of the License Agreement.

6. CONDITIONS TO THE PURCHASER'S OBLIGATIONS AT CLOSING

6.1 **Closing.** The Purchaser's obligation to accept delivery of and pay for the Shares at each Closing shall be subject to the following conditions to the extent not waived by the Purchaser:

(a) **License Agreement.** The License Agreement shall have been executed and delivered by the Company and the Purchaser and shall remain in full force and effect.

(b) **Representations and Warranties; Obligations.** The representations and warranties made by the Company in Section 3 hereof shall be true and correct on the applicable Closing Date. The Company shall have performed and complied with all obligations and conditions to be performed and complied with by the Company under this Agreement on, as of or prior to the applicable Closing Date.

(c) **Compliance Certificate.** The Purchaser shall have received a certificate, dated such Closing Date, of an executive officer of the Company in which such officer, in his or her capacity as an officer of the Company, shall state that: the representations and warranties of the Company in this Agreement are true and correct; and

the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied hereunder at or prior to such Closing Date.

(d) **Secretary's Certificate.** The Purchaser shall have received a certificate, dated such Closing Date, of the secretary of the Company in which such secretary, in his or her capacity as secretary of the Company, shall certify and attach the resolutions of the Board of Directors of the company approving the Agreement, the License Agreement and the transactions contemplated hereunder, and shall certify that such resolutions have not been amended or modified and remain in full force and effect.

(e) **Good Standing Certificate.** The Purchaser shall have received a certificate from the Secretary of State of the State of Delaware dated within three (3) business days of such Closing Date evidencing the good standing and legal corporate existence of the Company.

(f) **Opinion of Counsel to the Company.** The Purchaser shall have received an opinion, dated such Closing Date, of Goodwin Procter LLP, counsel for the Company, in the form attached hereto as Exhibit A.

(g) **Registration Rights.** With respect to the Extension Closing, the Company shall have caused Purchaser to become a party to that certain Amended and Restated Investor Rights Agreement, dated as of August 8, 2013 (the "***IRA***"), among the Company and the securityholders listed on Exhibits A and B thereto, and to have the rights and obligations of, and be treated as, an Initiating Holder (as defined in the IRA), an S-3 Initiating Holder (as defined in the IRA), and a Holder (as defined in the IRA) thereunder beginning two (2) years after the Effective Date of the License Agreement and which will not include any registration rights that have been waived by existing securityholders under the IRA with respect to offerings of securities by the Company that may be conducted pursuant to the Company's Registration Statement on Form S-3 (File No. 333-199107), and shall have amended the IRA to provide that Purchaser's registration rights thereunder shall survive until the earlier of (i) one year following the end of the Research Term or (ii) such time as Rule 144 under the Securities Act is available for the sale of all of Purchaser's Shares during a three-month period without registration and without breach of the restrictions set forth in this Agreement (and assuming for the purposes of Rule 144 that Purchaser is subject to the volume limitations thereof as if Purchaser were an "affiliate" within the meaning of Rule 144).

(h) **Exercise of Extension Option.** With respect to the Extension Closing, the Purchaser shall have exercised the Extension Option in accordance with Section 2.5 of the License Agreement.

7. ADDITIONAL COVENANTS OF THE COMPANY AND THE PURCHASER.

7.1 **Restricted Transactions**. For the Research Term (as defined in the License Agreement), the Purchaser shall not, and shall not authorize, instruct, facilitate or permit any of its Affiliates or any other Person or entity to, engage in any of the following (a "***Restricted Transaction***"): (a) offer, sell or contract to sell securities of the Company or any of its

Affiliates or successors or any instruments convertible into or exchangeable or exercisable for securities of the Company or any of its Affiliates or successors (the "***Company Securities***") in a private placement or similar transaction; (b) sell any option or contract to purchase, purchase any option or contract to sell, or grant any option, right or warrant for the sale of the Company Securities; or (c) enter into any swap or any other agreement or any transaction that transfers, in whole or in part directly or indirectly, the economic consequence of ownership of the Company Securities, whether any such swap or transaction is to be settled by delivery of Common Stock or other securities, in cash or otherwise.

7.2 **Standstill**.

(a) The Purchaser agrees that during the Research Term (as defined in the License Agreement), except with the prior written consent of the Company, the Purchaser shall not, and shall not permit any of its officers, directors, investment advisors, agents, representatives or Affiliates to:

(i) except pursuant to Section 2.3(b) hereof, acquire, offer to acquire, agree to acquire or cause or effect the acquisition of, directly or indirectly, by purchase or otherwise, beneficial ownership of any securities or instruments convertible into any of the Company Securities such that the aggregate beneficial ownership of the Purchaser, its officers, directors (but excluding for these purposes beneficial ownership of Robert Nelsen through ARCH Venture Fund VI, L.P.) and Affiliates (on a combined basis), if (A) subsequent to the Extension Closing Date, is 20% or more of the Company's outstanding Common Stock, and (B) prior to the Extension Closing Date, is [***]% or more of the Company's outstanding Common Stock calculated as of immediately prior to the Effective Date;

(ii) solicit or encourage any other entity to solicit proxies (as such terms are defined in Regulation 14A under the Exchange Act) with respect to any matter involving the Company, its nominees for directors or otherwise initiate, propose or solicit, or induce any other Person to initiate, propose or solicit any stockholder of the Company, any stockholder proposal or director nominations, any tender offer for Company Securities, any change of control of the Company, or for the purpose of convening a stockholders' meeting of the Company;

(iii) except with respect to proxies executed in connection with stockholder meetings, deposit any Company Securities in any voting trust or subject them to any voting agreement or other agreement of similar effect;

(iv) join or form any partnership, limited partnership, syndicate, or other group within the meaning of Section 13(d)(3) of the Exchange Act for the purpose of acquiring, holding or disposing of beneficial ownership of any Company Securities or encourage, advise or, for the purpose of circumventing or avoiding any of the provisions of this Agreement, assist any Person to do any of the foregoing or otherwise take any action individually or jointly with any partnership, limited partnership, syndicate, or other group or assist any other Person or group of Persons in taking any action it could not individually take under this Agreement;

(v) make, effect, cause, initiate or participate in any Acquisition Transaction with respect to the Company (for the avoidance of doubt, Purchaser may directly engage Company's management and/or its Board of Directors in private discussions with respect to an Acquisition Transaction by and between Purchaser and Company); or

(vi) make any public proposals to the Company or any of its Affiliates, directors, officers, employees, agents, representatives, successors or security holders concerning, or otherwise announce any intention to effect or participate in any Acquisition Transaction relating to the Company or any Affiliate or successor of the Company or take any action that would require the Company to make a public announcement regarding the possibility of an Acquisition Transaction with the Purchaser or any of its Affiliates.

(b) **Termination of Standstill**. The obligations of the Purchaser under Section 7.2(a) shall terminate in the event of (i) any *bona fide* third party tender or exchange offer for at least 50% of the outstanding voting capital stock of the Company, which third party tender or exchange offer was not solicited or otherwise encouraged by the Purchaser, or (ii) the Company enters into any agreement for an Acquisition Transaction with any entity not affiliated with the Purchaser pursuant to a proposal by such third party, which third party proposal was not solicited or otherwise encouraged by the Purchaser. All of the provisions of Section 7.2(a) shall be reinstated and shall apply in full force according to their terms in the event that any event set forth in this Section 7.2(b) is not completed or if the announced transaction is abandoned and no similar transaction has been announced and not abandoned within ninety (90) days thereafter. Upon reinstatement of the provisions of Section 7.2(a), the provisions of this Section 7.2(b) shall continue to govern in the event that any of the events described in this Section 7.2(b) shall occur.

7.3 **Market Stand-Off.** If requested by the representative of the underwriters of Common Stock (or other securities) of the Company, provided that Purchaser is then a beneficial owner of 5% or greater of the Company's outstanding Common Stock, the Purchaser shall enter into a customary lock-up agreement with the representative of the underwriters not to sell or otherwise transfer or dispose of any Common Stock (or other securities) of the Company held by the Purchaser for a period specified by the representative of the underwriters, in any case not to exceed 90 days following any registered offering of the Common Stock of the Company, provided that all officers, all directors and their affiliates, and all stockholders which then beneficially own 5% or greater of the Company's outstanding Common Stock (excluding investment companies or institutional investors that are not venture capital firms, which, for purposes of illustration only, based on the beneficial ownership table included in the Company's proxy statement filed on Schedule 14A with the SEC on April 2, 2015, would exclude only FMR LLC, Wellington Management Group LLC, and Kingdon Capital Management, L.L.C.) are bound by substantially the same lock-up agreement. Any discretionary waiver or termination of the restrictions of any or all of such lock-up agreements by the underwriters shall apply pro rata to all parties subject to such lock-up agreements, based on the number of shares subject to such lock-up agreements. The Company may impose stop-transfer instructions with respect to the shares of Common Stock (or other securities) subject to the foregoing restriction until the end of said periods.

7.4 **Shareholder Rights Plan.** No claim will be made or enforced by the Company or, with the consent of the Company, any other Person, that the Purchaser is an "Acquiring Person" under any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or similar anti-takeover plan or arrangement in effect or hereafter adopted by the Company, or that the Purchaser could be deemed to trigger the provisions of any such plan or arrangement, in either case solely by virtue of purchasing the Shares under this Agreement.

7.5 **Nasdaq Listing.** In the time and manner required by Nasdaq, the Company shall prepare and file with Nasdaq an additional shares listing application covering all of the Shares and shall use its commercially reasonable efforts to take all steps necessary to cause all of the Shares to be approved for listing on Nasdaq. The Company shall maintain compliance with all listing and maintenance requirements of Nasdaq on the date hereof, except for any noncompliance or deficiencies that may occur under Rules 5605(b)(1), 5605(c)(2), 5605(d)(2), 5450(a)(1), or 5250(c)(1) of the Nasdaq listing rules and in the event of any noncompliance or deficiency pursuant to such rules the Company shall use its best efforts to regain compliance in accordance with applicable Nasdaq procedures and cure periods such as to avoid any suspension of trading of the Company's stock on Nasdaq or delisting actions by Nasdaq.

7.6 **Legend Removal.** The legends set forth in Section 4.8(b) above shall be removed and the Company shall instruct its transfer agent for the Common Stock (the "***Transfer Agent***") to register the Shares in book-entry form free and clear of such legends or any other legends by electronic delivery at the applicable balance account at the Depository Trust Company, if (i) such Shares have been resold under an effective registration statement under the Securities Act, (ii) such Shares are sold or transferred in connection with a resale transaction in compliance with Rule 144 (if the transferor is not an Affiliate of the Company), or (iii) such Shares are eligible for resale under Rule 144, without the requirement for the Company to be in compliance with the current public information required under Rule 144 as to such Shares and without volume or manner-of-sale restrictions. The Company further agrees that it shall cause its counsel (i) after the effective date of a registration statement registering the resale of the Shares, to issue to the Transfer Agent, if required by the Transfer Agent, a "blanket" legal opinion or other letter to allow sales without restriction pursuant to the effective registration statement and (ii) provide all other opinions of counsel as may reasonably be required by the Transfer Agent in connection with the removal of legends pursuant to this Section 7.6. Following Rule 144 becoming available for the resale of the Shares, without the requirement for the Company to be in compliance with the current public information required under Rule 144 as to the Shares and without volume or manner-of-sale restrictions, the Company, upon the request of the Purchaser, shall cause Company counsel or other counsel satisfactory to the Transfer Agent to issue to the Transfer Agent a legal opinion stating that the Shares are eligible for sale under Rule 144 without the requirement for the Company to be in compliance with the current public information required under Rule 144 as to such securities and without volume or manner-of-sale restrictions. Any fees (with respect to the Transfer Agent, Company counsel or otherwise) associated with the issuance of such opinion or the removal of such legends shall be borne by the Company. The Company may not make any notation on its records or give

instructions to the Transfer Agent that enlarge the restrictions on transfer set forth in Section 4.8(b), other than with respect to any lock-up restrictions in connection with Section 7.3.

7.7 **Registration Rights.** The Company shall promptly and, in any event, within thirty (30) calendar days after the Effective Date, take all action necessary to cause Purchaser to become a party to the IRA and to have the rights and obligations of, and be treated as, an Initiating Holder (as defined in the IRA), an S-3 Initiating Holder (as defined in the IRA), and a Holder (as defined in the IRA) thereunder beginning [***] after the Effective Date of the License Agreement and which will not include any registration rights that have been waived by existing securityholders under the IRA with respect to offerings of securities by the Company that may be conducted pursuant to the Company's Registration Statement on Form S-3 (File No. 333-199107), and shall have amended the IRA to provide that Purchaser's registration rights thereunder shall survive until the earlier of (i) two (2) years or (ii) such time as Rule 144 or another similar exemption under the Securities Act is available for the sale of all of Purchaser's Shares during a three-month period without registration and without breach of the restrictions set forth in this Agreement (and assuming for the purposes of Rule 144 that Purchaser is subject to the volume limitations thereof as if Purchaser were an "affiliate" within the meaning of Rule 144).

8. MISCELLANEOUS.

8.1 **Waivers and Amendments.** Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively), only with the written consent of both the Company and the Purchaser.

8.2 **Severability.** If one or more provisions of this Agreement are held to be unenforceable under applicable law, such provision(s) shall be excluded from this Agreement and the balance of the Agreement shall be interpreted as if such provision(s) were so excluded and shall be enforceable in accordance with its terms.

8.3 **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware, without regard to conflicts of law principles.

8.4 **Counterparts.** This Agreement may be executed in two or more counterparts, each of which shall be deemed an original document, and all of which, together with this writing, shall be deemed one instrument. Facsimile and electronic (PDF) signatures shall be as effective as original signatures.

8.5 **Successors and Assigns.** Except as expressly provided hereunder, neither this Agreement nor any rights or obligations hereunder may be assigned or otherwise transferred by either party without the prior written consent of the other party; *provided, however*, that either party may assign this Agreement and its rights and obligations hereunder without the other party's consent:

(a) in connection with the transfer or sale of all or substantially all of the business of such party to which the License Agreement relates to a third party, whether by merger, sale of stock, sale of assets or otherwise; or

(b) to an Affiliate, provided that the assigning party shall remain liable and responsible to the non-assigning party hereto for the performance and observance of all such duties and obligations by such Affiliate.

The rights and obligations of the parties under this Agreement shall be binding upon and inure to the benefit of the successors and permitted assigns of the parties. Any assignment not in accordance with this Agreement shall be void.

8.6 **Entire Agreement.** This Agreement and the other documents referred to herein constitute the entire agreement among the parties and no party shall be liable or bound to any other party in any manner by any warranties, representations, or covenants except as specifically set forth herein or therein.

8.7 **Payment of Fees and Expenses.** Except as set forth in Section 7.6 of this Agreement, each of the Company and the Purchaser shall bear its own expenses and legal fees incurred on its behalf with respect to this Agreement and the transactions contemplated hereby. If any action at law or in equity is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees, costs and necessary disbursements in addition to any other relief to which such party may be entitled.

8.8 **Broker's Fee.** Each of the Company and the Purchaser hereby represents that there are no brokers or finders entitled to compensation in connection with the sale of the Shares, and each party shall indemnify the other party for any such fees for which such party is responsible.

8.9 **Notices.** All notices required or permitted hereunder shall be in writing and shall be deemed effectively given: (i) upon personal delivery to the party to be notified; (ii) seven (7) calendar days after having been sent by registered or certified mail, return receipt requested, postage prepaid; or (iii) two (2) business days after deposit with a nationally recognized overnight courier with written verification of receipt. All communications shall be sent to the other party hereto at the mailing address set forth below, or at such other mailing address as such party may designate by ten (10) days' advance written notice to the other party hereto.

(a) If to the Company, notices shall be addressed to:

Fate Therapeutics, Inc.
3535 General Atomics Court, Suite 200
San Diego, California, 92121, USA
Attention: Chief Operating Officer

(b) If to the Purchaser, notices shall be addressed to:

Juno Therapeutics, Inc.

307 Westlake Avenue North, Suite 300
Seattle, Washington, 98109, USA
Attention: General Counsel

With respect to the Election Notice and Extension Notice, such notices shall also be sent by e-mail on the date of such notices. In the case of the Election Notice, the Company shall send such notice by e-mail to the Purchaser's then current Chief Financial Officer and then current General Counsel. In the case of the Extension Notice, the Purchaser shall send such notices by e-mail to the Company's then current Chief Operating Officer. Such notices shall be deemed received by the Purchaser or the Company, as applicable, upon receipt of such e-mails (whether or not such e-mail is checked or read by the recipient) by such persons for purposes of determining the date of delivery of such notices hereunder. Concurrently with the execution of this Agreement, the Purchaser has provided the Company with the e-mail addresses of its current Chief Financial Officer and its current General Counsel, and the Company has provided the Purchaser with the e-mail address of its current Chief Operating Officer. Each party covenants to promptly update the other of changes in these positions and e-mail addresses.

8.10 **Headings.** The headings of the various sections of this Agreement have been inserted for convenience of reference only and shall not be deemed to be part of this Agreement.

8.11 **Disclaimer**. EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT AND THE LICENSE AGREEMENT, NEITHER PARTY MAKES ANY REPRESENTATION OR WARRANTY TO THE OTHER PARTY OF ANY NATURE, EXPRESS OR IMPLIED.

8.12 **Limitation of Liability**. NEITHER PARTY SHALL BE ENTITLED TO RECOVER FROM THE OTHER PARTY ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES IN CONNECTION WITH THIS AGREEMENT.

[SIGNATURE PAGE TO FOLLOW]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

FATE THERAPEUTICS, INC.

By: _____

Name: _____

Title: _____

JUNO THERAPEUTICS, INC.

By: _____

Name: _____

Title: _____

Exhibit 10.1

COLLABORATION AND LICENSE AGREEMENT

This COLLABORATION AND LICENSE AGREEMENT (the "Agreement"), effective as of May 4, 2015 (the "Effective Date"), is made by and between Fate Therapeutics, Inc., a Delaware corporation, having a principal place of business at 3535 General Atomics Court, Suite 200, San Diego, CA 92121 ("Fate"), and Juno Therapeutics, Inc., a Delaware corporation, having a place of business at 307 Westlake Ave N, 300, Seattle, WA 98109 ("Juno").

BACKGROUND

A. Juno has skills, expertise and proprietary technology regarding engineered T-cell immunotherapies using chimeric antigen receptor ("CAR") technology and T-cell receptor ("TCR") technology.

B. Fate has skills, expertise and proprietary technology regarding pharmacologically-modulated hematopoietic cell therapeutics, including hematopoietic stem cell and T-cell therapeutics, and its small molecule modulation platform.

C. Juno and Fate desire to enter a collaboration wherein Juno will select certain antigen targets and Fate will utilize its small molecule modulation platform, with the goal of developing engineered T-cells that would utilize or incorporate the results of such collaboration.

NOW, THEREFORE, for and in consideration of the covenants, conditions and undertakings hereinafter set forth, it is agreed by and between the Parties as follows:

ARTICLE 1
DEFINITIONS

As used herein, the following terms will have the meanings set forth below:

1.1 "Affiliate" shall mean any corporation or other entity, whether *de jure* or *de facto*, which is directly or indirectly controlling, controlled by or under common control of a Party hereto for so long as such control exists. For the purposes of this Section, "control" shall mean the direct or indirect ownership of at least fifty percent (50%) of the outstanding shares or other voting rights of the subject entity having the power to vote on or direct the affairs of the entity, or if not meeting the preceding, the maximum voting right that may be held by the particular Party under the laws of the country where such entity exists.

1.2 "Change of Control" shall mean, with respect to a Party, a transaction or series of transactions pursuant to which a Third Party (a) acquires (whether by merger, consolidation or transfer or issuance of capital stock or otherwise) beneficial ownership, directly or indirectly, of more than fifty percent (50%) of such Party's then outstanding voting securities, or (b) acquires all or substantially all of the assets of such Party; but excluding any such transaction or series of

transactions described in clause (a) or (b) in which, immediately after the consummation of such transaction or series of transactions, the holders of voting securities of such Party immediately prior to such transaction or series of transactions beneficially own, directly or indirectly, more than fifty percent (50%) of the outstanding voting securities of the successor entity (or the parent of such successor entity) in such transaction.

1.3 "Collaboration IP" shall mean, collectively, the Collaboration Patents and Collaboration Know-How.

1.4 "Collaboration Know-How" shall mean all ideas, inventions, data, instructions, processes, formulas, expert opinions and information, including biological, chemical, pharmacological, toxicological, pharmaceutical, physical and analytical, clinical, safety, manufacturing and quality control data and information developed solely or jointly by Fate and/or Juno in the course of performing the Research Program.

1.5 "Collaboration Patents" shall mean all U.S. and foreign (a) patent applications, including provisional applications, the subject of which is an invention conceived or reduced to practice solely or jointly by Fate and/or Juno in the course of performing the Research Program, (b) any divisionals, continuations, and continuations-in-part of any of the foregoing, (c) all patents that issue as a result of any of the foregoing, including inventor's certificates and equivalents, and (d) all reissues, reexaminations, extensions or other governmental actions which extend any of the subject matter of the patents in clause (c) above, and any substitutions, additions, renewals, term restorations, requests for continued examination, revisions, supplementary protection certificates, confirmations, registrations or revalidations of any of the foregoing.

1.6 "[***]Efforts" shall mean [***].

1.7 "Combination Product" means a product that contains one or more active components which are Modulated Products, and sold in combination with one or more separate products which are not Modulated Products.

1.8 "Confidential Information" shall have the meaning set forth in Section 9.1.

1.9 "Control," "Controls," "Controlled" or "Controlling" shall mean possession of the ability to grant the licenses and/or sublicenses as provided herein without violating the terms of any agreement or other arrangements with any Third Party.

1.10 "Derivative" shall mean any of the following: (a) a modified form of a compound that is derived from such compound with modifications considered routine by an ordinary skilled chemist and generally conserves the basic scaffold of such compound's chemical structure; or (b) a salt, free-base, hydrate, solvate, polymorph, isomer, enantiomer, (human) metabolite or human prodrug (including ester prodrugs) of a compound.

1.11 "EMA" shall mean the European Medicines Agency of the European Union, or the successor thereto.

1.12 "Engineered T-Cell" shall mean a T-cell, normally having the ability to recognize specific peptide antigens presented by the major histocompatibility complex through receptors on

their cell surface, that has been genetically engineered to express either a CAR or a TCR with the express intent of targeting a tumor associated antigen or protein; provided, however, that notwithstanding the foregoing, the definition of "Engineered T-Cell" specifically excludes the following cell types: [***]. For the avoidance of doubt, a pharmaceutical product incorporating a T-cell will not be excluded by virtue of the exclusions in [***].

1.13 "Excluded Modulator" shall mean a Modulator that (i) [***], and (ii) [***]. Notwithstanding the foregoing, a Modulator which is an Excluded Modulator pursuant to this Section 1.13, will be a "Partially Excluded Modulator" (and will be considered a Partially Excluded Modulator, and not an Excluded Modulator, only for purposes of determining which of Section 5.9.1 or 5.9.2 or Section 5.9.3 or 5.9.4 applies) if [***]. For the avoidance of doubt, under this Section 1.13, a Fate Modulator shall not be considered an Excluded Modulator or Partially Excluded Modulator if the applicable [***].

1.14 "Fate Collaboration IP" shall mean the Collaboration IP that is solely owned by Fate in accordance with Section 8.1. The "Fate Collaboration Patents" shall mean the Collaboration Patents that are solely owned by Fate in accordance with Section 8.1.

1.15 "Fate IP" shall mean, collectively, the Fate Patents and Fate Know-How.

1.16 "Fate Know-How" shall mean all ideas, inventions, data, instructions, processes, formulas, expert opinions and information, including biological, chemical, pharmacological, toxicological, pharmaceutical, physical and analytical, clinical, safety, manufacturing and quality control data and information, which are (a) Controlled by Fate or its Affiliates at any time during the term of this Agreement (except as expressly excluded pursuant to Section 5.8) and (b) necessary or useful either (i) for Juno to perform its activities under the Research Program or (ii) to make, have made, use, offer for sale, sell, import, export and otherwise exploit Modulated Products incorporating as an active ingredient an Engineered T-Cell directed against Selected Target(s) in the Territory for use in the Field; provided, however, that the foregoing definition excludes all intellectual property rights Controlled by any Affiliate that becomes an Affiliate of Fate in connection with or following a Change of Control of Fate, unless and until such Affiliate performs any activities under the Research Program or receives an assignment of any of the foregoing intellectual property rights within this definition from Fate or any Affiliate of Fate that is not excluded by virtue of this proviso.

1.17 "Fate Modulators" shall mean (a) Modulators identified by Fate, disclosed to Juno by Fate, and assessed by Fate or Juno with respect to their potential to enhance the therapeutic properties of Engineered T-Cells in connection with the Research Program; (b) Derivatives of Modulators described in Section 1.17(a); and (c) substitutes of Modulators described in Section 1.17(a), where a compound is considered a substitute of a Modulator if: [***].

1.18 "Fate Patents" shall mean all U.S. and foreign patents and patent applications, including any divisionals, continuations, continuations-in-part, inventor's certificates and equivalents, reissues, reexaminations, extensions or other governmental actions which extend any of the subject matter of any such patents, substitutions, additions, renewals, term restorations, requests for continued examination, revisions, supplementary protection certificates, confirmations, registrations or revalidations of any such patents or patent applications, which are (a) Controlled by

Fate or its Affiliates at any time during the term of this Agreement (except as expressly excluded pursuant to Section 5.8) and (b) necessary or useful either (i) for Juno to perform its activities under the Research Program or (ii) to make, have made, use, offer for sale, sell, import, export and otherwise exploit Modulated Products incorporating as an active ingredient an Engineered T-Cell directed against Selected Target(s) in the Territory for use in the Field; provided, however, that the foregoing definition excludes all intellectual property rights Controlled by any Affiliate that becomes an Affiliate of Fate in connection with or following a Change of Control of Fate, unless and until such Affiliate performs any activities under the Research Program or receives an assignment of any of the foregoing intellectual property rights within this definition from Fate or any Affiliate of Fate that is not excluded by virtue of this proviso.

1.19 "FDA" shall mean the Food and Drug Administration of the United States, or the successor thereto.

1.20 "Field" shall mean the diagnosis, treatment or prevention of any human disease or condition.

1.21 "FTE" shall mean a full-time, equivalent person year, based upon a total of[***] hours per year of work in connection with the Research Program.

1.22 "IND" shall mean an investigational new drug application filed with the FDA as more fully defined in 21 C.F.R. § 312.3.

1.23 "Joint Collaboration IP" shall mean the Collaboration IP that is jointly owned by Fate and Juno in accordance with Section 8.1. The "Joint Collaboration Patents" shall mean the Collaboration Patents that are jointly owned by Fate and Juno in accordance with Section 8.1.

1.24 "JRC" or "Joint Research Committee" shall have the meaning set forth in Section 3.1.

1.25 "Juno Collaboration IP" shall mean the Collaboration IP that is solely owned by Juno in accordance with Section 8.1. The "Juno Collaboration Patents" shall mean the Collaboration Patents that are solely owned by Juno in accordance with Section 8.1.

1.26 "License" shall mean the license grant set forth in Section 4.1.

1.27 "Modulated Product" shall mean (a) a Product that uses or incorporates a Fate Modulator, or (b) a pharmaceutical product, other than a Product, that uses or incorporates a Fate Modulator and [***].

1.28 "Modulator" shall mean any pharmacologic small molecule that can enhance the therapeutic properties of Engineered T-Cells.

1.29 "Net Sales" shall mean, with respect to any Modulated Product, the gross sales price of such Modulated Product invoiced by Juno, its Affiliates and/or sublicensees to Third Parties who are not Affiliates or sublicensees (or are Affiliates or sublicensees but are the end users of such Modulated Product) less, to the extent actually paid by Juno or its Affiliates or sublicensees (as applicable), (a) credits or allowances granted for billing errors, damaged, outdated, returned, rejected or recalled Modulated Products, (b) trade, quantity discounts, early payment, and/or early payment

cash discounts, rebates and other price reductions for such Modulated Product given to such Third Parties under price reduction programs, (c) rebates to, and chargebacks from the account of, such customers for nonconforming, damaged, out-dated and returned Modulated Product, (d) transportation and insurance, (e) sales, use, value-added and other direct taxes incurred on the sale of such Modulated Product to such customers, and (f) customs duties, tariffs, surcharges and other governmental charges incurred in exporting or importing such Modulated Product to such customers; or to the extent actually accrued by Juno or its Affiliates or sublicensees (as applicable), an allowance for uncollectible or bad debts determined in accordance with U.S. GAAP.

For the avoidance of doubt, disposal of any Modulated Product, or use of any Modulated Product,(i) for or in any clinical trial or other research and development activities without charge, or (ii) provided without charge as samples or for compassionate use, if any, shall not result in any Net Sales.

For clarity, if Juno sells Modulated Product to an Affiliates or sublicensees for resale, Net Sales shall be determined based on the amount received by such Affiliates or sublicensees from Third Parties on the resale of such Modulated Product rather than the amount received by Juno on the sale of Modulated Product to its Affiliates or sublicensees for resale.

With respect to Modulated Products, if any, that are sold at a discount in "bundles" with other products or services (i.e., sold together in a single sales transaction with other products or services for which separate prices are charged in such transaction), if the amount invoiced for the applicable Modulated Products represents [***] then Net Sales for such "bundled" Modulated Product shall be determined using [***].

If a Modulated Product is sold as a Combination Product, then for purposes of calculating Juno's payment obligations under Section 5.7, shall be determined as follows:

(A) In the event one or more Modulated Products are sold as part of a Combination Product in a particular country, and all products contained in the Combination Product are sold separately in such country, the Net Sales of such Modulated Product(s), for the purposes of determining payments based on Net Sales, shall be determined by [***]

(B) In the event one or more Modulated Products are sold as part of a Combination Product and are sold separately in such country, but the other product(s) included in the Combination Product are not sold separately in such country, the Net Sales of the Modulated Product, for the purposes of determining payments based on Net Sales, shall be determined by [***]

(C) In the event that the Net Sales of the Modulated Product(s) when included in a Combination Product cannot be determined using the methods above, Net Sales for the purposes of determining payments based on Net Sales shall be [***].

1.30 "Party" or "Parties" shall mean, respectively, Fate or Juno individually, or Fate and Juno collectively.

1.31 "Product" shall mean any pharmaceutical product incorporating as an active ingredient an Engineered T-Cell directed against Selected Target(s).

1.32 "Registration(s)" shall mean any and all permits, licenses, authorizations, registrations or regulatory approvals (including a New Drug Application (with respect to the FDA) or Marketing Authorization Application (with respect to the EMA)) required as a prerequisite to the development, manufacturing, packaging, marketing and selling of any product.

1.33 "Regulatory Authority" means any applicable government or quasi-government regulatory authority involved in granting approvals for investigational clinical trials, the manufacturing, marketing, selling, reimbursement and/or pricing of a Modulated Product in the Territory, including, in the U.S., the FDA and, in other countries, any governmental authority having substantially the same function.

1.34 "Research Plan" shall mean the written research plan governing the efforts of the Parties in conducting the Research Program. Attached hereto as Exhibit A is the preliminary outline of the Research Plan, with the full Research Plan to be agreed to by the Parties within thirty (30) days after the Effective Date. The Research Plan may be amended from time to time by mutual agreement of the Parties or as described in Section 2.3.

1.35 "Research Program" shall mean the research activities undertaken by the Parties pursuant to ARTICLE 2 below.

1.36 "Research Term" shall mean the term of the Research Program, as provided in Section 2.5 below.

1.37 "Results" shall mean the data and results generated in the course of the Research Program.

1.38 "Royalty Term" shall mean, with respect to each Modulated Product in each country, the term commencing on the first commercial sale of the Modulated Product in such country and continuing until the later of (a) expiration of the last Valid Claim in such country covering the manufacture, use, offer for sale, sale or import of such Modulated Product (or any Fate Modulator used or incorporated therein) in such country, (b) ten (10) years after such first commercial sale in such country, or (c) the expiration of all data and other regulatory exclusivity periods afforded by any Regulatory Authority with respect to such Modulated Product in such country.

1.39 "SEC" shall mean the U.S. Securities and Exchange Commission or any successor agency.

1.40 "Selected Target" shall mean a Target selected by Juno in accordance with Section 2.8.

1.41 "Stock Purchase Agreement" shall have the meaning set forth in Section 5.1.

1.42 "Tail Period" shall have the meaning set forth in Section 4.3(d).

1.43 "Target" shall mean (a) any of the tumor-associated antigens and proteins listed on Exhibit B, as such list may be amended in accordance with Section 2.7 (the "Target List"), and (b) any variant, isoform or polymorphism of any such antigen or protein on the Target List.

1.44 "Territory" shall mean worldwide.

1.45 "Third Party" shall mean any person or entity other than Fate and Juno, and their respective Affiliates.

1.46 "Valid Claim" shall mean a claim of an issued and unexpired patent, or a patent application being prosecuted in good faith that has been pending for no more than [***] years from the date of earliest priority, that is included within the Fate Patents or Collaboration Patents, as applicable, which has not been held permanently revoked, unenforceable or invalid by a decision of a court or other governmental agency of competent jurisdiction, unappealable or unappealed within the time allowed for appeal, and which has not been admitted to be invalid or unenforceable through reissue or disclaimer or otherwise, or been irretrievably cancelled, withdrawn, abandoned or rejected.

ARTICLE 2
RESEARCH PROGRAM

2.1 Goals. The goals of the Research Program are the discovery and identification of Fate Modulators, and the optimization and the use of Fate Modulators, to research and develop Modulated Products pursuant to the Research Plan. Without limiting the foregoing, under the Research Plan (a) Fate shall use its small molecule library to identify Modulators that promote the selected T-cell characteristics for modification, (b) Fate shall primarily be responsible for *in vitro* validation and *in vivo* confirmation of the selected T-cell characteristics for modification (e.g., T-cell survival, T-cell trafficking) using Fate Modulators on the transferred T-cell populations, and (c) Juno shall primarily be responsible for *in vivo* efficacy assessments using Engineered T-Cells, which have been pharmacologically-modulated with Fate Modulators, targeting a Target.

2.2 Conduct of the Research Program. Subject to the terms and conditions set forth herein, the Parties shall conduct research under the Research Program, which shall be funded as set forth in Section 5.3. During the Research Term, Fate and Juno shall collaborate and conduct the Research Program in accordance with the Research Plan, and the budget included therein, within the time schedules contemplated therein and keep the other Party informed as to the progress and Results of the Research Program hereunder. Fate and Juno shall each perform their respective obligations under the Research Plan. For clarification, Fate shall not be obligated to perform research under the Research Program that is not within the then-current budget included in the Research Plan, which budget shall not exceed amounts payable to Fate under Section 5.3, unless all costs of such research are to be paid for solely by Juno.

2.3 Research Plan. The Research Program shall be carried out in accordance with a mutually agreed upon written Research Plan, which shall establish specific research objectives and the research tasks to be performed and resources to be provided by each Party and the budget for such activities. The Parties shall work together in good faith to prepare the initial draft Research Plan, and a detailed Research Plan shall be agreed to by the Parties within thirty (30) days after the Effective Date and attached hereto as Exhibit A. The Research Plan will establish the scope of the research activities which will be performed and the research objectives and work plan activities with

respect to the Research Program and the budget for such activities. The Research Plan shall be reviewed on an ongoing basis and may be amended by the Joint Research Committee in accordance with ARTICLE 3. Notwithstanding the governance provisions of Section 3.5, if a Fate Modulator to be used under the Research Program is an Excluded Modulator, then Juno shall only include the use of such Excluded Modulator, and Fate shall only be required to conduct activities on such Excluded Modulator, under the Research Program if both Parties agree to specific research and development tasks and objectives that are designed, with a good faith intent, to result in a Modulated Product that would qualify for payments under Sections 5.5, 5.6 and 5.7 (and not excluded from payments under Section 5.9); provided that [***].

2.4 Research Program Staffing. During the Research Program, Fate and Juno shall each devote that number of FTEs and other resources to conduct the Research Program as specified in the Research Plan.

2.5 Term of Research Program. The term of the Research Program shall commence on the Effective Date and shall end upon the date four (4) years after the Effective Date (the "Initial Research Term"), provided that if Juno exercises the Extension Option as set forth below, then the term of the Research Program shall be extended for an additional two (2) years (the "Extended Research Term") (the Initial Research Term together with the Extended Research Term, if applicable, the "Research Term"). If, during the Initial Research Term, Juno has selected at least [***] Selected Targets, then upon providing written notice to Fate at least [***] prior, but no more than [***] prior, to the expiration of the Initial Research Term and making the payments both as described in Section 5.2, the term of the Research Program shall be extended by the Extended Research Term (the "Extension Option").

2.6 Records; Inspection.

(a) Records. Fate and Juno shall maintain records of the Research Program (or cause such records to be maintained) in sufficient detail and in good scientific manner as will properly reflect all work done and Results achieved in the performance of the Research Program (including all data in the form required under any applicable governmental regulations and as directed by the JRC). Fate shall maintain such records during the Research Term and for a period of [***] years thereafter, and shall provide Juno access to such records at Fate's place of business upon reasonable advance notice of Juno.

(b) Reports and Information Exchange. During the Research Term, each of Juno and Fate shall use [***] Efforts to disclose to the other Party all material information relating to the Research Program promptly after it is learned or its materiality is appreciated. Each Party shall also keep the other Party, including the Joint Research Committee, informed as to its progress under the Research Plan. Within [***] days following the end of each [***] of the Research Program, each of Fate and Juno shall provide the other Party with a reasonably detailed written report describing [***]. Fate shall use its [***] Efforts to identify and disclose to Juno the most suitable Modulators in connection with the Research Program.

2.7 Target List. During the Research Term, Juno shall have the right to update the Target List, on a [***] basis (or more frequently as provided below following receipt of a Target Notification), by providing an updated Target List to the JRC, provided that the Target List may not

exceed [***]tumor-associated antigens or proteins at any one time. During the Research Term, if Fate desires, either directly or with an Affiliate or Third Party collaborator to research, develop, use or commercialize any Modulators for the purposes of modulating the therapeutic properties of Engineered T-Cells targeting a tumor-associated antigen or protein which is not on the Target List, then Fate shall first notify and disclose to Juno in writing the tumor-associated antigen or protein (the "Target Notification"). Juno shall have a period of [***] days from receipt of the Target Notification to elect to add such tumor-associated antigen or protein to the Target List (and, correspondingly, remove tumor-associated antigens or proteins from the Target List, if necessary, so that the Target List shall not exceed [***] Targets at any one time) by providing an updated Target List to the JRC. If Juno does not add such tumor-associated antigen or protein to the Target List during such [***] day period, or if Juno removes a tumor-associated antigen or protein from the Target List when providing an updated Target List (including, for the avoidance of doubt, in connection with any update of the Target List by Juno as described above) (in each case, such antigen or protein, together with any variant, isoform or polymorphism of any such antigen or protein (except for any variant, isoform or polymorphism that may be separately included on the Target List), a "Declined Target"), Fate shall not have any obligations or restrictions, and Juno shall not have any rights, under this Agreement thereafter with respect to any Declined Target. A Declined Target [***]. At the end of the Research Term, all Targets on the Target List that have not been selected as Selected Targets in accordance with Section 2.8 shall automatically be deemed Declined Targets.

2.8 Selected Targets. During the Research Term, subject to the terms of this Section 2.8, Juno shall have the right to select Targets to be Selected Targets by providing written notice to Fate and payment of the payment set forth in Section 5.4. Upon such written notice and payment for a given Target, such Target shall be a "Selected Target." There shall not be any limit on the number of Selected Targets (other than the requirement that such Target was on the Target List); provided, however, that Juno shall only have the right to select a Target as a Selected Target if [***]. For clarification (i) if Juno [***] then each such antigen or protein shall be selected by Juno as a Selected Target in accordance with this Section 2.8 in connection with [***], and (ii) [***]. For the avoidance of doubt, Juno may modify an existing Modulated Product incorporating as an active ingredient an Engineered T-Cell directed against such Selected Target(s) by [***].

2.9 Technology Transfer. During the Research Term and, provided that Juno has selected at least one (1) Selected Target prior to the end of the Research Term in accordance with Section 2.8, for [***] months following the Research Term, upon the request of Juno, Fate shall provide reasonable assistance to enable the effective transfer to Juno or its Affiliates or its designees, without charge, such reasonable quantities of Fate Modulators (and associated Fate IP and Collaboration IP) as are in Fate's possession and are reasonably necessary to enable Juno or its designee (including a manufacturer) to continue to perform activities to be performed by Juno under this Agreement, and for the manufacture of the Fate Modulators to be used in a Modulated Product incorporating as an active ingredient an Engineered T-Cell directed against Selected Target(s). Thereafter Fate will reasonably cooperate as Juno may from time to time request to identify other parties from which to source Fate Modulators, at Juno's expense.

2.10 Transfer of Materials. In connection with the Research Program, each Party may transfer to the other Party certain materials, including Fate Modulators transferred to Juno by Fate and T-cell populations transferred to Fate by Juno (collectively, the "Materials"). Fate shall use the

Materials provided by Juno, and Juno shall use the Materials provided by Fate, and any information and other materials directly or indirectly related or derived therefrom, solely to conduct the Research Program or, as applicable in the case of Juno, to exercise its license rights granted hereunder, and for no other purpose. Fate shall not use the Materials provided by Juno, and Juno shall not use Materials provided by Fate, or any information or other materials directly or indirectly related or derived therefrom, for any other purpose. Fate shall not transfer the Materials provided by Juno, and Juno shall not transfer the Materials provided by Fate, or any information or other materials directly or indirectly related or derived therefrom, to any Third Party without the prior express written consent of the Party providing such Materials, except that Juno shall have the right to transfer the information and materials to its manufacturers, collaborators or licensees, in each case pursuant to exercising the license rights granted hereunder (subject to Section 4.2 or 10.4(a)). Fate shall notify Juno, and Juno shall notify Fate, promptly upon discovery of any unauthorized use or disclosure of the Materials provided by such other Party. Upon the request of Juno, Fate promptly shall return all remaining Materials provided to Fate by Juno to Juno, or at the instruction of Juno destroy the Materials and provide to written evidence of such destruction. Except as expressly set forth herein, ALL MATERIALS ARE PROVIDED "AS IS" AND WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY WARRANTY THAT THE USE OF THE MATERIALS WILL NOT INFRINGE OR VIOLATE ANY PATENT OR OTHER PROPRIETARY RIGHTS OF ANY THIRD PARTY.

ARTICLE 3
MANAGEMENT

3.1 Joint Research Committee. Promptly after the Effective Date, Juno and Fate will establish a committee (the "Joint Research Committee" or "JRC") to oversee, review and recommend direction of the Research Program during the Research Term. The responsibilities of the Joint Research Committee shall include, among other things monitoring and reporting research progress and ensuring open and frequent exchange between the Parties regarding Research Program activities.

3.2 Membership. The JRC shall include two (2) representatives of each of Juno and Fate, each Party's members selected by that Party. Fate and Juno may each replace its JRC representatives at any time, upon written notice to the other Party. From time to time, the JRC may establish subcommittees, to oversee particular projects or activities, and such subcommittees will be constituted as the JRC agrees.

3.3 Meetings. During the Research Term, the JRC shall meet at least twice a year, or as agreed by the Parties, at such locations as the Parties agree, to share progress reports and will otherwise communicate regularly by telephone, electronic mail, facsimile and/or video conference. During the Research Term, the JRC shall meet twice a year, or as agreed by the Parties, at such locations as the Parties agree, to set research priorities and costs for the Research Program. With the consent of the Parties, other representatives of Fate or Juno may attend JRC meetings as nonvoting observers. Each Party shall be responsible for all of its own expenses associated with attendance of

such meetings. The first meeting of the JRC shall occur within thirty (30) days after the Effective Date.

3.4 Minutes. The JRC shall keep accurate minutes of its deliberations which shall record all proposed decisions and all actions recommended or taken. The Secretary of the JRC (as appointed by the members of the JRC) shall be responsible for the preparation of draft minutes. Draft minutes shall be sent to all members of the JRC within [***] working days after each meeting and shall be approved, if appropriate, at the next meeting. All records of the JRC shall at all times be available to both Fate and Juno.

3.5 Decision Making. Decisions of the JRC shall be made by unanimous vote, with each Party having one (1) vote. In the event that there is not a unanimous vote to approve a decision, then Juno shall have the deciding vote; provided, however, that Juno, with such deciding vote, shall not (a) require Fate to incur any additional costs and/or expenses under the collaboration in excess of the amounts paid by Juno to Fate pursuant to Section 5.3 (unless such additional costs / expenses are to be paid for solely by Juno) or (b) make any decision that would amend the scope of the Research Program or the terms of this Agreement.

ARTICLE 4
LICENSES

4.1 License. Subject to the terms and conditions of this Agreement, in connection with selection by Juno of a Selected Target(s) in accordance with Section 2.8, Fate shall grant, and hereby does grant to Juno, effective upon such selection, an exclusive (even as to Fate, other than for activities to be conducted by Fate under this Agreement), royalty-bearing, non-transferable (except as set forth in Section 13.4) license, with the right to grant and authorize sublicenses through multiple tiers in accordance with Section 4.2, under the Fate IP, Fate Collaboration IP and Fate's interest in the Joint Collaboration IP applicable to Modulated Products incorporating as an active ingredient an Engineered T-Cell directed against Selected Target(s), solely to make, have made, use, offer for sale, sell, import, export and otherwise exploit Modulated Products incorporating as an active ingredient an Engineered T-Cell directed against Selected Target(s) in the Territory for use in the Field.

4.2 Sublicense Terms. Any sublicense by Juno of rights granted under the License shall be in writing and subject and subordinate to, and consistent with, the terms and conditions of this Agreement. Juno shall provide Fate a copy of any sublicense agreement entered into with any Third Party sublicensee, and any amendment thereto, within [***] days of its execution; provided that Juno may redact any confidential information contained therein that is not necessary to disclose to ensure compliance with this Agreement. Juno shall be liable for the failure of its sublicensees to comply with the relevant obligations under this Agreement and shall, at its own cost, enforce compliance by its sublicensees with the terms of the sublicense agreement.

4.3 Exclusivity.

(a) Research Term. During the Research Term: (i) except with respect to activities in connection with this Agreement or Fate's exercise of its rights under this Agreement,

Fate shall not conduct or participate in, and shall not license, fund or otherwise enable any Third Party to, engage in any research, development or commercialization activities involving the use of any Modulators with respect to any Engineered T-Cell directed against one or more Targets, and (ii) except with respect to activities in connection with this Agreement or Juno's exercise of its rights under this Agreement, Juno shall not conduct or participate in, and shall not license, fund or otherwise enable any Third Party to, engage in any research, development or commercialization activities involving the use of any Fate Modulators for any purpose.

(b) Term of Agreement. At any time during the term of this Agreement following Juno's election to exercise the Extension Option (but not if Juno does not exercise the Extension Option), except with respect to activities in connection with this Agreement or Fate's exercise of its rights under this Agreement (including as permitted under Section 4.3(f)), Fate shall not conduct or participate in, and shall not license, fund or otherwise enable any Third Party to, engage in any research, development or commercialization activities involving the use of any Modulators with respect to an Engineered T-Cell directed against one or more Selected Targets.

(c) Conversion. On a Selected Target -by-Selected Target basis, if Juno fails to exercise its diligence obligations with respect to a Selected Target as set forth in ARTICLE 7, then (i) the License grant under Section 4.1 with respect to Modulated Products directed against such Selected Target shall convert from exclusive to non-exclusive, and (ii) Fate's restrictions under Section 4.3(b) with respect to such Selected Target shall terminate.

(d) Jointly Owned Collaboration IP. During the Research Term and the Tail Period (as defined below), Fate shall not grant a license under, or enable any Third Party with respect to, Fate's interest in any Joint Collaboration IP for any Engineered T-Cell directed against a Target. The "Tail Period" shall mean (i) [***] after expiration of the Research Term if Juno has exercised the Extension Option, or (ii) [***] after expiration of the Research Term if Juno has not exercised the Extension Option; provided, however, if Juno terminates the Agreement during the Research Term pursuant to Section 12.3, then the Tail Period shall mean the period expiring on the effective date of termination of the Research Term under Section 12.3.

(e) Option. Subject to Juno's exercise of the Extension Option and provided that Juno does not terminate this Agreement during the Research Term pursuant to Section 12.3, Fate hereby grants to Juno during the [***] period after the expiration of the Research Term (the "Option Period"), solely with respect to those Targets on the Target List as of the expiration of the Research Term, an option (the "Option") with respect to any [***] to include such [***] as a Selected Target under the licenses granted under Section 4.1. If Juno desires to exercise the Option with respect to a particular Target during the Option Period, Juno shall provide written notice to Fate identifying the applicable Target (the "Option Notice"). Within [***] days after receipt of the Option Notice, Fate shall notify Juno in writing whether the Target is an [***]. If such applicable Target is [***], Juno shall have the right to exercise the Option during the Option Period by providing written notice to Fate of exercise of the Option and paying the selection fee under Section 5.4 as if such Target was the next Selected Target. Effective upon receipt of such notice and payment, the Option for the applicable Target shall be exercised and the Target shall be deemed a "Selected Target" for all purposes under this Agreement (including the rights granted under Section 4.1 and payment obligations for applicable Modulated Products under ARTICLE 5). As used herein [***].

(f) Acknowledgement. It is acknowledged that conducting or participating in, or licensing, funding or otherwise enabling any Third Party to, engage in any research, development or commercialization activities directed against one or more antigens or proteins that are not Targets, including where there may be incidental activity against a Target but it is not the intended purpose of such activities to target such Target, shall not be a violation of this provision.

4.4 Limitations and Other Restrictions. During the Research Term [***]. Following the expiration of the Research Term, [***].

4.5 Use of Joint Collaboration IP. During the term and thereafter, subject to the License and the provisions of Section 4.3 and ARTICLE 9, each party shall have the right to use, or license to any Third Party, any of its joint ownership interest in the Joint Collaboration IP for any purpose. Except as expressly provided in this Agreement, neither Party shall have any obligation to account to the other for profits, or to obtain any approval of the other Party to license or exploit jointly-owned inventions and other intellectual property, by reason of joint ownership thereof, and each Party hereby waives any right it may have under the laws of any jurisdiction to require any such consent or accounting.

4.6 Use of Results. During the term and thereafter, subject to the License and the provisions of Section 4.3, Section 8.1(b) and ARTICLE 9, each party shall have the right to use and disclose the Results for any purpose.

4.7 No Implied Licenses; Retained Rights. No right or license under any intellectual property rights of either Party is granted or shall be granted by implication. All such rights or licenses are or shall be granted only as expressly provided in the terms of this Agreement. Fate hereby expressly reserves all rights under the Fate IP, Fate Collaboration IP and Fate's interest in the Joint Collaboration IP not expressly licensed to Juno under the License.

4.8 Development Reports. Following the Research Term, Juno shall deliver to Fate written annual updates with respect to the status of the development of Modulated Products, which shall include initiation of any clinical trials, the status of progress toward achievement of milestone events and termination of development of any Modulated Product.

ARTICLE 5
PAYMENTS

5.1 Initial Fee. In partial consideration of Fate's grant of the rights and licenses to Juno hereunder, Juno shall (a) pay to Fate a one-time, non-refundable, non-creditable fee of five million dollars ($5,000,000) within [***] following the Effective Date, and (b) purchase eight million dollars ($8,000,000) worth of shares of Fate's common stock at a price of eight dollars ($8.00) per share pursuant to the stock purchase agreement attached hereto as Exhibit C (the "Stock Purchase Agreement").

5.2 Extension Option Fee. If Juno exercises the Extension Option in accordance with Section 2.5, then (a) Juno shall pay to Fate a one-time, non-refundable, non-creditable fee of three million dollars ($3,000,000) within ten (10) days following Juno's written notice of exercise of the

Extension Option, and (b) upon Fate's written election provided within [***] following Juno's exercise of the Extension Option, Juno shall purchase the Extension Closing Shares (as defined in the Stock Purchase Agreement), subject to the terms and conditions of the Stock Purchase Agreement.

5.3 Research Program Funding. As consideration for Fate's performance of its activities under the Research Program, Juno will pay to Fate amounts as determined by the JRC and set forth in the budget included in the Research Plan; provided, however, that the minimum amount to be paid to Fate shall be equal to two million dollars ($2,000,000) per year during the Initial Research Term; provided, however, if Juno exercises the Extension Option in accordance with Section 2.5, such minimum amount to be paid by Juno to Fate shall be equal to four million dollars ($4,000,000) per year during the Extended Research Term. Amounts payable to Fate under this Section 5.3 shall be paid [***], based on the applicable amount of funding set forth in the then-current budget as determined by the JRC but not less than the minimum amount set forth above.

5.4 Selection Fee. Within [***] days after each Selected Target is first selected by Juno pursuant to Section 2.8, Juno shall pay to Fate a one-time, non-refundable, non-creditable selection fee for such Selected Target, as follows: (a) for each of the first [***] Selected Targets: [***] per Selected Target, (b) for each of the [***] through [***] Selected Targets: [***] per Selected Target, and (c) for each subsequent Selected Target commencing with the [***] Selected Target: [***] per Selected Target. In addition to the foregoing, Juno shall pay to Fate within [***] days after each of the following events: (a) a one-time, non-refundable, non-creditable bonus of [***] upon the selection of the first [***] Selected Targets, and (b) a one-time, non-refundable, non-creditable bonus of [***] upon the selection of the first [***] Selected Targets.

5.5 Milestones. Juno shall pay Fate the following payments on the first achievement by Juno or any of its Affiliates or sublicensees of the following milestone events, with such payments due within [***] days after the applicable event occurs. Each milestone payment shall be non-refundable and non-creditable (other than as set forth in Section 5.5.3 below), and due one-time only for each Modulated Product. For purposes of this Section 5.5 and Section 5.6 below, the following shall apply to determine whether a Modulated Product is separate and distinct from another Modulated Product so that milestone payments shall be due for each such Modulated Product.

5.5.1 For a pharmaceutical product that is an Engineered T-Cell, a Modulated Product shall be considered separate and distinct from an existing Modulated Product if [***]. For the avoidance of doubt, a Modulated Product shall not be considered separate and distinct from an existing Modulated Product [***].

5.5.2 For a pharmaceutical product that is not an Engineered T Cell, a Modulated Product shall be considered a separate and distinct Modulated Product if such Modulated Product has [***].

5.5.3 Notwithstanding the foregoing, each Modulated Product that enters clinical investigation in a clinical trial which is intended to support Registration, shall be considered a separate and distinct Modulated Product and any and all Milestone Payments related to such Modulated Product, including those previously unpaid, shall be payable

hereunder; provided however that, if all development of a Modulated Product is ceased ("Discontinued Product"), [***].

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

* An indication will be considered different than another indication if separate IND filings are required for each such indication.

The milestone payments based upon Net Sales shall be additive so that if more than one such milestone events are achieved in the same year, then all milestone payments corresponding with such milestone events shall be paid.

5.6 Bonus Milestones. In addition to those payments due under Section 5.5, Juno shall pay Fate the following payments on the first achievement by Juno or its Affiliate or sublicensee of the following milestone events, with such payments due within [***] days after the applicable event occurs. Each milestone payment shall non-refundable and non-creditable, and be due one-time only.

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

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

The milestone payments based upon Net Sales shall be additive so that if more than one such milestone events are achieved in the same year, then all milestone payments corresponding with such milestone events shall be paid.

5.7 Royalties.

(a) During the Royalty Term for a Modulated Product, Juno shall pay Fate, [***] a royalty equal to [***] of Net Sales of Modulated Product. If, with respect to Net Sales of all Modulated Products during a calendar year, and evaluated each calendar year, aggregate Net Sales during such calendar year exceeded [***] then the foregoing royalty rate shall be [***] for such calendar year to [***] unless [***] gross profit margin for Modulated Products (determined in accordance with U.S. GAAP) for such calendar year is [***].

(b) Only one royalty shall be paid to Fate with respect to each Modulated Product subject to royalties under this Section, without regard to whether more than one Valid Claim is applicable to such Modulated Product.

(c) If, with respect to Net Sales of a Modulated Product during a calendar year, [***] and if it becomes necessary for Juno, its Affiliates or sublicensees to obtain a license under a patent of a Third Party in order to practice the License to manufacture, use or sell such Modulated Product in a given country, then Juno shall have the right to credit [***] of such Third Party royalty payments against the royalties owing to Fate under Section 5.7(a) with respect to sales of such Modulated Product in such country; provided, however, that Juno shall not reduce the amount of the

royalties paid to Fate under Section 5.7(a) with respect to such Modulated Product in such country by reason of this Section to an effective royalty rate of less than [***].

5.8 Upstream Agreements. Juno acknowledges that certain Fate IP included in the License may include intellectual property that is licensed to Fate pursuant to an agreement with a Third Party ("Fate Upstream Agreement"). As of the Effective Date, there are no Fate Upstream Agreements. Fate Upstream Agreements may be added to Exhibit E as described below. Juno agrees to be bound by any restrictions or limitations set forth in the Fate Upstream Agreements that applies to Juno's use of the applicable Fate IP, including any limitations on the scope and exclusivity of the licenses granted to Fate thereunder and any constraints on Fate's ability to prosecute or enforce intellectual property licensed pursuant to such Fate Upstream Agreement, and that any sublicense granted under Fate Upstream Agreements is granted subject to the terms and conditions of such Fate Upstream Agreements. Fate shall remain responsible for all payments that may be due under each Fate Upstream Agreement; provided, however, that Juno shall reimburse Fate, within [***] days after the date of an invoice from Fate, for [***] under any Fate Upstream Agreement entered into and added to Exhibit E after the Effective Date in connection with the activities of Juno and its Affiliates and sublicensees. Notwithstanding the foregoing, an agreement will only be added to Exhibit E after the Effective Date if Fate provides Juno a copy of such license agreement, and Juno elects to amend Exhibit E to include such license agreement as a Fate Upstream Agreement; provided, however, that Fate shall provide Juno a copy of any license agreement entered into after the Effective Date that is necessary or useful either (i) for Juno to perform its activities under the Research Program or (ii) to make, have made, use, offer for sale, sell, import, export and otherwise exploit Modulated Products incorporating as an active ingredient an Engineered T-Cell directed against Selected Target(s). If the Parties do not amend Exhibit E to include such license agreement within [***] days after Fate first provides such license agreement to Juno, then such license agreement shall not be a Fate Upstream Agreement and the intellectual property rights licensed to Fate under such license agreement shall automatically be excluded from the definitions of Fate Know-How and Fate Patents. Any copy of a Fate Upstream Agreement provided to Juno may be redacted to remove any confidential, proprietary or competitive information of Fate except to the extent such information is required for Juno to understand the scope of the Fate IP and any restrictions or limitations included therein.

5.9 Excluded Modulators; Partially Excluded Modulators.

5.9.1 If, at the time a milestone payment (other than the sales milestones indicated by a #) is incurred under Sections 5.5 or 5.6 with respect to a Modulated Product, the only Fate Modulator(s) used or incorporated in such Modulated Product are solely Excluded Modulator(s), then such Modulated Product shall not be considered a Modulated Product for purposes of such milestone payment under Sections 5.5 and 5.6.

5.9.2 If, at the time a milestone payment (other than the sales milestones indicated by a #) is incurred under Sections 5.5 or 5.6 with respect to a Modulated Product, the only Fate Modulator(s) used or incorporated in such Modulated Product are either (i) solely Partially Excluded Modulator(s) or (ii) solely Partially Excluded Modulator(s) and Excluded Modulator(s), then such Modulated Product shall be considered a Modulated Product for purposes of such milestone payment under Sections 5.5 and 5.6; provided that in each case the applicable payment owed on such Modulated Product is [***] of the amount that would otherwise be payable.

5.9.3 If, at the time of First Commercial Sale of a Modulated Product, the only Fate Modulator(s) used or incorporated in such Modulated Product are solely Excluded Modulator(s), then such Modulated Product shall not be considered a Modulated Product for purposes of the sales milestone payments (i.e. those sales milestones indicated by a #) incurred under Sections 5.5 and 5.6 or for the royalties incurred under Section 5.7. Notwithstanding the foregoing, if [***], then this Section 5.9.3 shall cease to apply with respect to the applicable Modulated Product.

5.9.4 If, [***], the only Fate Modulator(s) used or incorporated in such Modulated Product are either (i) solely Partially Excluded Modulator(s) or (ii) solely Partially Excluded Modulator(s) and Excluded Modulators(s), then such Modulated Product shall be considered a Modulated Product for purposes of the sales milestone payments (i.e. those sales milestones indicated by a #) incurred under Sections 5.5 and 5.6 or for the royalties incurred under Section 5.7, provided that in each case the applicable payment owed on such Modulated Product is [***] of the amount that would otherwise be payable. Notwithstanding the foregoing, [***], then this Section 5.9.4 shall cease to apply with respect to the applicable Modulated Product.

ARTICLE 6
PAYMENTS; RECORDS

6.1 Payment Method. All payments due under this Agreement shall be made from a bank located in the United States by bank wire transfer in immediately available funds to a bank account designated by Fate. All payments hereunder shall be made in U.S. dollars. In the event that the due date of any payment subject to ARTICLE 5 is a Saturday, Sunday or national holiday, such payment may be paid on the following business day. Any payments that are not paid on the date such payments are due under this Agreement shall bear interest to the extent permitted by applicable law at the [***] calculated on the number of days such payment is delinquent.

6.2 Taxes. If laws or regulations require that taxes be withheld from any amounts payable hereunder, Juno will: (a) deduct those taxes from the otherwise remittable payment; (b) timely pay the taxes to the proper taxing authority; and (c) notify Fate and promptly furnish Fate with copies of any documentation evidencing such withholding.

6.3 Royalty Payments and Reports. Royalty payments under this Agreement with respect to Net Sales of Modulated Product in a given [***] shall be made to Fate or its designee [***] within [***] days following the [***]. Each royalty payment shall be accompanied by a report detailing, [***].

6.4 Books and Records; Accounting and Audits. Juno shall maintain, and cause its Affiliates and sublicensees to maintain, complete and accurate books and records, in accordance with U.S. GAAP, which are relevant to and sufficient in detail to verify, as applicable, the calculation of Net Sales and royalty and other payments owing hereunder. Fate shall maintain complete and accurate books and records, in accordance with U.S. GAAP, which are relevant to, as applicable, all costs or expenses of Fate incurred in performance of the Research Program, which books and records shall

be sufficient in detail to verify such costs and expenses. A Party (the "Auditing Party") shall have the right, at its own expense and not more than once in any calendar year during the term of this Agreement, to have an independent, certified public accountant, selected by the Auditing Party, and under an obligation of confidence, audit such books and records as described above of the other Party (the "Audited Party") in the location(s) where such books and records are maintained upon reasonable notice (which shall be no less than [***] business days prior written notice) and during regular business hours, and for the sole purpose of verifying the basis and accuracy of the payments required and made under this Agreement (if Juno is the Audited Party) or the costs and expenses incurred in performance of the Research Program (if Fate is the Audited Party), as applicable. The report and communication of such accountant with respect to such an audit shall be limited to a certificate stating whether any, as applicable, report made or payment submitted during such period is accurate or inaccurate and, if a discrepancy is identified, shall also indicate the amount and if applicable, with respect to any report, the nature, of any discrepancy, and the correct information (with respect to the applicable period). Such accountant shall provide Fate and Juno with a copy of each such report simultaneously. Should the audit lead to the discovery of a discrepancy in any payment due by the Audited Party to the Auditing Party as provided in this Agreement: (i) to the Auditing Party's detriment, the Audited Party shall pay to the Auditing Party the amount of the discrepancy within [***] days of the Audited Party's receipt of the report; or (ii) to the Audited Party's detriment, the Audited Party may, as applicable, credit the amount of the discrepancy against future payments payable to the Auditing Party under this Agreement, and if there are no such payments payable, then the Auditing Party shall pay to the Audited Party the amount of the discrepancy within [***] days of the Auditing Party's receipt of the report. The cost charged by such accountant for such audit shall be borne by the Auditing Party, except that, in the event that the discrepancy is to the Auditing Party's detriment and is greater than [***] of the amount due for such audited period, then the Audited Party shall pay or reimburse the reasonable cost charged by such accountant for such audit. Once the Auditing Party has conducted an audit permitted by this Section 6.4 in respect of any period, it may not re-inspect the Audited Party's books and records in respect of such period, unless a subsequent audit of a separate reporting period uncovers fraud on the part of the Audited Party that is reasonably expected to have been occurring during the prior audited period. For clarity, however, if a discrepancy is identified by the accountant during the course of an audit and the Parties do not agree upon a resolution of such discrepancy, then the Auditing Party's accountant may re-inspect the books and records to the extent reasonably relevant to resolving such discrepancy. Notwithstanding anything herein to the contrary, upon the expiration of [***] years following the end of any calendar year, the right to audit, the books and records for such calendar year shall expire and such Party shall be released from any liability or accountability with respect to payments or Research Program costs and expenses as reflected in such books of such Party for such calendar year (including, for clarity, with respect to the calculation of royalties payable with respect to each such calendar year). The Parties shall no longer be required to retain such books and records for any calendar year after the expiration of the [***] calendar year following such calendar year.

6.5 Blocked Currency. If at any time legal restrictions in the Territory prevent the prompt remittance of any payments with respect to sales therein, Juno shall have the right and option to make such payments by depositing the amount thereof in local currency to Fate's account in a bank or depository in the Territory.

6.6 Confidentiality. Each Party shall treat all financial information of the other Party that is subject to review under this ARTICLE 6 of this Agreement (including all royalty reports) as such other Party's Confidential Information.

ARTICLE 7
DUE DILIGENCE

7.1 Diligence. On a Selected Target-by-Selected Target basis, Juno shall use [***] Efforts to [***].

7.2 Diligence Failure. If, on a Selected Target-by-Selected Target basis, Fate believes that Juno has failed to satisfy the foregoing diligence requirements [***] then Fate shall give written notice to Juno and Juno shall have an opportunity of at least [***] days to cure such failure or to provide written evidence of its satisfaction of the foregoing diligence. If at the end of such [***] days Juno has not cured such failure [***].

ARTICLE 8
INTELLECTUAL PROPERTY

8.1 Ownership of Inventions; Disclosure.

(a) Ownership. Title to all inventions and other intellectual property made solely by employees or consultants of Fate in the course of performing the Research Program shall be owned by Fate; title to all inventions and other intellectual property made solely by employees or consultants of Juno in the course of performing the Research Program shall be owned by Juno; title to all inventions and other intellectual property made jointly by employees or consultants of Juno and Fate in the course of performing the Research Program shall be owned jointly by Juno and Fate. Inventorship of inventions and other intellectual property made pursuant to this Agreement shall be determined in accordance with the patent laws of the United States.

(b) Disclosure of Inventions. Each Party shall promptly disclose to the other any inventions made in connection with this Agreement. Neither Party shall use the Confidential Information of the other Party, including the Results of the Research Program, or any information constituting Collaboration IP to support any patent applications that are not a Collaboration Patent.

(c) Background IP. Each Party would retain ownership of intellectual property rights existing as of the Effective Date, or developed or acquired independently of the Research Program, and nothing in this Agreement shall assign any ownership to the other Party with respect to such intellectual property rights.

(d) Change of Control. Fate shall [***] upon a Change of Control of Fate with a Third Party that [***].

8.2 Patent Prosecution.

(a) Fate Collaboration Patents. Fate shall be responsible, at its expense, and shall have the exclusive right for preparing, filing, prosecuting and maintaining the Fate Collaboration Patents and for conducting any interferences, re-examinations, reissues and oppositions relating thereto. Fate shall keep Juno fully informed with respect to (i) the issuance of patents filed by Fate pursuant to this Section 8.2(a) and (ii) the abandonment of any patent or patent application maintained by Fate pursuant to this Section 8.2(a). Without limiting the foregoing, (x) during the Research Term, with respect to any Fate Collaboration Patents that primarily relate to Engineered T-Cells and (y) after the Research Term, with respect to any Fate Collaboration Patents that primarily relate to Modulated Products incorporating as an active ingredient an Engineered T-Cell directed against Selected Target(s), Fate will: (A) provide Juno with copies of the text of the applications relating to such Fate Collaboration Patents at least [***] days before filing, except for urgent responses in which case Fate will provide a reasonable amount of time based on the circumstance; (B) provide Juno with a copy of each submission made to and document received from a patent authority, court or other tribunal regarding such Fate Collaboration Patents reasonably promptly after making such filing or receiving such document, including a copy of each application as filed together with notice of its filing date and application number; (C) keep Juno advised of the status of all material communications, actual and prospective filings or submissions regarding such Fate Collaboration Patents, and will give Juno copies of any such material communications, filings and submissions proposed to be sent to any patent authority or judicial body; and (D) reasonably incorporate in good faith Juno's comments on the communications, filings and submissions for such Fate Collaboration Patents. If Fate desires to include in any patent filing for a Fate Collaboration Patent any Fate Know-How or Collaboration Know-How that is Enabling (as that term is defined in Section 1.13), then Fate shall notify Juno in writing of its desire and provide to Juno the proposed filing that incorporates the Fate Know-How or Collaboration Know-How. If Juno consents in writing to incorporate such Fate Know-How or Collaboration Know-How in such patent filing, then such Fate Know-How or Collaboration Know-How shall remain Enabling if it first becomes publicly known as a result of the patent office's publication of the applicable patent filing. If Juno does not consent to incorporate such Fate Know-How or Collaboration Know-How in such patent filing, then any such publication shall result in such Fate Know-How or Collaboration Know-How ceasing to be Enabling.

(b) Joint Collaboration Patents. Juno shall be responsible [***], and shall have the exclusive first right for preparing, filing, prosecuting and maintaining the Joint Collaboration Patents that primarily relate to the Products and for conducting any interferences, re-examinations, reissues and oppositions relating thereto. Fate shall be responsible [***], and shall have the exclusive first right for preparing, filing, prosecuting and maintaining the Joint Collaboration Patents that do not primarily relate to the Products and for conducting any interferences, re-examinations, reissues and oppositions relating thereto. The controlling Party shall keep the non-controlling Party fully informed with respect to (i) the issuance of patents filed by the controlling Party pursuant to this Section 8.2(b), and (ii) the abandonment of any patent or patent application maintained by the controlling Party pursuant to this Section 8.2(b). Without limiting the foregoing, the controlling Party will (A) provide the non-controlling Party with copies of the text of the applications relating to the Joint Collaboration Patents at least [***] days before filing, except for urgent responses in which case the controlling Party will provide a reasonable amount of time based on the circumstance; (B) provide the non-controlling Party with a copy of each submission made to and document received from a patent authority, court or other tribunal regarding any Joint Collaboration Patents reasonably promptly after making such filing or receiving such document,

including a copy of each application as filed together with notice of its filing date and application number; (C) keep the non-controlling Party advised of the status of all material communications, actual and prospective filings or submissions regarding the Joint Collaboration Patents, and will give the non-controlling Party copies of any such material communications, filings and submissions proposed to be sent to any patent authority or judicial body; and (D) reasonably consider in good faith the non-controlling Party's comments on the communications, filings and submissions for such Joint Collaboration Patents. If the controlling Party, in its sole discretion, declines to file, prosecute or maintain any Joint Collaboration Patents, then the controlling Party shall notify the non-controlling Party in writing thereof and the non-controlling Party shall have the right to file, prosecute and maintain such Joint Collaboration Patents and conduct any interferences, re-examinations, reissues and oppositions relating thereto.

(c) Juno Collaboration Patents. Juno shall be responsible, at its expense, and shall have the exclusive right for preparing, filing, prosecuting and maintaining the Juno Collaboration Patents and for conducting any interferences, re-examinations, reissues and oppositions relating thereto.

(d) Cooperation. Each Party shall reasonably cooperate with and assist the other Party in connection with the activities of such Party under this Section 8.2 upon the reasonable request of the other Party, including by making scientists and scientific records reasonably available and the execution of all such documents and instruments and the performance of such acts as may be reasonably necessary in order to permit the other Party to continue any filing, prosecution, maintenance or extension of such patents and patent applications.

8.3 Enforcement and Defense.

(a) Notice. Each Party shall promptly notify the other of any knowledge it acquires of any potential infringement of the Fate Patents, Fate Collaboration Patents or Joint Collaboration Patents by a Third Party.

(b) Right to Control Enforcement.

(1) Juno shall have the primary right, but not the obligation, to institute, prosecute, and control any action or proceeding by counsel of its own choice [***] with respect to infringement of Fate Patents (subject to Section 5.8), Fate Collaboration Patents or Joint Collaboration Patents that primarily relate to Modulated Products incorporating as an active ingredient an Engineered T-Cell directed against Selected Target(s), in the case of such Fate Patents or Fate Collaboration Patents only for so long as the License to Modulated Products directed against such Selected Target(s) is exclusive.

(2) Except as provided in Section 8.3(b)(1), (A) Juno shall have the primary right, but not the obligation, to institute, prosecute, and control any action or proceeding by counsel of its own choice with respect to infringement of the Joint Collaboration Patents that primarily relate to Engineered T-Cells, and (B) Fate shall have the primary right, but not the obligation, to institute, prosecute, and control any action or proceeding by counsel of its own choice with respect to infringement of the Joint Collaboration Patents that do not primarily relate to Engineered T-Cells.

(3) Except as provided in Section 8.3(b)(1), Fate shall have the exclusive right, but not the obligation, to institute, prosecute, and control any action or proceeding by counsel of its own choice [***] with respect to infringement of the Fate Patents or Fate Collaboration Patents.

(4) If in any such proceeding the controlling Party is required to join the non-controlling Party for standing purposes or in order for the controlling Party to commence or continue any such proceeding, then the non-controlling Party shall join such proceeding, at the controlling Party's expense.

(5) If the controlling Party in any proceeding described in Section 8.3(b)(1) or Section 8.3(b)(2) fails to abate the infringement or file suit to enforce or defend the applicable patent rights against the infringing party, then the non-controlling Party shall have the right, but not the obligation, to take whatever action it deems appropriate to enforce or defend the applicable patent rights.

(6) Except as otherwise agreed by the Parties in connection with a cost-sharing arrangement, the amount of any recovery from a proceeding brought under Section 8.3(b)(1), Section 8.3(b)(2) or Section 8.3(b)(5), whether by settlement or otherwise, shall first be applied to the out-of-pocket costs of such action by both Parties, and any remaining amounts shall be distributed as follows: (i) in the case Juno brought and controlled such action or proceeding under Section 8.3(b)(1), [***] and (ii) in the case a Party brought and controlled such action or proceeding with respect to infringement of Joint Collaboration Patents under Section 8.3(b)(2) or Section 8.3(b)(5) [***]. The amount of any recovery from any action or proceeding with respect to infringement of Fate Patents or Fate Collaboration Patents brought by Fate under Section 8.3(b)(3) or Section 8.3(b)(5) shall be retained by Fate.

ARTICLE 9
CONFIDENTIALITY

9.1 Confidential Information. The Parties agree that, for the term of this Agreement and for [***] years thereafter, the receiving Party shall not, except as expressly provided in this ARTICLE 9, disclose to any Third Party any Confidential Information furnished to it by the disclosing Party hereto pursuant to this Agreement. For purposes of this ARTICLE 9, "Confidential Information" shall mean any information, samples or other materials, which if disclosed in tangible form is marked "confidential" or with other similar designation to indicate its confidential or proprietary nature, or, if disclosed orally, is indicated orally to be confidential or proprietary at the time of such disclosure. Notwithstanding the foregoing, Confidential Information shall not include any information that can be established by the receiving Party by competent proof that such information:

(a) was already known to the receiving Party, other than under an obligation of confidentiality, at the time of disclosure;

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

(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 the receiving Party in breach of this Agreement;

(d) was independently developed by the receiving Party as demonstrated by documented evidence prepared contemporaneously with such independent development; or

(e) was disclosed to the receiving Party, other than under an obligation of confidentiality, by a Third Party who had no obligation to the disclosing Party not to disclose such information to others.

Notwithstanding anything to the contrary in this Section 9.1, and for the purposes of clarity, the identity of the Targets and Selected Targets shall be deemed Confidential Information of both Juno and Fate. The identity of the Targets and Selected Targets shall not be disclosed by Fate or Juno to any Third Party for so long as the identity of such Target or Selected Target remains Confidential Information. The foregoing will not prevent a Party, if specifically asked by a Third Party about availability to work on a Target or Selected Target, from indicating that it is not available. Fate IP, Fate Collaboration IP and Fate Modulators will be Confidential Information of Fate, Juno Collaboration IP will be Confidential Information of Juno, and Joint Collaboration IP and Results will be Confidential Information of both Juno and Fate.

9.2 Permitted Use and Disclosures. Each Party hereto may use or disclose Confidential Information of the other Party to the extent such use or disclosure is reasonably necessary and permitted in (a) the exercise of the rights granted or performance of obligations hereunder (including Juno's development and commercialization of Modulated Products incorporating as an active ingredient an Engineered T-Cell directed against Selected Target(s), use of Joint Collaboration IP (subject to Section 4.5) and use of Results (subject to Section 4.6)), including in the case of Juno and solely with respect to the Joint Collaboration IP and Results for the development and commercialization of Modulated Products, (b) filing or prosecuting patent applications in accordance with Section 8.2 (subject to Section 8.1(b)), (c) prosecuting or defending litigation relating to or contemplated by this Agreement, (d) complying with applicable governmental laws, regulations or court order or otherwise submitting information to tax or other governmental authorities, or (e) conducting clinical trials pursuant to any right or license granted hereunder, provided that if a Party is required by governmental authority or court order to make any such disclosure, other than pursuant to a confidentiality agreement, it will give reasonable advance notice to the other Party of such disclosure and, save to the extent inappropriate in the case of patent applications, will use its reasonable efforts to secure confidential treatment of such information in consultation with the other Party prior to its disclosure (whether through protective orders or otherwise) and disclose only the minimum necessary to comply with such requirements. A Party that discloses Confidential Information of the other Party to Affiliates, actual and potential licensees and sublicensees, collaborators, employees, consultants, contractors or agents of such Party as permitted by this Section 9.2 shall require that any such Affiliate, actual or potential licensee or sublicensee, collaborator, employee, consultant or agent agrees to be bound by terms of confidentiality and non-use comparable in scope to those set forth in this ARTICLE 9.

9.3 Nondisclosure of Terms. Each of the Parties hereto agrees not to disclose the terms of this Agreement to any Third Party without the prior written consent of the other Party hereto, which

consent shall not be unreasonably withheld, except to such Party's attorneys, advisors, investors, potential investors, acquirers and other similarly situated Third Parties, and actual or prospective collaborators or licensees, in each case on a need to know basis and provided that any such attorney, advisor, actual or potential investor or acquirer or other Third Party agrees to be bound by similar terms of confidentiality and non-use comparable in scope to those set forth in this ARTICLE 9, or to the extent permitted pursuant to the exceptions in Section 9.2(c) and (d). The Parties will coordinate in advance with each other in connection with the filing of this Agreement (including redaction of certain provisions of this Agreement) with the SEC or any stock exchange on which securities issued by a Party are traded, and each Party will use reasonable efforts to seek confidential treatment for the terms proposed to be redacted; provided that each Party will ultimately retain control over what information to disclose to the SEC or any stock exchange, as the case may be, and provided further that the Parties will use their reasonable efforts to file redacted versions with any governing bodies which are consistent with redacted versions previously filed with any other governing bodies. Other than such obligation, neither Party (or its Affiliates) will be obligated to consult with or obtain approval from the other Party with respect to any filings with the SEC or any stock exchange.

9.4 Press Release. The Parties desire to issue a press release regarding this Agreement. Such press release shall be mutually-agreed to by the Parties, and attached hereto as Exhibit D. Such press release shall be issued within two (2) business days of the Effective Date. Except as required by applicable laws (including disclosure requirements of the SEC or any stock exchange on which securities issued by a Party are traded), neither Party shall make any other public announcement concerning this Agreement or the subject matter hereof without the prior written consent of the other, which shall not be unreasonably withheld or delayed; provided that each Party may make any public statement in response to questions by the press, analysts, investors or those attending industry conferences or financial analyst calls, or issue press releases, so long as any such public statement or press release is not inconsistent with prior public disclosures or public statements approved by the other Party pursuant to Section 9.3 or this Section 9.4. In the event of a required public announcement, to the extent practicable under the circumstances, the Party making such announcement shall provide the other Party with a copy of the proposed text of such announcement at least [***] business days prior to the scheduled release to afford such other Party a reasonable opportunity to review and comment upon the proposed text.

9.5 Publications. At least [***] days prior to publishing, publicly presenting, and/or submitting for written or oral publication a manuscript, abstract or the like that includes Results that have not been previously published, each Party shall provide to the other Party a draft copy thereof for its clinical review (unless such Party is required by law to publish such Results sooner, in which case such Party shall provide such draft copy to the other Party as much in advance of such publication as possible). The publishing Party shall consider in good faith any comments provided by the other Party during such [***] day period. The contribution of each Party shall be noted in all publications or presentations by acknowledgment or co-authorship, whichever is appropriate.

9.6 Prior Non-Disclosure Agreement. As of the Effective Date, the terms of this ARTICLE 9 shall supersede any prior non-disclosure, secrecy or confidentiality agreement between the Parties (or their Affiliates) dealing with the subject of this Agreement. Any information disclosed pursuant to any such prior agreement shall be deemed Confidential Information for purposes of this Agreement.

9.7 Equitable Relief. Given the nature of the Confidential Information and the competitive damage that would result to a Party upon unauthorized disclosure, use or transfer of its Confidential Information to any Third Party, the Parties agree that monetary damages would not be a sufficient remedy for any breach of this ARTICLE 9. In addition to all other remedies, a Party shall be entitled to specific performance and injunctive and other equitable relief as a remedy for any breach or threatened breach of this ARTICLE 9.

ARTICLE 10
REPRESENTATIONS AND WARRANTIES; COVENANTS

10.1 Juno. Juno represents, warrants and covenants that: (a) it has the legal power, authority and right to enter into this Agreement and to fully perform all of its obligations hereunder; (b) this Agreement is a legal and valid obligation binding upon it and enforceable in accordance with its terms; (c) the performance of its obligations hereunder do not conflict with, violate or breach or constitute a default or require any consent under, any contractual obligations of Juno; and (d) as of the Effective Date there is no claim or demand of any Third Party pertaining to, or any proceeding that is pending or, to the knowledge of Juno, threatened, that challenges the rights of Juno to conduct its obligations under the Research Program.

10.2 Fate. Fate represents, warrants and covenants that: (a) it has the legal power, authority and right to enter into this Agreement and to fully perform all of its obligations hereunder; (b) this Agreement is a legal and valid obligation binding upon it and enforceable in accordance with its terms; (c) the performance of its obligations and the grant of rights hereunder do not conflict with, violate or breach or constitute a default or require any consent under, any contractual obligations of Fate; (d) [***], (e) to the knowledge of Fate, as of the Effective Date, [***], (f) Fate will not knowingly use or incorporate any patent, know-how or other intellectual property rights of a Third Party in conducting its obligations under the Research Program, and (g) as of the Effective Date, [***].

10.3 Disclaimer. Juno and Fate specifically disclaim any guarantee that the Research Program will be successful, in whole or in part. Provided that the Parties perform their obligations under this Agreement and the Research Plan, the failure of the Parties to successfully develop, Modulators and/or Products will not constitute a breach of any representation or warranty or other obligation under this Agreement. EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS AGREEMENT, FATE AND JUNO MAKE NO REPRESENTATIONS AND EXTEND NO WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE FATE IP, COLLABORATION IP, INFORMATION DISCLOSED HEREUNDER OR PRODUCTS OR MODULATED PRODUCTS INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, VALIDITY OF ANY COLLABORATION IP, PATENTED OR UNPATENTED, OR NONINFRINGEMENT OF THE INTELLECTUAL PROPERTY RIGHTS OF THIRD PARTIES.

10.4 Mutual Covenants.

(a) Employees, Consultants and Contractors. Each Party covenants that it has obtained or will obtain written agreements from each of its employees, consultants and contractors who perform research or development activities pursuant to this Agreement, which agreements will obligate such persons to obligations of confidentiality and non-use and to assign (or, if assignment is not permitted to license exclusively) inventions in a manner consistent with the provisions of this Agreement; provided that such Party shall be entitled to agree to commercially reasonable terms that allow any such Third Party consultants and contractors to retain rights in or to intellectual property that is generally applicable to such Third Party's business, including any improvements to its preexisting intellectual property rights.

(b) No Debarment. Each Party represents, warrants and covenants to the other party that (i) it is not debarred or disqualified under the U.S. Federal Food, Drug and Cosmetic Act, as may be amended, or comparable laws in any country or jurisdiction other than the U.S., (ii) neither it, nor to its knowledge, any of its employees, consultants or contractors, have, to its knowledge, been charged with, or convicted of, any felony or misdemeanor within the ambit of 42 U.S.C. §§ 1320a-7(a), 1320a-7(b)(l)-(3), and (iii) it does not, and will not during the term, employ or use the services of any person who is debarred or disqualified, in connection with activities relating to the Research Program or any Product or Modulated Product. In the event that either Party becomes aware of the debarment or disqualification or threatened debarment or disqualification of any person providing services to such party, including the party itself or its Affiliates or sublicensees, which directly or indirectly relate to activities contemplated by this Agreement, such Party shall immediately notify the other Party in writing and such Party shall cease employing, contracting with, or retaining any such person to perform any such services.

(c) Compliance with Laws. In the performance of its obligations under this Agreement, each Party shall comply and shall cause its and its Affiliates' employees and contractors to comply with all applicable laws, rules and regulations.

ARTICLE 11
INDEMNIFICATION

11.1 Juno. Juno agrees to indemnify, defend and hold Fate and its Affiliates and their respective directors, officers, employees, agents and their respective successors, heirs and assigns (the "Fate Indemnitees") harmless from and against any losses, costs, claims, damages, liabilities or expense (including reasonable attorneys' and professional fees and other expenses of litigation) (collectively, "Liabilities") arising, directly or indirectly out of or in connection with Third Party claims, suits, actions, demands or judgments, relating to [***].

11.2 Fate. Fate agrees to indemnify, defend and hold Juno and its Affiliates and sublicensees and their respective directors, officers, employees, agents and their respective successors, heirs and assigns (the "Juno Indemnitees") harmless from and against any Liabilities arising, directly or indirectly out of or in connection with Third Party claims, suits, actions, demands or judgments, relating to [***].

11.3 Indemnification Procedure. A Party that intends to claim indemnification (the "Indemnitee") under this ARTICLE 11 shall promptly notify the other Party (the "Indemnitor") in writing of any claim, complaint, suit, proceeding or cause of action with respect to which the Indemnitee intends to claim such indemnification (for purposes of this Section 11.3, each a "Claim"), and the Indemnitor shall have sole control of the defense and/or settlement thereof; provided that the Indemnitee shall have the right to participate, at its own expense, with counsel of its own choosing in the defense and/or settlement of such Claim. The indemnification obligations of the Parties under this ARTICLE 11 shall not apply to amounts paid in settlement of any Claim if such settlement is effected without the consent of the Indemnitor, which consent shall not be withheld or delayed unreasonably. The failure to deliver written notice to the Indemnitor within a reasonable time after the commencement of any such Claim, if prejudicial to its ability to defend such action, shall relieve such Indemnitor of any liability to the Indemnitee under this ARTICLE 11, but the omission so to deliver written notice to the Indemnitor shall not relieve the Indemnitor of any liability to any Indemnitee otherwise than under this ARTICLE 11. The Indemnitee under this ARTICLE 11, and its employees, at the Indemnitor's request and expense, shall provide full information and reasonable assistance to Indemnitor and its legal representatives with respect to such Claims covered by this indemnification. It is understood that only Juno or its permitted assignee may claim indemnity under this ARTICLE 11 (on its own behalf or on behalf of a Juno Indemnitee), and other Juno Indemnitees may not directly claim indemnity hereunder. Likewise, it is understood that only Fate may claim indemnity under this ARTICLE 11 (on its own behalf or on behalf of a Fate Indemnitee), and other Fate Indemnitees may not directly claim indemnity hereunder.

ARTICLE 12
TERM AND TERMINATION

12.1 Term. Unless earlier terminated, this Agreement will continue in full force and effect from the Effective Date until the date no further payments are due under ARTICLE 5 above. If no Selected Target has been selected in accordance with Section 2.8 by the end of the Research Term, the following provisions shall expire at the end of the Research Term: Sections 4.1, 4.2, 4.3(b), 4.3(c), 4.3(e) 8.2 and 8.3 and ARTICLE 7. For any Modulated Product incorporating as an active ingredient an Engineered T-Cell directed against Selected Target(s) that is subject to the License granted under Section 4.1, on a Modulated Product-by-Modulated Product and country-by-country basis, following the date that no further payments are due under ARTICLE 5 with respect to such Modulated Product in a country (but not an early termination of this Agreement), and provided that Juno has made all payments due and payable to Fate with respect to such Modulated Product in such country, Juno shall have a perpetual, fully paid-up, non-exclusive license under the Fate IP and Fate Collaboration IP (subject to Section 5.8) to make, have made, use, sell, offer for sale and import such Modulated Product in such country for use in the Field.

12.2 Termination for Breach. Subject to the provisions of this Section 12.2, either Party may terminate the Research Program and this Agreement in the event the other Party hereto shall have materially breached or defaulted in the performance of any of its material obligations hereunder, and such default shall have continued for [***] days ([***] days for payment breach) after written notice thereof was provided to the breaching Party by the non-breaching Party. Any termination shall become effective at the end of such [***] day ([***] day for payment breach)

period unless the breaching Party has cured any such breach or default prior to the expiration of the [***] day ([***] day for payment breach) period. Fate shall have the right to terminate this Agreement during the Research Term for Juno's uncured material breach in accordance with the foregoing, but shall not have the right to terminate this Agreement after the Research Term, except in the event that Juno fails to make any undisputed payment when due and does not cure such failure in accordance with this Section 12.2. In any event, Fate shall have the right to seek monetary damages or other available remedies for any breach of this Agreement by Juno.

12.3 Termination upon Notice. Juno may terminate this Agreement upon [***] written notice to Fate; provided, however, that notice of such termination of this Agreement may not be provided at any time prior to the second anniversary of the Effective Date.

12.4 Effect of Expiration or Termination.

(a) Accrued Rights and Obligations. Termination of this Agreement for any reason shall not release either Party hereto from any liability which, at the time of such termination, has already accrued to the other Party or which is attributable to a period prior to such termination nor preclude either Party from pursuing any rights and remedies it may have hereunder or at law or in equity with respect to any breach of this Agreement.

(b) Return of Materials. Upon any termination of this Agreement, Juno and Fate shall promptly return to the other all Confidential Information received from the other Party, except one copy of which may be retained for archival purposes subject to a continuing obligation of confidentiality.

(c) Effect of Expiration or Termination. Upon any expiration or termination of this Agreement, except to the extent of any license as provided in Section 12.1, in addition to any rights and remedies that either Party may have at law or equity: (i) the licenses and rights to Juno under Section 4.1 shall terminate, (ii) each party shall immediately cease using the Confidential Information and Materials of the other party, for all purposes, and (iii) all other rights and obligations of the Parties under this Agreement shall terminate, except as provided elsewhere in this Section 12.4 and Section 12.5.

12.5 Survival Sections. Sections 2.7 (last sentence only), 4.5, 4.6, 4.7, 6.4 (for the period described therein), 6.6, 8.1 (excluding clause (d)), 10.3, 12.4, 12.5 and 12.6 and Articles 1, 9, 11 and 13 shall survive the expiration or termination of this Agreement for any reason. If, after the termination of this Agreement, Juno, itself or through any Affiliate or through a licensee pursuant to a license granted by Juno under the Collaboration IP, develops, commercializes or otherwise exploits any Modulated Product, then all of the payment provisions of Sections 5.5, 5.6 and 5.7 and ARTICLE 6 shall apply to such Modulated Product and shall survive termination of this Agreement for such purpose.

12.6 Termination Not Sole Remedy. Termination is not the sole remedy under this Agreement and, whether or not termination is effected, all other remedies will remain available except as agreed to otherwise herein.

ARTICLE 13
MISCELLANEOUS

13.1 Governing Laws. This Agreement shall be governed by, interpreted and enforced in accordance with the laws of the State of New York, without regard to principles of conflicts of laws. Subject to Section 13.2, all disputes arising out of this Agreement shall be subject to the exclusive jurisdiction and venue of the state and federal courts located in the Southern District of New York (and the appellate courts thereof), and each Party hereby irrevocably consents to the personal and non-exclusive jurisdiction and venue thereof.

13.2 Disputes. If any dispute, claim or controversy of any nature arising out of or relating to this Agreement, including any action or claim based on tort, contract or statute, or concerning the interpretation, effect, termination, validity, performance or breach of this Agreement (each, a "Dispute"), arises between the Parties and the Parties cannot resolve such Dispute within [***] days of a written request by either Party to the other Party, the Parties agree to refer the Dispute to the respective Chief Executive Officers of each Party for resolution. If, after an additional [***] days, such representatives have not succeeded in negotiating a resolution of the Dispute, and a Party wishes to pursue the matter, each such dispute, controversy or claim will be submitted to the Judicial Arbitration and Mediation Service ("JAMS") or its successor for non-binding mediation in New York, New York before a single mediator. The Parties will cooperate with JAMS and with one another in selecting a mediator from the JAMS panel of neutrals and in scheduling the mediation proceedings. The Parties agree that they will participate in the mediation in good faith and that they will share equally in its costs. Any Dispute that cannot be resolved through mediation, and any Dispute with respect to which a Party is claiming equitable relief, shall be resolved by a court of competent jurisdiction.

13.3 Independent Contractors. The relationship of the Parties under this Agreement is that of independent contractors. Neither Party shall be deemed to be an employee, agent, partner, franchisor, franchisee, joint venture or legal representative of the other for any purpose as a result of this Agreement or the transactions contemplated thereby, and neither shall have the right, power or authority to create any obligation or responsibility on behalf of the other.

13.4 Assignment. The Parties agree that neither this Agreement nor their rights and obligations under this Agreement shall be delegated, assigned or otherwise transferred to a third party, in whole or part, whether voluntarily or by operation of law, including by way of sale of assets, merger or consolidation, without prior written consent of the other Party. Notwithstanding the foregoing, a Party may, without such consent, assign this Agreement and its rights and obligations hereunder in their entirety (a) to an Affiliate, or (b) in connection with a Change of Control. Subject to the foregoing, this Agreement shall be binding on and inure to the benefit of the Parties and their permitted successors and assigns. Any attempted delegation, assignment or transfer in violation of the foregoing shall be null and void.

13.5 Force Majeure. If either Party is prevented from or delayed in the performance of any of its obligations hereunder by reason of acts of God, war, strikes, riots, storms, fires, earthquake, power shortage or failure, failure of the transportation system, or any other cause whatsoever beyond the reasonable control of the Party ("Force Majeure Event"), the Party so prevented or delayed shall

be excused from the performance of any such obligation during a period that is reasonable in light of the Force Majeure Event, but no less than the duration of the Force Majeure Event itself.

13.6 Right to Develop Independently. Except as otherwise expressly set forth in this Agreement, nothing in this Agreement shall impair either Party's right to independently acquire, license, develop for itself, or have others develop for it, intellectual property and technology performing similar functions as the other Party's IP or to market and distribute products or services based on such other intellectual property and technology.

13.7 Bankruptcy. The licenses and sublicenses granted by Fate under this Agreement are and shall be deemed to be, for purposes of 11 U.S.C. Section 365(n), a license of "Intellectual Property Rights" as defined thereunder, and if Fate is under any proceeding under the United States Bankruptcy Code and the trustee in bankruptcy of Juno, or Juno as a debtor in possession, elects to reject the foregoing license, Juno may, pursuant to 11 U.S.C. Section 365(n)(1) and (2), retain any and all of Juno's rights under such license and sublicense to the maximum extent permitted by law.

13.8 Notices. Any notices required or permitted under this Agreement or required by law must be in writing by first class certified mail or international express delivery service (such as DHL), in each case properly posted and fully prepaid to the applicable address below, or to such other address as either Party may substitute by written notice under this Section. Notice shall be deemed to have been given when delivered or, if delivery is not accomplished by reason or some fault of the addressee, when tendered.

If to Fate:	Fate Therapeutics, Inc. 3535 General Atomic Court, Suite 200 San Diego, California, 92121, USA Attention: Chief Operating Officer
If to Juno:	Juno Therapeutics, Inc. 307 Westlake Avenue North, Suite 300 Seattle, Washington, 98109, USA Attention: General Counsel

13.9 Interpretation. The captions and headings to this Agreement are for convenience only, and are to be of no force or effect in construing or interpreting any of the provisions of this Agreement. Unless specified to the contrary, references to Articles, Sections or Exhibits mean the particular Articles, Sections or Exhibits to this Agreement and references to this Agreement include all Exhibits hereto. Unless context otherwise clearly requires, whenever used in this Agreement: (a) the words "include" or "including" shall be construed as incorporating, also, "but not limited to" or "without limitation;" (b) the word "day" or "year" means a calendar day or year unless otherwise specified; (c) the word "notice" shall mean notice in writing (whether or not specifically stated) and shall include notices, consents, approvals and other written communications contemplated under this Agreement; (d) the words "hereof," "herein," "hereby" and derivative or similar words refer to this Agreement (including any Exhibits); (e) the word "or" shall be construed as the inclusive meaning identified with the phrase "and/or;"(f) provisions that require that a Party, the Parties or a committee

hereunder "agree," "consent" or "approve" or the like shall require that such agreement, consent or approval be specific and in writing, whether by written agreement, letter, approved minutes or otherwise; (g) words of any gender include the other gender; (h) words using the singular or plural number also include the plural or singular number, respectively; and (i) the word "law" (or "laws") when used herein means any applicable, legally binding statute, ordinance, resolution, regulation, code, guideline, rule, order, decree, judgment, injunction, mandate or other legally binding requirement of a government entity, together with any then-current modification, amendment and re-enactment thereof, and any legislative provision substituted therefor. The Parties and their respective counsel have had an opportunity to fully negotiate this Agreement. If any ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the Parties, and no presumption or burden of proof shall arise favoring or disfavoring any Party by virtue of the authorship of any provision of this Agreement. No prior draft of this Agreement shall be used in the interpretation or construction of this Agreement.

13.10 Compliance with Laws. Each Party shall furnish to the other Party any information requested or required by that Party during the term of this Agreement or any extensions hereof to enable that Party to comply with the requirements of any U.S. or foreign, state and/or government agency.

13.11 Further Assurances. At any time or from time to time on and after the date of this Agreement, a Party shall at the written and reasonable request of the requesting Party: (a) deliver to the requesting Party such records, data or other documents consistent with the provisions of this Agreement; (b) execute, and deliver or cause to be delivered, all such consents, documents or further instruments of transfer or license; and (c) take or cause to be taken all such actions, as the requesting Party may reasonably deem necessary or desirable in order for the requesting Party to obtain the full benefits of this Agreement and the transactions contemplated hereby.

13.12 Use of Names and Marks. Neither Party shall use the name, trade name, trademark or other designation of the other Party or its employees in connection with any products, promotion or advertising without the prior written permission of the other Party. For clarity, either Party may, without the other Party's prior permission, reasonably utilize the other Party's name or names of its employees in statements of fact, in legal proceedings, patent filings, and regulatory filings.

13.13 Severability. If any provision, or portion thereof, in this Agreement is held to be invalid or unenforceable to any extent, such provision of this Agreement shall be enforced to the maximum extent permissible by applicable law so as to effect the intent of the Parties, and the remainder of the Agreement shall remain in full force and effect. The Parties shall negotiate in good faith a valid and enforceable substitute provision for any invalid or unenforceable provision that most nearly achieves the intent and economic effect of such invalid or unenforceable provision as if it were enforceable.

13.14 Waiver. Any waiver of any provision of this Agreement or of a Party's rights or remedies under this Agreement must be in writing to be effective. Failure, neglect, or delay by a Party to enforce the provisions of this Agreement or its rights or remedies at any time, shall not be construed as a waiver of such Party's rights under this Agreement and shall not in any way affect the validity of the whole or any part of this Agreement or prejudice such Party's right to take subsequent action. No exercise or enforcement by either Party of any right or remedy under this Agreement

shall preclude the enforcement by such Party of any other right or remedy under this Agreement or that such Party is entitled by law to enforce.

13.15 Limitation of Liability. EXCEPT FOR LIABILITY FOR BREACH OF ARTICLE 9, NEITHER PARTY SHALL BE ENTITLED TO RECOVER FROM THE OTHER PARTY ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES IN CONNECTION WITH THIS AGREEMENT OR ANY LICENSE GRANTED HEREUNDER; *provided, however,* that this Section 13.15 shall not be construed to limit either Party's indemnification obligations under ARTICLE 11.

13.16 Entire Agreement; Modification. This Agreement (including the Exhibits and any amendments hereto signed by both Parties) constitutes the entire understanding and agreement between the Parties with respect to the subject matter hereof and supersedes any and all prior and contemporaneous negotiations, representations, agreements, and understandings, written or oral, that the Parties may have reached with respect to the subject matter hereof. Except as set forth in Section 13.13, this Agreement may not be altered, amended or modified in any way except by a writing (excluding email or similar electronic transmissions) signed by the authorized representatives of both Parties.

13.17 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Once signed, any reproduction of this Agreement made by reliable means (e.g., pdf, photocopy, facsimile) is considered an original.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed by their authorized representatives and delivered in duplicate originals as of the Effective Date.

JUNO THERAPEUTICS, INC.		FATE THERAPEUTICS, INC.	
By:	/s/ Hans Bishop	By:	/s/ Scott Wolchko
Name:	H. Bishop	Name:	Scott Wolchko
Title:	C.E.O.	Title:	COO/CFO

EXHIBIT A

Initial Research Plan

[***]

EXHIBIT B

Target List

[Initial list of targets (up to [***]), to be provided by Juno within [***] days of the Effective Date]

EXHIBIT D

Press Release

Juno Therapeutics and Fate Therapeutics Announce Strategic Research Collaboration to Improve the Therapeutic Profile of Engineered T Cell Immunotherapies

Alliance Utilizes Fate's Hematopoietic Cell Programming Platform to Identify Small Molecule Modulators for Juno's Leading Genetically-Engineered T Cell Immunotherapies

SEATTLE and SAN DIEGO — May 6, 2015 — Juno Therapeutics, Inc. (NASDAQ: JUNO) and Fate Therapeutics, Inc. (NASDAQ: FATE) announced today that they have executed a strategic research collaboration and license agreement to identify and utilize small molecules to modulate Juno's genetically-engineered T cell product candidates to improve their therapeutic potential for cancer patients. The collaboration brings together Juno's industry-leading expertise in the development of chimeric antigen receptor (CAR) and T cell receptor (TCR) based cellular immunotherapies and Fate's innovative platform for programming the biological properties and *in vivo* therapeutic potential of hematopoietic cells.

"A deep understanding of T cell biology is the basis of Juno's approach to creating best-in-class cellular immunotherapies," said Hans Bishop, Chief Executive Officer of Juno Therapeutics. "Partnering with Fate Therapeutics, and accessing its strong science and leading platform for modulating the properties of immunological cells, enables interrogation of new avenues of T cell manipulation and provides an opportunity to enhance the therapeutic profile of our genetically-engineered T cell product candidates."

Through the four-year research and development collaboration, Fate will be responsible for screening and identifying small molecules that modulate the biological properties of engineered T cells. Juno will be responsible for the development and commercialization of engineered T cell immunotherapies incorporating Fate's small molecule modulators. Juno has the option to extend the exclusive research term for two years through an additional payment and continued funding of collaboration activities.

"We are excited to establish this strategic alliance with Juno, a company that shares our deep commitment to developing transformative cellular therapeutics for patients afflicted with life-threatening disorders," said Christian Weyer, M.D., M.A.S., President and Chief Executive Officer of Fate Therapeutics. "This partnership exemplifies the extension of our small molecule programming platform to additional hematopoietic cell types, such as T cells, as we continue to build and advance our innovative pipeline of programmed hematopoietic cellular therapeutic candidates."

Financial terms of the agreement include an upfront payment to Fate of $5 million and the purchase by Juno of one million shares of Fate common stock at $8.00 per share. Juno will fund all collaboration activities for an exclusive four-year research term. For each product developed by Juno that incorporates modulators identified through the collaboration, Fate is eligible to receive approximately $50 million in target selection fees and clinical, regulatory and commercial milestones, as well as low single-digit royalties on sales. Fate retains exclusive rights to its intellectual property for all other purposes.

About Chimeric Antigen Receptor (CAR) Technology

Juno's chimeric antigen receptor (CAR) technology genetically engineers T cells to recognize and kill cancer cells. Juno's CAR T cell technology inserts a gene for a particular CAR into the T cell, enabling it to recognize cancer cells based on the expression of a specific protein located on the cell surface. When the engineered T cell engages the target protein on the cancer cell, it initiates a cell-killing response against the cancer cell.

About Cell Programming

Since its founding, Fate Therapeutics has been dedicated to programming the function of cells *ex vivo* to improve their therapeutic potential. Using advanced molecular characterization tools and technologies, Fate's platform enables the identification of small molecule or biologic modulators that promote rapid and supra-physiologic activation or inhibition of therapeutically-relevant genes and cell-surface proteins, such as those involved in the homing, proliferation and survival of hematopoietic stem cells or those involved in the persistence, proliferation and reactivity of immunological cells. Fate utilizes its deep understanding of the hematopoietic system to rapidly assess and quantify the therapeutic potential of programmed hematopoietic cells *in vivo*, and applies its modulators to maximize the safety and efficacy of hematopoietic cellular therapeutics.

About Juno Therapeutics, Inc.

Juno Therapeutics is building a fully integrated biopharmaceutical company focused on revolutionizing medicine by re-engaging the body's immune system to treat cancer. Founded on the vision that the use of human cells as therapeutic entities will drive one of the next important phases in medicine, Juno is developing cell-based cancer immunotherapies based on chimeric antigen receptor and high-affinity T cell receptor technologies to genetically engineer T cells to recognize and kill cancer. Juno is developing multiple cell-based product candidates to treat a variety of B-cell malignancies as well as solid tumors. Several product candidates have shown compelling evidence of tumor shrinkage in the clinical trials in refractory leukemia and lymphoma conducted to date. Juno's long-term aim is to improve and leverage its cell-based platform to develop new product candidates that address a broader range of cancers and human diseases. Juno brings together innovative technologies from some of the world's leading research institutions, including the Fred Hutchinson Cancer Research Center, Memorial Sloan Kettering Cancer Center, Seattle Children's Research Institute, and The National Cancer Institute.

About Fate Therapeutics, Inc.

Fate Therapeutics is a clinical-stage biopharmaceutical company engaged in the development of programmed cellular therapeutics for the treatment of severe, life-threatening diseases. The Company's approach utilizes established pharmacologic modalities, such as small molecules, to program the fate and function of cells *ex vivo*. The Company's lead product candidate, PROHEMA®, is an *ex vivo* programmed hematopoietic cellular therapeutic, which is currently in clinical development for the treatment of hematologic malignancies and rare genetic disorders in patients undergoing hematopoietic stem cell transplantation (HSCT). The Company is also using its proprietary induced pluripotent stem cell platform to develop *ex vivo* reprogrammed hematopoietic and myogenic cellular therapeutics. Fate Therapeutics is headquartered in San Diego, CA. For more information, please visit www.fatetherapeutics.com.

Juno Forward Looking Statements

This press release contains forward-looking statements, including statements regarding the impact, benefits, timing, conduct, and funding of collaboration between the companies, as well as the capabilities, expertise, and responsibilities of each. Forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from such forward-looking statements, and reported results should not be considered as an indication of future performance. These risks and uncertainties include, but are not limited to, risks associated with: the success, cost, and timing of Juno's product development activities and clinical trials, and Juno's ability to finance these activities and trials; Juno's ability to obtain regulatory approval for and to commercialize its product candidates; Juno's ability to establish a commercially-viable manufacturing process and manufacturing infrastructure; regulatory requirements and regulatory developments; success of Juno's competitors with respect to competing treatments and technologies; Juno's dependence on third-party research institution collaborators and other contractors in Juno's research and development activities, including for the conduct of clinical trials and the manufacture of Juno's product candidates; Juno's ability to obtain, maintain, or protect intellectual property rights related to its product candidates; amongst others. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to Juno's business in general, see Juno's Annual Report on Form 10-K filed with the Securities and Exchange Commission on March 19, 2015 and Juno's other periodic reports filed with the Securities and Exchange Commission. These forward-looking statements speak only as of the date hereof. Juno disclaims any obligation to update these forward-looking statements.

Fate Therapeutics Forward-Looking Statements

This release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding the Company's ability to identify and evaluate small molecule modulators for the programming of T cells, the Company's plans to undertake certain preclinical research on the therapeutic potential of programmed T cells, our expectations regarding the clinical effectiveness and safety of programmed T cell therapeutics,

including CAR and TCR products developed through the collaboration, and the potential benefits of the collaboration, including expected funding and payments to be received under the collaboration. These and any other forward-looking statements in this release are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include, but are not limited to, the risk that we are unable to conduct or complete activities required under the collaboration, the risk of cessation or delay of any development activities under the collaboration for a variety of reasons (including any difficulties or delays in identifying modulators for the programming of T cells, and any adverse effects or events or other negative results that may be observed in clinical development of any product candidates developed through the collaboration), and the risk that funding and payments received under the collaboration may be less than expected. For a discussion of other risks and uncertainties, and other important factors, any of which could cause our actual results to differ from those contained in the forward-looking statements, see the risks and uncertainties detailed in the Company's periodic filings with the Securities and Exchange Commission, including but not limited to the Company's Form 10-K for the year ended December 31st, 2014, and from time to time the Company's other investor communications. We are providing the information in this release as of this date and do not undertake any obligation to update any forward-looking statements contained in this release as a result of new information, future events or otherwise.

EXHIBIT E

Fate Upstream Agreements

None

Exhibit 10.2

FATE THERAPEUTICS, INC.

AMENDMENT TO AMENDED AND RESTATED INVESTOR RIGHTS AGREEMENT

This Amendment to the Amended and Restated Investor Rights Agreement (this "**Amendment**"), is made as of the 4th day of May 2015, by and among Fate Therapeutics, Inc., a Delaware corporation (the "**Company**"), the holders of shares of the Company's common stock as set forth on signature pages hereto (the "**Stockholders**") and Juno Therapeutics, Inc. ("**Juno**") This amendment amends that certain Amended and Restated Investor Rights Agreement, dated as of August 8, 2013, by and among the Company and the parties named therein (the "**Investor Rights Agreement**"). All capitalized terms used but not defined herein shall have the meanings set forth in the Investor Rights Agreement unless otherwise provided.

RECITALS

A. **WHEREAS**, the Company has agreed that Juno shall be entitled to certain registration rights with respect to the shares of common stock issued, or to be issued, to Juno pursuant to that certain Stock Purchase Agreement by and between Juno and the Company of even date herewith;

B. **WHEREAS**, the Company and Juno have entered into that certain Collaboration and License Agreement of even date herewith;

C. **WHEREAS**, pursuant to Section 4.10 of the Investor Rights Agreement, any provision of the Investor Rights Agreement may be amended or waived (either generally or in a particular instance and either retroactively or prospectively) with the written consent of the Company and an Investor or Investors holding, in the aggregate, more than fifty percent (50%) of the outstanding shares of Registrable Securities held by Investors; and

D. **WHEREAS**, in consideration for, and as an inducement for entering into such collaboration and license agreement, the Company and the Stockholders desire to amend the Investor Rights Agreement as provided herein.

AGREEMENT

1. Definition of Form S-3 Initiating Holders. The definition of "Form S-3 Initiating Holders" as set forth in Section 1.1 of the Investor Rights Agreement is amended and restated to read in its entirety as follows:

> "**Form S-3 Initiating Holders**" means: (i) any Holder or Holders who in the aggregate hold not less than twenty-five percent (25%) of the Registrable Securities then outstanding and who propose to register securities, the aggregate offering price of which, net of underwriting discounts and commissions, exceeds $1,000,000, and (ii) beginning on May 4, 2017, Juno Therapeutics, Inc. ("Juno") to the extent Juno proposes to register either (A) securities, the aggregate offering price of which, net of underwriting discounts and commissions, exceeds $1,000,000, or (B) all Registrable Securities then held by Juno.

2. Definition of Initiating Holders. The definition of "Initiating Holders" as set forth in Section 1.1 of the Investor Rights Agreement is amended and restated to read in its entirety as follows:

"**Initiating Holders**" means: (i) any Holder or Holders who in the aggregate hold not less than forty percent (40%) of the Registrable Securities then outstanding and who propose to register securities, the aggregate offering price of which, net of underwriting discounts and commissions, is at least $5,000,000 and (ii) beginning on May 4, 2017, Juno to the extent Juno proposes to register either (A) securities, the aggregate offering price of which, net of underwriting discounts and commissions, exceeds $5,000,000, or (B) all Registrable Securities then held by Juno.

3. Definition of Registrable Securities. The definition of "Registrable Securities" as set forth in Section 1.1 of the Investor Rights Agreement is amended and restated to read in its entirety as follows:

"**Registrable Securities**" shall mean (i) Conversion Stock, other than shares for which registration rights have terminated pursuant to Section 1.15 hereof; (ii) any Common Stock of the Company issued as a dividend or other distribution with respect to or in exchange for or in replacement of the shares referenced in clause (i) above or clause (v) below; (iii) solely for the purposes of Sections 1.5 — 1.10, 1.13 — 1.15 and 4, the shares of Founders' Stock, (iv) solely for the purposes of Sections 1.3 — 1.10, 1.13 — 1.15 and 4, shares of the Company's Common Stock issued and issuable upon conversion of the shares of convertible preferred stock issued and issuable upon exercise or conversion of that certain Warrant to Purchase Stock issued to Silicon Valley Bank on January 5, 2009 and that certain Warrant to Purchase Stock issued to Silicon Valley Bank on August 25, 2011 (together, the "Warrants"), and the shares of Common Stock issued and issuable upon exercise or conversion of the Warrants at all times when the applicable Class (as defined in each of the Warrants) is Common Stock, except that the holder of the Warrants shall not be entitled to be an Initiating Holder, and (v) the shares of Common Stock issued to, or to be issued to, Juno, pursuant to that certain Stock Purchase Agreement by and between Juno and the Company, dated as of May 4, 2015 (the "Juno SPA"); *provided, however*, that shares of Common Stock or other securities shall only be treated as Registrable Securities if and so long as (A) they have not been sold to or through a broker or dealer or underwriter in a public distribution or a public securities transaction, (B) they have not been sold in a transaction exempt from the registration and prospectus delivery requirements of the Securities Act under Section 4(1) thereof so that all transfer restrictions and restrictive legends with respect thereto are removed upon the consummation of such sale, (C) they have not been transferred in a transaction pursuant to which the registration rights are not also assigned in accordance with Section 1.11 hereof, (D) with respect to each Holder other than Juno, all such shares held by such Holder could not be sold under Rule 144 of the Securities Act (or any similar or successor rule) during any one ninety (90) day period, or (E) with respect to Juno, all such shares held by Juno could not be sold under Rule 144 of the Securities Act (or any similar or successor rule) during any one ninety (90) day period or could not be sold without breaching the restrictions on transfer set forth in the June SPA (and assuming for the purposes of Rule 144 that Juno is subject to the volume limitations thereof as if Juno was an "affiliate" within the meaning of Rule 144); and *provided further* that any shares of Common Stock issued to Juno shall only be treated as Registrable Securities beginning on May 4, 2017."

4. Restrictions. Section 1.2 of the Investor Rights Agreement shall not apply to Juno.

5. Request for Registration on Form S-3 by Juno. The limitation set forth in Section 1.4(b)(ii)(A) of the Investor Rights Agreement shall not apply to any registration requests initiated by Juno.

6. Termination of Rights. Section 1.15 of the Investor Rights Agreement is amended and restated to read in its entirety as follows:

"1.15 Termination of Rights. The rights of any particular Holder to cause the Company to register securities under Sections 1.3, 1.4, and 1.5 shall terminate with respect to such Holder after the earlier of (i) the fourth (4th) anniversary of the consummation of an IPO in which all Preferred Stock and all Notes are converted into Common Stock, (ii) with respect to any Holder, at such time after an IPO as Rule 144 or another similar exemption under the Securities Act is available for the sale of all of such Holder's shares during a three-month period without registration or (iii) upon termination of the Agreement as provided herein; *provided, however*, that, notwithstanding any of the foregoing and in lieu thereof, the rights of Juno shall terminate upon the earlier of (x) [***] or (y) such time as all such shares held by Juno become eligible for sale under Rule 144 of the Securities Act (or any similar or successor rule) during any one ninety (90) day period without registration and without breach of the restrictions set forth in the Juno SPA (and assuming for the purposes of Rule 144 that Juno is subject to the volume limitations thereof as if Juno were an "affiliate" within the meaning of Rule 144), and Juno shall have no rights to cause the Company to register securities under this Agreement to the extent that any such registration rights have been waived by existing Holders prior to the date of this Amendment with respect to offerings of securities by the Company that may be conducted pursuant to the Company's registration statement on Form S-3 (File No. 333-199107)."

7. Amendment and Waiver. In addition to the provisions set forth in Section 4.10 of the Investor Rights Agreement, the consent of Juno shall be required for any amendment to or waiver of any provision of the Investor Rights Agreement if such amendment or waiver would adversely affect the rights of Juno as set forth in this Amendment.

8. Amendment to Exhibit A. Exhibit A to the Investor Rights Agreement is hereby amended to include Juno as an Investor.

9. Effect of this Amendment. This Amendment shall form a part of the Investor Rights Agreement for all purposes, and each party thereto and hereto shall be bound hereby. From and after the execution of this Amendment by the parties hereto, any reference to the Investor Rights Agreement shall be deemed a reference to the Investor Rights Agreement as amended hereby. This amendment shall be deemed to be in full force and effect from and after the execution of this Amendment by the parties hereto. Except as specifically set forth herein,

each term and condition of the Investor Rights Agreement shall continue in full force and effect. The Company represents to Juno that the execution of this Amendment by the Company, Polaris Venture Partners V, L.P., Polaris Venture Partners Founders' Fund V, L.P., Polaris Venture Partners Entrepreneurs' Fund V, L.P., Polaris Venture Partners Special Founders' Fund V, L.P., and Juno is sufficient to cause the effectiveness of the amendments to the Investor Rights Agreement contemplated hereby.

10. Governing Law. This Amendment shall be governed by and construed in accordance with the General Corporation Law of the State of Delaware as to matters within the scope thereof, and as to all other matters shall be governed by and construed in accordance with the internal laws of the State of California, without regard to conflict of law principles that would result in the application of any law other than the law of the State of California.

11. Counterparts; Electronic and Facsimile Signatures. This Amendment may be executed in any number of counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same instrument. This Amendment may be executed and delivered electronically (including by transmission of .pdf files) and by facsimile and, upon such delivery, such will be deemed to have the same effect as if the original signature had been delivered to the other party. Each of the Stockholders and Juno agree to deliver to the Company the original signature copy by express overnight delivery. However, the failure to deliver the original signature copy and/or the nonreceipt of the original signature copy shall have no effect upon the binding and enforceable nature of this Amendment.

[Signature Pages Follow]

IN WITNESS WHEREOF, the parties have executed or otherwise consented to this Amendment as of the date first above written.

COMPANY:

FATE THERAPEUTICS, INC.

By: /s/ J. Scott Wolchko

Name: Scott Wolchko
(print)

Title: COO and CFO

Address: 3535 General Atomics Court
Suite 200
San Diego, CA 92121

AGREED AND APPROVED:

Polaris Venture Partners V, L.P.

By: Polaris Venture Management Co. V, LLC
Its: General Partner

By: /s/ John J Gannon
John J Gannon
Attorney In Fact

Address: 1000 Winter Street, Suite 3350
Waltham, MA 02451

Polaris Venture Partners Founders' Fund V, L.P.
By: Polaris Venture Management Co. V, LLC
Its: General Partner

By: /s/ John J Gannon
John J Gannon
Attorney In Fact

Address: 1000 Winter Street, Suite 3350
Waltham, MA 02451

Polaris Venture Partners Entrepreneurs' Fund V, L.P.
By: Polaris Venture Management Co. V, LLC
Its: General Partner

By: /s/ John J Gannon
John J Gannon
Attorney In Fact

Address: 1000 Winter Street, Suite 3350
Waltham, MA 02451

Polaris Venture Partners Special Founders' Fund V, L.P.
By: Polaris Venture Management Co. V, LLC
Its: General Partner

By: /s/ John J Gannon
John J Gannon
Attorney In Fact

Address: 1000 Winter Street, Suite 3350
Waltham, MA 02451

JUNO THERAPEUTICS, INC.

By: /s/ Zachary D. Hale

Name: Zachary D. Hale
(print)

Title: VP and Associate GC

Address: 307 Westlake Ave N, Ste 300
Seattle, WA 98109

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14(a) AND 15d-14(a) OF THE SECURITIES EXCHANGE ACT, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Christian Weyer, certify that:

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

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

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

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f)) 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;

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

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

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

Date: August 5, 2015

/s/ Christian Weyer
Christian Weyer
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO RULE 13a-14(a) AND 15d-14(a) OF THE SECURITIES EXCHANGE ACT, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, J. Scott Wolchko, certify that:

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

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

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

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f)) 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;

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

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

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

Date: August 5, 2015

/s/ J. Scott Wolchko
J. Scott Wolchko
Chief Financial Officer and Chief Operating Officer
(Principal Financial Officer)

Exhibit 32.1

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

In connection with the quarterly report of Fate Therapeutics, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2015 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Christian Weyer, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

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

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 5, 2015

/s/ Christian Weyer
Christian Weyer
President and Chief Executive Officer

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

Exhibit 32.2

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

In connection with the quarterly report of Fate Therapeutics, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2015, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, J. Scott Wolchko, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

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

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 5, 2015

/s/ J. Scott Wolchko
J. Scott Wolchko
Chief Financial Officer and Chief Operating Officer

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