

**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, 2018

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

(State or other jurisdiction
of incorporation or organization)

65-1311552

(IRS Employer
Identification No.)

3535 General Atomics Court, Suite 200, San Diego, CA

(Address of principal executive offices)

92121

(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, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company)

Smaller reporting company

Emerging growth company

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

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

As of August 3, 2018, 53,419,189 shares of the registrant's common stock, par value \$0.001 per share, were issued and outstanding.

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Item 1. Financial Statements

Fate Therapeutics, Inc.

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

	June 30, 2018 (unaudited)	December 31, 2017 (unaudited)
Assets		
Current assets:		
Cash and cash equivalents	\$ 36,162	\$ 88,952
Short-term investments and related maturity receivables	41,857	11,997
Prepaid expenses and other current assets	2,015	1,647
Total current assets	80,034	102,596
Property and equipment, net	2,894	2,550
Restricted cash	227	122
Other assets	—	24
Total assets	<u>\$ 83,155</u>	<u>\$ 105,292</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 3,510	\$ 1,678
Accrued expenses	8,376	7,254
CIRM award liability	600	—
Current portion of deferred rent	—	12
Current portion of deferred revenue	1,776	2,105
Long-term debt, current portion	2,011	—
Total current liabilities	16,273	11,049
Deferred rent	1,462	1,347
Deferred revenue	—	724
Accrued expenses	360	175
CIRM award liability	400	—
Long-term debt, net of current portion	12,835	14,808
Commitments and contingencies (Note 6)		
Stockholders' equity:		
Preferred stock, \$0.001 par value; authorized shares—5,000,000 at June 30, 2018 and December 31, 2017; 2,819,549 Class A Convertible Preferred shares issued and outstanding at June 30, 2018 and December 31, 2017	3	3
Common stock, \$0.001 par value; authorized shares—150,000,000 at June 30, 2018 and December 31, 2017; issued and outstanding—53,388,420 at June 30, 2018 and 52,648,601 at December 31, 2017	53	53
Additional paid-in capital	304,371	295,934
Accumulated other comprehensive loss	(15)	(3)
Accumulated deficit	(252,587)	(218,798)
Total stockholders' equity	51,825	77,189
Total liabilities and stockholders' equity	<u>\$ 83,155</u>	<u>\$ 105,292</u>

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,	
	2018	2017	2018	2017
	(unaudited)			
Collaboration revenue	\$ 1,027	\$ 1,026	\$ 2,053	\$ 2,053
Operating expenses:				
Research and development	16,816	7,927	28,292	15,893
General and administrative	3,816	2,669	7,420	5,701
Total operating expenses	20,632	10,596	35,712	21,594
Loss from operations	(19,605)	(9,570)	(33,659)	(19,541)
Other income (expense):				
Interest income	376	137	707	248
Interest expense	(425)	(212)	(837)	(478)
Total other expense, net	(49)	(75)	(130)	(230)
Net loss	\$ (19,654)	\$ (9,645)	\$ (33,789)	\$ (19,771)
Other comprehensive loss:				
Unrealized loss on available-for-sale securities, net	(2)	(5)	(12)	(38)
Comprehensive loss	\$ (19,656)	\$ (9,650)	\$ (33,801)	\$ (19,809)
Net loss per common share, basic and diluted	\$ (0.37)	\$ (0.23)	\$ (0.64)	\$ (0.48)
Weighted-average common shares used to compute basic and diluted net loss per share	53,130,518	41,406,367	52,947,926	41,397,398

See accompanying notes.

Fate Therapeutics, Inc.

Condensed Consolidated Statements of Cash Flows
(in thousands)

	Six Months Ended June 30,	
	2018	2017
	(unaudited)	
Operating activities		
Net loss	\$ (33,789)	\$ (19,771)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	567	437
Stock-based compensation	2,867	1,840
Amortization of debt discounts and debt issuance costs	38	43
Amortization of premiums and discounts on investments, net	(212)	(14)
Noncash interest expense	185	138
Deferred rent	71	548
Deferred revenue	(1,053)	(1,053)
Issuance of common stock for license agreement	4,845	—
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(336)	364
Accounts payable and accrued expenses	2,743	1,141
Net cash used in operating activities	(24,074)	(16,327)
Investing activities		
Purchase of property and equipment	(462)	(566)
Purchases of short-term investments	(55,660)	(39,971)
Maturities of short-term investments	26,000	3,500
Net cash used in investing activities	(30,122)	(37,037)
Financing activities		
Issuance of common stock from equity incentive plans, net of issuance costs	781	66
Issuance costs from public offering of common stock	(270)	—
Issuance costs from private placement of common stock	—	(65)
Issuance costs from private placement of preferred stock	—	(128)
Proceeds from CIRM award	1,000	—
Payments on long-term debt	—	(4,055)
Net cash provided (used) by financing activities	1,511	(4,182)
Net change in cash, cash equivalents and restricted cash	(52,685)	(57,546)
Cash, cash equivalents and restricted cash at beginning of the period	89,074	88,731
Cash, cash equivalents and restricted cash at end of the period	\$ 36,389	\$ 31,185

See accompanying notes.

**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 dedicated to the development of programmed cellular immunotherapies for cancer and immune disorders. The Company's cell therapy pipeline is comprised of NK- and T-cell immuno-oncology programs, including off-the-shelf engineered product candidates derived from clonal master induced pluripotent stem cell (iPSC) lines, and immuno-regulatory programs, including product candidates to prevent life-threatening complications in patients undergoing hematopoietic cell transplantation and to promote immune tolerance in patients with autoimmune disease. Its adoptive cell therapy programs are based on the Company's novel *ex vivo* cell programming approach, which it applies to modulate the therapeutic function and direct the fate of immune cells.

As of June 30, 2018, 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.

Public Equity Offering

In December 2017, the Company completed a public offering of common stock in which investors purchased 10,953,750 shares of its common stock at a price of \$4.20 per share under the Company's shelf registration statement. Gross proceeds from the offering were \$46.0 million, and, after giving effect to \$3.0 million of costs related to the offering (of which \$0.3 million was paid during the six months ended June 30, 2018), net proceeds were \$43.0 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 Ltd., incorporated in the United Kingdom, and Tfinity Therapeutics, Inc., incorporated in the United States. To date, the aggregate operations of these subsidiaries have not been significant and all intercompany transactions and balances have been eliminated in consolidation.

Cash, Cash Equivalents and Restricted Cash

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.

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the Condensed Consolidated Balance Sheet that sum to the total of the same such amount shown in the Condensed Consolidated Statements of Cash flows as of June 30, 2018 (in thousands):

	June 30, 2018
Cash and cash equivalents	\$ 36,162
Restricted cash	227
Total cash, cash equivalents, and restricted cash shown in the statement of cash flows	<u>\$ 36,389</u>

Amounts included in restricted cash represent security deposits required to secure the Company's credit card limit and its facilities lease.

Short-Term Investments

Available-for-sale securities are carried at fair value, with the unrealized gains and losses reported in comprehensive income. The amortized cost of available-for-sale debt securities is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization and accretion is included in interest income. Realized gains and losses and declines in value judged to be other-than-temporary, if any, on available-for-sale securities are included in other income or expense. The cost of securities sold is based on the specific identification method. Interest and dividends on securities classified as available-for-sale are included in interest income.

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 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 the 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, 2017, contained in the Company's Annual Report on Form 10-K for the year ended December 31, 2017 filed by the Company with the SEC on March 5, 2018. The results for the three and six months ended June 30, 2018 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 revenue in a manner that depicts the transfer of control of a product or a service to a customer and reflects the amount of the consideration the Company is entitled to receive in exchange for such product or service. In doing so, the Company follows a five-step approach: (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 when (or as) the customer obtains control of the product or service. The Company considers the terms of a contract and all relevant facts and circumstances when applying the revenue recognition standard. The Company applies the revenue recognition standard, including the use of any practical expedients, consistently to contracts with similar characteristics and in similar circumstances.

A customer is a party that has entered into a contract with the Company, where the purpose of the contract is to obtain a product or a service that is an output of the Company's ordinary activities in exchange for consideration. To be considered a contract, (i) the contract must be approved (in writing, orally, or in accordance with other customary business practices), (ii) each party's rights regarding the product or the service to be transferred can be identified, (iii) the payment terms for the product or the service to be transferred can be identified, (iv) the contract must have commercial substance (that is, the risk, timing or amount of future cash flows is expected to change as a result of the contract), and (v) it is probable that the Company will collect substantially all of the consideration to which it is entitled to receive in exchange for the transfer of the product or the service.

A performance obligation is defined as a promise to transfer a product or a service to a customer. The Company identifies each promise to transfer a product or a service (or a bundle of products or services, or a series of products and services that are substantially the same and have the same pattern of transfer) that is distinct. A product or a service is distinct if both (i) the customer can benefit from the product or the service either on its own or together with other resources that are readily available to the customer and (ii) the

Company's promise to transfer the product or the service to the customer is separately identifiable from other promises in the contract. Each distinct promise to transfer a product or a service is a unit of accounting for revenue recognition. If a promise to transfer a product or a service is not separately identifiable from other promises in the contract, such promises should be combined into a single performance obligation.

The transaction price is the amount of consideration the Company is entitled to receive in exchange for the transfer of control of a product or a service to a customer. To determine the transaction price, the Company considers the existence of any significant financing component, the effects of any variable elements, noncash considerations and consideration payable to the customer. If a significant financing component exists, the transaction price is adjusted for the time value of money. If an element of variability exists, the Company must estimate the consideration it expects to receive and uses that amount as the basis for recognizing revenue as the product or the service is transferred to the customer. There are two methods for determining the amount of variable consideration: (i) the expected value method, which is the sum of probability-weighted amounts in a range of possible consideration amounts, and (ii) the most likely amount method, which identifies the single most likely amount in a range of possible consideration amounts.

If a contract has multiple performance obligations, the Company allocates the transaction price to each distinct performance obligation in an amount that reflects the consideration the Company is entitled to receive in exchange for satisfying each distinct performance obligation. For each distinct performance obligation, revenue is recognized when (or as) the Company transfers control of the product or the service applicable to such performance obligation.

In those instances where the Company first receives consideration in advance of satisfying its performance obligation, the Company classifies such consideration as deferred revenue until (or as) the Company satisfies such performance obligation. In those instances where the Company first satisfies its performance obligation prior to its receipt of consideration, the consideration is recorded as accounts receivable.

The Company expenses incremental costs of obtaining a contract as and when incurred if the expected amortization period of the asset that would be recognized is one year or less, or if the amount of the asset is immaterial.

Stock-Based Compensation

Stock-based compensation expense represents the cost of the grant date fair value of employee stock option and restricted stock unit 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 fair value of restricted stock units is based on the closing price of the Company's common stock as reported on The NASDAQ Global Market on the date of grant.

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.

Convertible Preferred Stock

The Company applies the relevant accounting standards to distinguish liabilities from equity when assessing the classification and measurement of preferred stock. Preferred shares subject to mandatory redemptions are considered liabilities and measured at fair value. Conditionally redeemable preferred shares are considered temporary equity. All other preferred shares are considered as stockholders' equity.

The Company applies the relevant accounting standards for derivatives and hedging (in addition to distinguishing liabilities from equity) when accounting for hybrid contracts that contain conversion options. Conversion options must be bifurcated from the host instruments and accounted for as free standing financial instruments according to certain criteria. These criteria include circumstances when (i) the economic characteristics and risks of the embedded derivative instruments are not clearly and closely related to the economic characteristics and risks of the host contract, (ii) the hybrid instrument that embodies both the embedded derivative instrument and the host contract is not re-measured at fair value under otherwise applicable accounting principles with changes in fair value reported in earnings as they occurred, and (iii) a separate instrument with the same terms as the embedded derivative instrument would be considered a derivative instrument. The derivative is subsequently measured at fair value at each reporting date, with the changes in fair value reported in earnings.

Comprehensive Loss

Comprehensive loss is defined as a change in equity during a period from transactions and other events and circumstances from non-owner sources. Other comprehensive income includes unrealized gains and losses on available-for-sale securities, which was the only difference between net loss and comprehensive loss for the applicable periods.

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. Dilutive common stock equivalents for the periods presented include convertible preferred stock, warrants for the purchase of common stock, and common stock options and restricted stock units 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, 2018, the Company realized a net loss of \$19.7 million and \$33.8 million, respectively. Shares of potentially dilutive securities totaled 21.6 million for the three and six months ended June 30, 2018, including 14.1 million shares associated with a hypothetical conversion of all outstanding shares of the Company's Class A convertible preferred stock, and an aggregate of 7.4 million shares of common stock issuable upon the exercise of outstanding stock options and the settlement of outstanding restricted stock units.

For the three and six months ended June 30, 2017, the Company realized a net loss of \$9.6 million and \$19.8 million, respectively. Shares of potentially dilutive securities totaled 20.3 million for the three and six months ended June 30, 2017, including 14.1 million shares associated with a hypothetical conversion of all outstanding shares of the Company's Class A convertible preferred stock, and an aggregate of 6.1 million shares of common stock issuable upon the exercise of outstanding stock options and the settlement of outstanding restricted stock units.

Going Concern Assessment

The Company has assessed its ability to continue as a going concern for a period of one year from the date of the issuance of these financial statements. Substantial doubt about an entity's ability to continue as a going concern exists when relevant conditions and events, considered in the aggregate, indicate that it is probable that the entity will be unable to meet its obligations as they become due within one year from the financial statement issuance date. The Company determined that there are no conditions or events that raise substantial doubt about its ability to continue as a going concern as of the date of the issuance of these financial statements.

Recent Accounting Pronouncements

In June 2018, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2018-07 (ASU 2018-07). ASU 2018-07 expands the scope of Accounting Standards Codification (ASC) 718, *Compensation- Stock Compensation*, to include share-based payment transactions for acquiring goods and services from nonemployees. Consistent with the accounting requirement for employee share-based payment awards, nonemployee share-based payment awards within the scope of ASC 718 will be measured at the grant-date fair value of the equity instruments that an entity is obligated to issue when the good has been delivered or the service has been rendered. ASU 2018-07 is effective for fiscal years beginning after December 15, 2018. The Company believes that the adoption of this guidance will not have a material impact on the Company's Consolidated Financial Statements.

In March 2018, the FASB issued ASU 2018-05. ASU 2018-05 amends income tax related SEC paragraphs presented pursuant to SEC Staff Accounting Bulletin No. 118 (SAB 118). The SEC issued SAB 118 during December 2017 to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Cuts and Jobs Act of 2017 (the Tax Cuts and Jobs Act), which was enacted in December 2017. Amounts recorded by the Company pursuant to ASU 2018-05 in connection with certain deferred tax assets and liabilities are based on reasonable estimates, and additional work is required to complete the accounting. Any subsequent adjustment to these estimated amounts will be recorded to current tax expense in the period when the accounting is complete.

In November 2016, the FASB issued ASU 2016-18, which requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. ASU 2016-18 is effective for fiscal years beginning after December 15, 2017. The Company adopted the update retrospectively to each period presented. The adoption of this guidance did not have a material impact on the Company's Consolidated Financial Statements.

In February 2016, the FASB issued ASU 2016-02, *Leases*, which requires a lessee to recognize a lease liability and a right-of-use asset for all leases with lease terms of more than 12 months. This guidance is effective for annual reporting periods beginning after December 15, 2018, including interim periods within those years, and early adoption is permitted. Companies may adopt this guidance using a modified retrospective approach for leases that exist or are entered into after the beginning of the earliest comparative period in the financial statements. In July 2018, the FASB issued ASU 2018-11, which provides the option of an additional transition method that allows entities to initially apply the new lease guidance at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. While the Company is continuing to evaluate its significant lease arrangement to assess the potential impact of the adoption of the new lease guidance on its consolidated financial statements, it anticipates that the adoption will result in an increase in the assets and liabilities recorded on its consolidated balance sheet.

In May 2014, the FASB issued ASU 2014-09 (Topic 606), 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 and reflects the amount of the consideration 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 when (or as) the customer obtains control of the product or service. For public business entities, ASU 2014-09 is effective beginning in the first quarter of 2018 using one of two prescribed transition methods: retrospectively to each prior reporting period presented (full retrospective method), or retrospectively with the cumulative effect of initially applying the guidance recognized at the date of initial application (the cumulative catch-up transition method). The Company adopted ASU 2014-09 in the first quarter of 2018 using the full retrospective method. The Company has evaluated the effect that the updated standard had on its internal processes, financial statements and related disclosures, and has determined that the adoption did not have a material impact on the Company's historical Consolidated Financial Statements.

2. Collaboration and License Agreements

Juno Collaboration and License Agreement

On May 4, 2015, the Company entered into a strategic research collaboration and license agreement (the Agreement) with Juno Therapeutics, Inc. (Juno) (acquired by Celgene Corporation) to screen for and identify small molecules that enhance the therapeutic properties of Juno's genetically-engineered T-cell immunotherapies. Under the Agreement, the Company is primarily responsible for screening and identifying small molecule modulators of immunological cells, while Juno is primarily responsible for the development and commercialization of engineered T-cell immunotherapies incorporating the Company's modulators. The Company 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 by Juno of designated tumor-associated antigen targets which selection may be made by Juno on a target-by-target basis. The Company 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 tumor-associated antigen targets selected by Juno. The Agreement will end on the date that no further payments are due under the Agreement, unless terminated earlier pursuant to the terms of the Agreement.

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. The Company determined that this common stock purchase represented a premium of \$3.40 per share, or \$3.4 million in aggregate (Equity Premium), and the remaining \$4.6 million was recorded as issuance of common stock in shareholders' equity.

Additionally, Juno agreed to fund all of the Company's collaboration research activities for an initial 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) 606, *Revenue from Contracts with Customers* (ASC 606), to evaluate the appropriate accounting for the Agreement. In accordance with this guidance, the Company identified its performance obligations, including its grant of an exclusive worldwide license to certain of its intellectual property subject to certain conditions, its conduct of research services and its participation in a joint research committee. The Company determined that its grant of an exclusive worldwide license to certain of its intellectual property subject to certain conditions under the Agreement was not distinct from other performance obligations because such grant is dependent on the conduct and results of the research services. As a result, the exclusive

worldwide license is classified as symbolic intellectual property under ASC 606. Additionally, the Company determined that its conduct of research services under the Agreement was not distinct from other performance obligations because such conduct is dependent on the direction of the joint research committee. Accordingly, the Company determined that all performance obligations should be accounted for as one combined performance obligation since no individual performance obligation is distinct, and that the combined performance obligation is transferred ratably over the expected term of conduct of the research services, which is four years.

The Company also determined that the transaction price under the Agreement equals \$16.4 million, consisting of the non-refundable upfront payment of \$5.0 million, the \$3.4 million Equity Premium and \$8.0 million of estimated payments for the conduct of research services during the initial four-year term.

The Company assessed whether, in connection with the non-refundable upfront payment of \$5.0 million and the \$3.4 million Equity Premium, a significant financing component exists under the Agreement. Such assessment evaluated whether: (i) a substantial amount of the consideration is variable, (ii) the amount, or timing of payment, of the consideration would have varied based on the occurrence or non-occurrence of future events that are not substantially within the control of the Company or Juno, and (iii) the timing of the transfer of the performance obligations is at the discretion of Juno. Based on its assessment, the Company concluded that there was not a significant financing component.

The Company assessed the effects of any variable elements under the Agreement. Such assessment evaluated, among other things, the likelihood of receiving (i) various clinical, regulatory and commercial milestone payments and (ii) royalties on net sales of any Juno therapies that use or incorporate the Company's small molecule modulators. Based on its assessment, the Company concluded that based on the likelihood of these variable components occurring that there was not a significant variable element included in the transaction price.

As such, the non-refundable upfront payment of \$5.0 million and the \$3.4 million Equity Premium were recorded as deferred revenue, and are being recognized as revenue ratably over four years.

Under the Agreement, Juno has agreed to pay the Company a selection fee for each tumor-associated antigen target selected by Juno and certain bonus selection fees based on the aggregate number of tumor-associated antigen targets selected by Juno. In accordance with ASC 606, the Company has not assigned a transaction price to any potential selection fees. Additionally, since the selection fees are closely aligned with the previously discussed combined performance obligation, any such future consideration in connection with selection fees will be recognized in conjunction with the combined performance obligation.

Under the Agreement, in connection with each Juno therapy 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 therapy upon the achievement of various clinical, regulatory and commercial milestones. Additionally, in connection with the third Juno therapy and the fifth Juno therapy 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 therapy upon the achievement of various clinical, regulatory, and commercial milestones. In accordance with ASC 606, the Company has not assigned a transaction price to any of these potential milestone payments given the substantial uncertainty related to their achievement. Additionally, since any performance obligation would be complete at the time of milestone achievement, any future consideration in connection with milestone payments will be recognized on the date of achievement.

Under the Agreement, beginning on the date of the first commercial sale (in each country) for each Juno therapy that uses or incorporates the Company's small molecule modulators, and continuing until the later of: (i) the expiration of the 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 therapy, Juno has agreed to pay the Company royalties in the low single-digits on net sales of each Juno therapy that uses or incorporates the Company's small molecule modulators. In accordance with ASC 606, the Company has not assigned a transaction price to any of these potential royalty payments. Additionally, since any performance obligation would be complete at the time of potential sale of each Juno therapy that uses or incorporates the Company's small molecule modulators, any future consideration in connection with royalty payments will be recognized on the date of sale.

Total revenue recognized under the Agreement for the three and six months ended June 30, 2018 was \$1.0 million and \$2.1 million, respectively. Total revenue recognized under the Agreement for the three and six months ended June 30, 2017 was \$1.0 million and \$2.1 million, respectively. As of June 30, 2018, aggregate deferred revenue related to the Agreement was \$1.8 million.

In January 2018, Juno announced its entry into a merger agreement with Celgene Corporation (Celgene), pursuant to which Celgene agreed to acquire all of the outstanding shares of common stock of Juno through a tender offer. On March 6, 2018, Celgene announced that it had completed the acquisition of Juno. This acquisition event did not affect the terms of the Agreement. The Agreement is assignable by Juno to its affiliates or in connection with its acquisition by Celgene.

Memorial Sloan Kettering Cancer Center License Agreement

On May 15, 2018, the Company entered into an Amended and Restated Exclusive License Agreement (the Amended MSK License) with Memorial Sloan Kettering Cancer Center (MSK). The Amended MSK License amends and restates the Exclusive License Agreement entered into between the Company and MSK on August 19, 2016 (the Original MSK License).

Pursuant to the Amended MSK License, MSK granted to the Company additional licenses to certain patents and patent applications relating to new chimeric antigen receptor (CAR) constructs and off-the-shelf CAR T cells, in each case to research, develop, and commercialize licensed products in the field of all human therapeutic uses worldwide. MSK also returned to the Company its entire interest in Tfinity Therapeutics, Inc. (Tfinity), a majority-owned subsidiary of the Company in which MSK owned a minority interest pursuant to the Original MSK License. As a result, Tfinity became a wholly-owned subsidiary of the Company. The Company continues to maintain exclusive licenses to certain patents and patent applications relating to off-the-shelf T-cell immunotherapies, including CAR T cells manufactured from induced pluripotent stem cells, that were granted to the Company by MSK under the Original MSK License.

The Company issued 500,000 shares of the Company's common stock to MSK (the MSK Shares) pursuant to the Amended MSK License. The MSK Shares are being issued pursuant to an exemption from registration under the Securities Act of 1933, as amended (the Securities Act), in reliance on Section 4(a)(2) of the Securities Act regarding transactions by an issuer not involving a public offering. Pursuant to the Amended MSK License, the Company is obligated to register the MSK Shares for resale within 18 months of the effective date of the agreement.

Additionally, the Company paid an upfront fee of \$0.5 million and is obligated to pay a royalty to MSK on net sales of licensed products and milestone payments upon the achievement of specified clinical and regulatory milestones. The Company is also obligated to pay MSK a percentage of certain sublicense income received by the Company.

Under the terms of the Amended MSK License, in the event a licensed product achieves a specified clinical milestone, MSK is then eligible to receive additional milestone payments, where such payments are owed to MSK contingent upon certain increases in the price of the Company's common stock relative to the price of the common stock as of May 15, 2018, following the date of achievement of such clinical milestone. Given the high degree of uncertainty surrounding the achievement of clinical milestones and the requisite increase in the price of the Company's common stock, the Company has not recorded a liability for such payments.

During the three and six months ended June 30, 2018, the Company recognized an aggregate of \$5.3 million of research and development expenses, consisting of the \$0.5 million upfront cash payment to MSK and the issuance of the MSK Shares, valued at \$4.8 million, associated with the Amended MSK License.

3. California Institute for Regenerative Medicine Award

On February 22, 2018, the California Institute for Regenerative Medicine (CIRM) announced an award to the Company for \$4.0 million to advance the Company's FT516 product candidate into a first-in-human clinical trial (the Award). The Award agreement was fully executed in April 2018. Pursuant to the terms of the Award, the Company will receive five disbursements in varying amounts totaling \$4.0 million, with one disbursement receivable upon the execution of the Award, and four disbursements receivable upon the completion of certain milestones throughout the project period of the Award, which is estimated to be from April 1, 2018 to June 30, 2019 (the Project Period). In April 2018, the Company received the first disbursement under the Award totaling \$1.0 million. The Award is subject to certain co-funding requirements by the Company, and the Company is required to provide CIRM progress and financial update reports throughout the Project Period.

Following the conclusion of the Project Period, the Company, in its sole discretion, has the option to treat the Award either as a loan or as a grant. In the event the Company elects to treat the Award as a loan, the Company will be obligated to repay i) 60%, ii) 80%, iii) 100% or iv) 100% plus interest at 7% plus LIBOR, of the total Award to CIRM, where such repayment rate is dependent upon the phase of clinical development of FT516 at the time of the Company's election. If the Company does not elect to treat the Award as a loan within 10 years of the date of the Award, the Award will be considered a grant and the Company will be obligated to pay to CIRM a royalty on commercial sales of FT516 until such royalty payments equal nine times the total amount awarded to the Company under the Award.

Since the Company may, at its election, repay some or all of the Award, the Company accounts for the Award as a liability until the time of election. In April 2018, the Company received the first disbursement under the Award in the amount of \$1.0 million, which amount is recorded as a CIRM Liability on the accompanying consolidated balance sheets and classified as current or non-current based on the potential amount payable within twelve months of the current balance sheet.

4. Short-term Investments

The Company invests portions of excess cash in United States treasuries with maturities ranging from three to twelve months from the purchase date. These debt securities are classified as short-term investments in the accompanying consolidated balance sheets and are accounted for as available-for-sale securities.

The following table summarizes the Company's short-term investments accounted for as available-for-sale securities as of June 30, 2018, and December 31, 2017 (in thousands):

	<u>Maturity (in years)</u>	<u>Amortized Cost</u>	<u>Unrealized Losses</u>	<u>Unrealized Gains</u>	<u>Estimated Fair Value</u>
June 30, 2018					
U.S. Treasury debt securities	1 or less	41,872	(15)	—	41,857
Total		<u>\$ 41,872</u>	<u>\$ (15)</u>	<u>\$ —</u>	<u>\$ 41,857</u>
December 31, 2017					
U.S. Treasury debt securities	1 or less	12,000	(3)	—	11,997
Total		<u>\$ 12,000</u>	<u>\$ (3)</u>	<u>\$ —</u>	<u>\$ 11,997</u>

The Company reviewed its investment holdings as of June 30, 2018 and determined that the unrealized losses were not other-than-temporary unrealized losses because the Company does not intend to sell the underlying securities prior to maturity and it is not more likely than not that the Company will be required to sell these securities before the recovery of their amortized cost basis. During each of the three and six months ended June 30, 2018 and 2017, the Company did not recognize any impairment or gains or losses on sales of available-for-sale securities.

5. 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 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 and short-term investments. Cash equivalents consisted of money market funds and short-term investments consisted of U.S. treasuries. The following table presents the Company's assets which were measured at fair value on a recurring basis as of June 30, 2018 and December 31, 2017 (in thousands):

	Total	Fair Value Measurements at Reporting Date Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
As of June 30, 2018:				
Cash equivalents	\$ 36,162	\$ 36,162	\$ —	\$ —
U.S. Treasury debt securities	41,857	41,857	—	—
Total assets	<u>\$ 78,019</u>	<u>\$ 78,019</u>	<u>\$ —</u>	<u>\$ —</u>
As of December 31, 2017:				
Cash equivalents	\$ 88,952	\$ 88,952	\$ —	\$ —
U.S. Treasury debt securities	11,997	11,997	—	—
Total assets	<u>\$ 100,949</u>	<u>\$ 100,949</u>	<u>\$ —</u>	<u>\$ —</u>

The Company obtains pricing information from quoted market prices from our investment manager and generally determines the fair value of investment securities using standard observable inputs, including reported trades, broker/dealer quotes, and bids and/or offers.

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, 2018 and December 31, 2017, the Company had no material financial liabilities measured at fair value on a recurring basis.

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

Accrued Expenses

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

	June 30, 2018	December 31, 2017
Accrued payroll and other employee benefits	\$ 1,324	\$ 1,761
Accrued clinical trial related costs	4,068	3,323
Accrued other	2,984	2,170
Current accrued expenses	<u>\$ 8,376</u>	<u>\$ 7,254</u>

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, 2018	December 31, 2017
Long-term debt	\$ 15,000	\$ 15,000
Less debt issuance costs and discount, net of current portion	(81)	(192)
Long-term debt, net of long-term portion of debt issuance costs and discount	14,919	14,808
Less current portion of long-term debt	(2,084)	—
Long-term debt, net	\$ 12,835	\$ 14,808
Current portion of long-term debt	\$ 2,084	\$ —
Less current portion of debt issuance costs and discount	(73)	—
Current portion of long-term debt, net	\$ 2,011	\$ —

SVB Loan Amendment

On July 14, 2017 (the First Amendment Effective Date), the Company entered into the First Amendment (the SVB Loan Amendment) to the Amended and Restated Loan and Security Agreement (the Restated LSA) between the Company and Silicon Valley Bank (the Bank) dated July 30, 2014. The SVB Loan Amendment amends the Restated LSA.

Pursuant to the SVB Loan Amendment, the Bank extended an additional term loan to the Company on July 14, 2017 in the principal amount of \$15.0 million (the 2017 Term Loan), a portion of which was applied to repay in full the Company's existing outstanding debt with the Bank under the Restated LSA, which included outstanding principal, accrued interest, and final payment fees. Following such repayment in full of the Company's existing outstanding debt with the Bank under the Restated LSA, cash proceeds to the Company from the remaining portion of the 2017 Term Loan were \$7.5 million.

The 2017 Term Loan matures on January 1, 2022 (the Term Loan Maturity Date) and bears interest at a floating per annum rate equal to the greater of (i) 3.50% above the Prime Rate (as defined in the SVB Loan Amendment) or (ii) 7.25%; provided, however, that in no event shall such interest rate exceed 8.25%. Interest is payable on a monthly basis on the first day of each month. The interest rate as of June 30, 2018 was 8.25%.

From August 1, 2017 through January 1, 2019 (the Interest-only Period), the Company is required to make monthly payments of interest only. Thereafter, the Company is required to repay the principal, plus monthly payments of accrued interest, in 36 equal monthly installments based on a 36-month amortization schedule. Notwithstanding the foregoing, subject to the achievement of a product development milestone by the Company before the expiration of the above-described Interest-only Period, at the Company's election (i) the Interest-only Period shall be extended from January 1, 2019 through and including to July 1, 2019 and (ii) the Company shall thereafter repay the principal, plus monthly payments of accrued interest, in 30 equal monthly installments based on a 30-month amortization schedule.

The Company's final payment, due on the Term Loan Maturity Date, shall include all outstanding principal and accrued and unpaid interest under the 2017 Term Loan, plus a 7.5%, or \$1.1 million, final payment fee. This final payment fee is accrued as interest expense over the term of the 2017 Term Loan and recorded in accrued expenses.

In connection with the SVB Loan Amendment, the Company issued to the Bank on the First Amendment Effective Date a fully exercisable warrant (the 2017 Warrant) to purchase up to an aggregate of 91,463 shares of the Company's common stock, subject to adjustment, at an exercise price equal to \$3.28 per share. The 2017 Warrant expires in July 2024. The aggregate fair value of the 2017 Warrant was determined to be \$0.2 million using the Black-Scholes option pricing model and was recorded as a debt discount on the 2017 Term Loan. This debt discount is amortized to interest expense over the term of the 2017 Term Loan using the effective interest method. The Company determined the effective interest rate of the 2017 Term Loan to be 10.2% as of the First Amendment Effective Date.

The Company determined the repayment of the Restated LSA and issuance of the 2017 Term Loan was a debt extinguishment, and accounted for the 2017 Term Loan at fair value as of the First Amendment Effective Date, accordingly. During the third quarter of 2017, the Company recorded a loss on debt extinguishment of \$0.1 million, which was primarily related to the unaccrued amount of the final payment fee under the Restated LSA that was paid in connection with the 2017 Term Loan.

The Company is required under its loan agreement with the Bank to maintain its deposit and securities accounts with the Bank and to comply with various operating covenants and default clauses. A breach of any of these covenants or clauses could result in a default under the agreement, which would cause all of the outstanding indebtedness under the facility to become immediately due and payable. The Company is in compliance with all such covenants and clauses.

For the three and six months ended June 30, 2018, the Company recorded \$0.4 million and \$0.8 million, respectively, in aggregate interest expense related to the 2017 Term Loan.

Restated LSA

On July 30, 2014, the Company entered into the Restated LSA with the Bank, collateralized by substantially all of the Company's assets, excluding certain intellectual property. 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, 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 were scheduled to mature on January 1, 2018 and June 1, 2018, respectively.

The Company was 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. These final payment fees were accrued as interest expense over the terms of the loans and recorded in accrued expenses.

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 2014 Warrants) at an exercise price of \$4.08 per share. During March 2018, a portion of the 2014 Warrants were exercised in exchange for 34,149 shares of the Company's common stock in a cashless transaction. As of June 30, 2018, warrants to purchase 49,020 shares of the Company's common stock remain outstanding subject to the 2014 Warrants. The 2014 Warrants expire in December 2021.

For the three and six months ended June 30, 2017, the Company recorded \$0.2 million and \$0.5 million, respectively, in aggregate interest expense related to the Term A and Term B Loans. During the three and six months ended June 30, 2017, the Company made aggregate principal payments totaling \$2.0 million and \$4.1 million, respectively, on 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 a prior debt agreement between the Company and the Bank in 2009 remain outstanding as of June 30, 2018, with such warrants to purchase 5,305 and 30,769 shares of the Company's common stock having expiration dates in January 2019 and August 2021, respectively.

Facility Leases

The Company leases certain office and laboratory space under a non-cancelable operating lease. In May 2018, the Company amended the operating lease, extending the term of the lease through approximately 2028 and agreeing to lease additional space comprising approximately 24,000 square feet in the same building as its existing space for a total occupancy of approximately 72,000 square feet under the lease. With respect to the construction of the additional space, the Company received a \$1.9 million tenant improvement allowance from its landlord and accounts for such costs as property and equipment with an offset to deferred rent as incurred. Costs under the tenant improvement allowance will be paid directly by the landlord. As of June 30, 2018, the balance of the tenant improvement allowance remains \$1.9 million.

The lease is subject to additional charges for common area maintenance and other costs. In connection with the lease, the Company has a cash-collateralized irrevocable standby letter of credit in the amount of \$0.2 million. As of June 30, 2018, future minimum payments, assuming no early termination, under the operating lease are \$41.1 million. The Company maintains the right to terminate the lease on the eighty-second (82nd) month following occupancy of the additional space, subject to the Company's delivery to the landlord of twelve months' prior written notice and an early termination payment of \$2.5 million.

In January 2015, the Company entered into a sublease for additional laboratory space. The sublease was accounted for as an operating lease and expired in September 2017. No future payments remain under the sublease.

7. Convertible Preferred Stock and Stockholders' Equity

Convertible Preferred Stock

In November 2016, the Company completed a private placement of stock in which investors, certain of which are affiliated with the directors and officers of the Company, purchased convertible preferred stock and common stock of the Company (the November 2016 Placement). The Company issued 2,819,549 shares of non-voting Class A Convertible Preferred Stock (the Class A Preferred) at \$13.30 per share, each of which is convertible into five shares of common stock upon certain conditions defined in the Certificate of Designation of Preferences, Rights and Limitations of the Class A Preferred filed with the Delaware Secretary of State on November 22, 2016 (the CoD). The Class A Preferred were purchased exclusively by entities affiliated with Redmile Group, LLC (collectively, Redmile). The terms of the CoD prohibited Redmile from converting the Class A Preferred into shares of the Company's common stock if, as a result of conversion, Redmile, together with its affiliates, would own more than 9.99% of the Company's common stock then issued and outstanding (the Redmile Percentage Limitation), which percentage could change at Redmile's election upon 61 days' notice to the Company to i) any other number less than or equal to 19.99% or (ii) subject to approval of the Company's stockholders to the extent required in accordance with the NASDAQ Global Market rules, any number in excess of 19.99%. On May 2, 2017, the Company's stockholders approved the issuance of up to an aggregate of 14,097,745 shares of common stock upon the conversion of the outstanding shares of Class A Preferred. As a result, Redmile has the right to increase the Redmile Percentage Limitation to any percentage in excess of 19.99% at its election. The Company also issued 7,236,837 shares of common stock at \$2.66 per share as part of the November 2016 Placement. Gross proceeds from the November 2016 Placement were \$56.7 million, and after giving effect to costs related to placement, net proceeds were \$54.9 million.

The rights of the Class A Preferred issued in November 2016 are set forth in the CoD. The Class A Preferred are non-voting shares and have a stated par value of \$0.001 per share and are convertible into five shares of the Company's common stock at a conversion price of \$2.66 per share, which was the fair value of the Company's common stock on the date of issuance. Holders of the Class A Preferred have the same dividend rights as holders of the Company's common stock. Additionally, the liquidation preferences of the Class A Preferred are *pari passu* among holders of the Company's common stock and holders of the Class A Preferred, pro rata based on the number of shares held by each such holder (treated for this purpose as if the Class A Preferred had been converted to common stock).

The Company evaluated the Class A Preferred for liability or equity classification under ASC 480, *Distinguishing Liabilities from Equity*, and determined that equity treatment was appropriate because the Class A Preferred did not meet the definition of the liability instruments defined thereunder for convertible instruments. Specifically, the Class A Preferred are not mandatorily redeemable and do not embody an obligation to buy back the shares outside of the Company's control in a manner that could require the transfer of assets. Additionally, the Company determined that the Class A Preferred would be recorded as permanent equity, not temporary equity, based on the guidance of ASC 480 given that they are not redeemable for cash or other assets (i) on a fixed or determinable date, (ii) at the option of the holder, and (iii) upon the occurrence of an event that is not solely within control of the Company.

The Company also evaluated the Class A Preferred in accordance with the provisions of ASC 815, *Derivatives and Hedging*, including the consideration of embedded derivatives requiring bifurcation from the equity host. Based on this assessment, the Company determined that the conversion option is clearly and closely related to the equity host, and thus, bifurcation is not required.

The issuance of convertible preferred stock could generate a beneficial conversion feature (BCF), which arises when a debt or equity security is issued with an embedded conversion option that is beneficial to the investor (or in-the-money) at inception because the conversion option has an effective strike price that is less than the market price of the underlying stock on the commitment date. The Class A Preferred have an effective conversion price of \$2.66 per common share, which was equal to the market price of the Company's stock on the commitment date. Therefore, no BCF was present.

The Company also entered into a registration rights agreement (the Registration Rights Agreement) with certain of the purchasers in the November 2016 Placement, excluding those purchasers affiliated with the Company's directors and officers, requiring the Company to register for the resale of the relevant shares. The Company registered all of the relevant shares issued in the November 2016 Placement for resale on a Form S-3 filed with the SEC, as required under the Registration Rights Agreement, and the registration statement was declared effective in January 2017.

Stock Options and Restricted Stock Units

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

	Number of Options	Weighted- Average Price
Balance at December 31, 2017	5,458,043	\$ 3.52
Granted	2,485,420	6.83
Canceled	(564,284)	4.69
Exercised	(205,670)	3.82
Balance at June 30, 2018	<u>7,173,509</u>	<u>\$ 4.56</u>

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

	Number of Restricted Stock Units	Weighted- Average Grant Date Fair Value per Share
Balance at December 31, 2017	212,625	\$ 4.89
Granted	—	—
Canceled	(24,000)	\$ 4.89
Vested	—	—
Balance at June 30, 2018	<u>188,625</u>	<u>\$ 4.89</u>

In October 2017, 225,125 shares of common stock underlying restricted stock units vested and were issued to certain employees.

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Research and development	\$ 853	\$ 580	\$ 1,659	\$ 1,149
General and administrative	632	393	1,208	691
	<u>\$ 1,485</u>	<u>\$ 973</u>	<u>\$ 2,867</u>	<u>\$ 1,840</u>

As of June 30, 2018, the outstanding options included 73,600 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, 2018 was \$0.1 million.

As of June 30, 2018, the unrecognized compensation cost related to outstanding options (excluding those with performance-based conditions determined not to be probable) was \$13.2 million and is expected to be recognized as expense over a weighted average period of approximately 3.1 years.

As of June 30, 2018, the unrecognized compensation cost related to restricted stock units was \$0.6 million which is expected to be recognized as expense over approximately 1.3 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,	
	2018	2017
Risk-free interest rate	2.4%	2.0%
Expected volatility	79.0%	90.4%
Expected term (in years)	6.0	5.9
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,	
	2018	2017
Risk-free interest rate	2.7%	2.0%
Expected volatility	79.9%	90.9%
Remaining contractual term (in years)	8.1	8.6
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, 2017 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 5, 2018.

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 dedicated to the development of programmed cellular immunotherapies for cancer and immune disorders. We are developing first-in-class cell therapy product candidates based on a simple notion: we believe that better cell therapies start with better cells.

To create better cell therapies, we use an approach that we generally refer to as cell programming. For certain of our product candidates, we use pharmacologic modulators, such as small molecules, to enhance the biological properties and therapeutic function of cells ex vivo before our product candidates are administered to a patient. In other cases, we use human induced pluripotent stem cells (iPSCs) generate a clonal master iPSC line having preferred biological properties and direct the fate of the clonal master iPSC line to create a homogeneous population of our cell therapy product candidate. We believe the use of clonal master iPSC lines may enable the creation of cell therapy product candidates that are well-defined and uniform in composition; that can be reproducibly manufactured at significant scale; and that can be effectively used to treat a large number of patients in an off-the-shelf manner. Utilizing these therapeutic approaches, we program cells of the immune system, including natural killer cells (NK) cells, T cells and CD34⁺ cells, and are advancing a pipeline of programmed cellular immunotherapies in the therapeutic areas of immuno-oncology and immuno-regulation.

We have entered into a research collaboration and license agreement with the Regents of the University of Minnesota to develop off-the-shelf NK cell cancer immunotherapies derived from clonal master iPSC lines. Additionally, we have entered into a research collaboration and license agreement with Memorial Sloan Kettering Cancer Center (Memorial Sloan Kettering) to develop off-the-shelf, engineered T-cell cancer immunotherapies derived from clonal master iPSC lines.

We have also entered into a research collaboration and license agreement with Juno Therapeutics, Inc. (acquired by Celgene Corporation) to identify and apply small molecule modulators to enhance the therapeutic function of genetically-engineered CAR (chimeric antigen receptor) T-cell and TCR (T-cell receptor) immunotherapies.

We were incorporated in Delaware in 2007, and are headquartered in San Diego, CA. Since our inception in 2007, we have devoted substantially all of our resources to our cell programming approach and the research and development of our product candidates, 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 and private sale of common stock, the private placement of preferred stock and convertible notes, commercial bank debt and revenues from collaboration activities and grants.

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 foreseeable future. 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 and planned activities as we:

- conduct our Phase 1/2 clinical trial of ProTmune, and initiate and conduct any additional clinical trials of ProTmune;
- conduct our clinical trials of FATE-NK100, including under investigator-sponsored clinical trial agreements with the University of Minnesota and under our own Investigational New Drug application;

- conduct preclinical research, process development, manufacturing and development activities to support the clinical translation of our first-in-class product candidates derived from master iPSC lines, and conduct first-in-human clinical trials of such product candidates;
- continue our research and development activities, including under our research collaboration agreements;
- continue process development for, and manufacture of, preclinical study and clinical trial materials, including our product candidates;
- maintain, prosecute, protect, expand and enforce 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 continue operating 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 Ltd. (Fate Ltd.), incorporated in the United Kingdom, whose operations have not been material to date. Effective May 2018, Fate Therapeutics, Inc. owns 100% of the voting shares of Tfinity Therapeutics, Inc. (Tfinity) and previously owned the majority of the voting shares of Tfinity and controlled Tfinity for consolidation purposes. To date, Tfinity has not had any material operations. The following information is presented on a consolidated basis to include the accounts of Fate Therapeutics, Inc., Tfinity, and Fate Ltd. 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 strategic research collaboration and license agreement (the Agreement) with Juno Therapeutics, Inc. (Juno) to screen for and identify small molecule modulators that enhance the therapeutic properties of Juno's genetically-engineered T-cell immunotherapies. Pursuant to the terms of 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. Additionally, we have received, and are entitled to receive, minimum annual research payments of \$2.0 million for the conduct of research services during the initial four-year term of the Agreement.

The Company determined that the common stock purchase by Juno represented a premium of \$3.40 per share, or \$3.4 million in aggregate (Equity Premium), and the remaining \$4.6 million was recorded as issuance of common stock in shareholders' equity.

In accordance with Accounting Standards Codification (ASC) 606, *Revenue from Contracts with Customers*, the Company determined that the transaction price under the Agreement equals \$16.4 million, consisting of the non-refundable upfront payment of \$5.0 million, the \$3.4 million Equity Premium and \$8.0 million of estimated payments for the conduct of research services during the initial four-year term. In addition, the Company identified its performance obligations under the Agreement, including its grant of an exclusive worldwide license to certain of its intellectual property subject to certain conditions, its conduct of research services and its participation in a joint research committee. The Company determined that all performance obligations should be accounted for as one combined performance obligation since no individual performance obligation is distinct, and that the combined performance obligation is transferred ratably over the expected term of conduct of the research services, which is four years.

As of June 30, 2018, aggregate deferred revenue related to the Agreement was \$1.8 million.

Research and Development Expenses

Research and development expenses consist of costs associated with the research and development of our product candidates and cell 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, process development, manufacturing, 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, including our product candidates;
- costs incurred to license and maintain intellectual property; 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 cell programming technology, and as we perform research activities under our sponsored research and collaboration agreements, including our agreements with the University of Minnesota, Memorial Sloan Kettering and Juno. Our current planned research and development activities over the next twelve months consist primarily of the following:

- conducting our clinical trials of FATE-NK100, including under investigator-sponsored clinical trial agreements with the University of Minnesota and under our own Investigational New Drug application, to examine its safety and efficacy in various forms of cancer;
- conducting our Phase 1/2 clinical trial of ProTmune, and initiating and conducting any additional clinical trials for ProTmune, to examine its safety and efficacy in adult patients with hematologic malignancies undergoing allogeneic HCT;
- conducting preclinical research, process development, manufacturing and clinical translation activities to investigate the therapeutic potential of our immuno-oncology product candidates, including our off-the-shelf NK- and T-cell cancer immunotherapies derived from clonal master iPSC lines, and initiating and conducting first-in-human clinical trials of such product candidates;
- conducting preclinical activities to investigate the therapeutic potential of our immuno-regulatory product candidates, including a hematopoietic cell therapy for regulating auto-reactive T cells of patients with autoimmune disorders; and
- performing research, preclinical development, process development, manufacturing and clinical translation activities under our sponsored research and collaboration agreements, including our agreements with the University of Minnesota, Memorial Sloan Kettering and 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 ProTmune, FATE-NK100 and our product candidates derived from clonal master iPSC lines. 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.

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)

Other income (expense) consists primarily of interest income earned on cash and cash equivalents, interest income from short-term investments (including the amortization of discounts and premiums), and interest expense.

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, revenues, 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.

With the exception of our revenue recognition policy (as discussed below), the estimates and judgments involved in our accounting policies as described in Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2017 continue to be our critical accounting policies and there have been no material changes to our critical accounting policies during the six months ended June 30, 2018.

Revenue Recognition

During the first quarter of 2018, the Company adopted Accounting Standards Update 2014-09 (ASU 2014-09), Topic 606, which created a single, principle-based revenue recognition model that supersedes and replaces nearly all existing U.S. GAAP revenue recognition guidance. Under ASU 2014-09, entities recognize revenue in a manner that depicts the transfer of goods or services to customers and reflects the amount of the consideration 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 when (or as) the customer obtained control of the product or service. We adopted ASU 2014-09 in the first quarter of 2018 using the full retrospective method. We evaluated the effect that the updated standard had on our internal processes, financial statements and related disclosures, and we determined that the adoption did not have a material impact on our historical Consolidated Financial Statements.

See Note 1 to the Condensed Consolidated Financial Statements for a summary of critical accounting policies and information related to recent accounting pronouncements.

Results of Operations

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

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

	Three Months Ended June 30,		Increase/ (Decrease)
	2018	2017	
Collaboration revenue	\$ 1,027	\$ 1,026	\$ 1
Research and development expense	16,816	7,927	8,889
General and administrative expense	3,816	2,669	1,147
Total other expense, net	49	75	(26)

Revenue. During each of the three months ended June 30, 2018 and 2017, we recognized revenue of \$1.0 million under the Agreement with Juno, which we entered into in May 2015.

Research and development expenses. Research and development expenses were \$16.8 million for the three months ended June 30, 2018, compared to \$7.9 million for the three months ended June 30, 2017. The increase in research and development expenses primarily includes the following changes:

- \$5.4 million increase in intellectual property and licensing expenses primarily associated with entering into the Amended MSK License with Memorial Sloan Kettering Cancer Center in May 2018;
- \$2.1 million increase in third-party professional consultant and service provider expenses relating to the manufacture and clinical development of our product candidates and the conduct of our research activities, including under our research collaboration agreements;
- \$0.8 million increase in employee compensation and benefits expense, including employee stock-based compensation expense; and
- \$0.6 million increase in expenditures for laboratory equipment, materials and supplies relating to the conduct of our clinical trials and research activities and the manufacture of our product candidates.

General and administrative expenses. General and administrative expenses were \$3.8 million for the three months ended June 30, 2018, compared to \$2.7 million for the three months ended June 30, 2017. The increase in general and administrative expenses primarily relates to:

- \$0.5 million increase in employee compensation and benefits expense, including employee stock-based compensation expense; and
- \$0.4 million increase in advisory expenses, including general legal fees and intellectual property-related expenses.

Other expense, net. Other expense, net was approximately \$0.1 million for both the three months ended June 30, 2018 and 2017. Other expense, net for each period consisted primarily of interest expense relating to our term loans with Silicon Valley Bank, interest income earned on cash and cash equivalents, and interest income from short-term investments (including the amortization of discounts and premiums).

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

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

	Six Months Ended June 30,		Increase/ (Decrease)
	2018	2017	
Collaboration revenue	\$ 2,053	\$ 2,053	\$ —
Research and development expense	28,292	15,893	12,399
General and administrative expense	7,420	5,701	1,719
Total other expense, net	130	230	(100)

Revenue. During each of the six months ended June 30, 2018 and 2017, we recognized revenue of \$2.1 million under the Agreement with Juno, which we entered into in May 2015.

Research and development expenses. Research and development expenses were \$28.3 million for the six months ended June 30, 2018, compared to \$15.9 million for the six months ended June 30, 2017. The increase in research and development expenses primarily includes the following changes:

- \$5.3 million increase in intellectual property and licensing expenses primarily associated with entering into the Amended MSK License with Memorial Sloan Kettering Cancer Center in May 2018;
- \$4.0 million increase in third-party professional consultant and service provider expenses relating to the manufacture and clinical development of our product candidates and the conduct of our research activities, including under our research collaboration agreements;
- \$1.6 million increase in employee compensation and benefits expense, including employee stock-based compensation expense; and
- \$1.3 million increase in expenditures for laboratory equipment, materials and supplies relating to the conduct of our clinical trials and research activities and the manufacture of our product candidates.

General and administrative expenses. General and administrative expenses were \$7.4 million for the six months ended June 30, 2018, compared to \$5.7 million for the six months ended June 30, 2017. The increase in general and administrative expenses primarily includes the following changes:

- \$0.9 million increase in employee compensation and benefits expense, including employee stock-based compensation expense; and
- \$0.7 million increase in advisory expenses, including general legal fees, accounting fees and intellectual property-related expenses.

Other expense, net. Other expense, net was \$0.1 million for the six months ended June 30, 2018 and \$0.2 million for the six months ended June 30, 2017. Other expense, net for each period consisted primarily of interest expense relating to our term loans with Silicon Valley Bank, interest income earned on cash and cash equivalents, and interest income from short-term investments (including the amortization of discounts and premiums).

Liquidity and Capital Resources

We have incurred losses and negative cash flows from operations since inception. As of June 30, 2018, we had an accumulated deficit of \$252.6 million and we anticipate that we will continue to incur net losses for the foreseeable future.

Operating Activities

Cash used in operating activities increased from \$16.3 million for the six months ended June 30, 2017 to \$24.1 million for the six months ended June 30, 2018. The primary driver of this change in cash used in operating activities was our increase in net loss.

Agreement with Juno Therapeutics, Inc.

On May 4, 2015, we entered into a strategic research collaboration and license agreement with Juno to screen for and identify small molecule modulators that enhance the therapeutic properties of Juno's genetically-engineered T-cell immunotherapies. 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 collaboration research activities for an initial 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, 2018, we have received a total of \$6.3 million of such research payments.

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 therapy 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 therapy upon the achievement of various clinical, regulatory and commercial milestones. Additionally, in connection with the third Juno therapy and the fifth Juno therapy 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 therapy upon the achievement of various clinical, regulatory, and commercial milestones. As of June 30, 2018, we have not received any selection fees or milestone payments.

Beginning on the date of the first commercial sale (in each country) for each Juno therapy that uses or incorporates our small molecule modulators, and continuing until the later of i) the expiration of the 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 therapy, Juno has agreed to pay us royalties in the low single-digits on net sales of each Juno therapy that uses or incorporates our small molecule modulators. As of June 30, 2018, no royalties have been paid to us.

In January 2018, Juno announced its entry into a merger agreement with Celgene, pursuant to which Celgene agreed to acquire all of the outstanding shares of common stock of Juno through a tender offer. On March 6, 2018, Celgene announced that it had completed the acquisition of Juno. The Agreement is assignable by Juno to its affiliates or in connection with its acquisition by Celgene.

Memorial Sloan Kettering Cancer Center License Agreement

On May 15, 2018, we entered into an Amended and Restated Exclusive License Agreement (the Amended MSK License) with Memorial Sloan Kettering Cancer Center (MSK). The Amended MSK License amends and restates the Exclusive License Agreement entered into between us and MSK on August 19, 2016 (the Original MSK License).

Pursuant to the Amended MSK License, we issued 500,000 shares of our common stock to MSK (the MSK Shares), which shares were valued at \$4.8 million on the date of agreement. We also paid an upfront cash fee of \$0.5 million and are obligated to pay a royalty to MSK on net sales of licensed products and milestone payments upon the achievement of specified clinical and regulatory milestones. We are also obligated to pay MSK a percentage of certain sublicense income received by us.

Under the terms of the Amended MSK License, in the event a licensed product achieves a specified clinical milestone, MSK is then eligible to receive additional milestone payments, where such payments are owed to MSK contingent upon certain increases in the price of our common stock, relative to the price of the common stock as of May 15, 2018, following the date of achievement of such clinical milestone.

Investing Activities

During the six months ended June 30, 2018 and 2017, investing activities used cash of \$30.1 million and \$37.0 million, respectively. During the six months ended June 30, 2018, we purchased \$55.7 million in U.S. Treasuries as short-term investments, offset by \$26.0 million in maturities of these short-term investments. During the six months ended June 30, 2017, we purchased \$40.0 million in U.S. Treasuries as short-term investments, offset by \$3.5 million in maturities of these short-term investments. All other investing activities for the periods presented were attributable to the purchase of property and equipment.

Financing Activities

For the six months ended June 30, 2018, financing activities provided cash of \$1.5 million, which primarily consisted of the \$1.0 million of proceeds from the Award (as defined below) and the issuance of common stock from equity incentive plans pursuant to the exercise of employee stock options.

For the six months ended June 30, 2017, financing activities used cash of \$4.2 million, which primarily consisted of \$4.1 million of principal payments on our term loans outstanding with Silicon Valley Bank.

From our inception through June 30, 2018, we have funded our consolidated operations primarily through the public and private sale of common stock, the private placement of preferred stock and convertible notes, commercial bank debt and revenues from collaboration activities and grants. As of June 30, 2018, we had aggregate cash and cash equivalents and short-term investments of \$78.0 million.

Public Offering of Common Stock

In December 2017, we completed a public offering of common stock in which investors purchased 10,953,750 shares of our common stock at a price of \$4.20 per share under our shelf registration statement. Gross proceeds from the offering were \$46.0 million. After giving effect to \$3.0 million in underwriting discounts, commissions and expenses related to the offering (of which \$0.3 million was paid during the six months ended June 30, 2018), net proceeds were \$43.0 million.

Silicon Valley Bank Debt Facility

On July 30, 2014, we entered into an Amended and Restated Loan and Security Agreement (Restated LSA) with Silicon Valley Bank (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 (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 (Term A Loan) and (ii) subject to the achievement of a specified clinical milestone, additional term loans totaling up to \$10.0 million in the aggregate, which were available until December 31, 2014 (each, Term B Loan). On December 24, 2014, we elected to draw \$10.0 million under the Term B Loan.

On July 14, 2017, the Company and the Bank entered into an amendment (SVB Loan Amendment) of the Restated LSA where the Bank extended an additional term loan to the Company in the principal amount of \$15.0 million (2017 Term Loan), a portion of which was applied to repay in full all amounts previously outstanding under the Restated LSA. Following such repayment in full of the Company's existing outstanding debt with the Bank under the Restated LSA, cash proceeds to the Company from the remaining portion of the Term Loan were \$7.5 million.

The 2017 Term Loan matures on January 1, 2022 (Term Loan Maturity Date). The 2017 Term Loan bears interest at a floating per annum rate equal to the greater of (i) 3.50% above the Prime Rate (as defined in the SVB Loan Amendment) or (ii) 7.25%; provided, however, that in no event shall such interest rate exceed 8.25%. Interest is payable on a monthly basis on the first day of each month. From August 1, 2017 through January 1, 2019 (Interest-only Period), the Company is required to make monthly payments of interest only. Thereafter, the Company is required to repay the principal, plus monthly payments of accrued interest, in 36 equal monthly installments based on a 36-month amortization schedule. Notwithstanding the foregoing, subject to the achievement of a product development milestone by the Company before the expiration of the above-described Interest-only Period, (i) the Interest-only Period shall be extended from January 1, 2019 through and including to July 1, 2019 and (ii) the Company shall thereafter repay the principal, plus monthly payments of accrued interest, in 30 equal monthly installments based on a 30-month amortization schedule. The Company's final payment, due on the Term Loan Maturity Date, shall include all outstanding principal and accrued and unpaid interest under the 2017 Term Loan, plus a 7.5% final payment fee.

Subject to certain conditions, including the payment of a prepayment fee in the amount of (x) 3% of the principal amount of the Term Loan for any prepayment made through July 14, 2018 or (y) 1% of the principal amount of the Term Loan for any prepayment made after July 14, 2018 and on or before July 14, 2019, the Company may voluntarily prepay all, but not less than all, of the 2017 Term Loan.

In connection with the SVB Loan Amendment, the Company issued to the Bank on the First Amendment Effective Date a warrant to purchase up to an aggregate of 91,463 shares of the Company's common stock, subject to adjustment, at an exercise price equal to \$3.28 per share.

We are required under the Loan Agreement, as amended by the SVB Loan Amendment, to maintain our deposit and securities accounts with the Bank and to comply with various default clauses and 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 or clauses could result in a default under the Loan Agreement, which could cause all of the outstanding indebtedness under the facility to become immediately due and payable.

Registration Statements on Form S-3

In May 2018, the SEC declared effective a shelf registration statement filed by us in May 2018 (File No. 333-224680). The shelf registration statement allows us to issue certain securities, including shares of our common stock, from time to time. The specific terms of any offering, if any, under the shelf registration statement would be established at the time of such offering. As of June 30, 2018, we are eligible to issue an aggregate of \$150.0 million in securities under this shelf registration statement.

In August 2017, the SEC declared effective a shelf registration statement filed by us in August 2017 (File No. 333-219987). The shelf registration statement allows us to issue certain securities, including shares of our common stock, from time to time. The specific terms of any offering, if any, under the shelf registration statement would be established at the time of such offering. As of June 30, 2018, after giving effect to our December 2017 public offering, we are eligible to issue an aggregate of \$54.0 million in securities under this shelf registration statement. In addition, this registration statement registered for resale one million shares of common stock held by Juno, which were issued in May 2015 as described below.

Agreement with Juno Therapeutics, Inc.

Pursuant to the terms of our 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.

California Institute for Regenerative Medicine Award

On February 22, 2018, the California Institute for Regenerative Medicine (CIRM) announced an award to the Company for \$4.0 million to advance the Company's FT516 product candidate into a first-in-human clinical trial (the Award). The Award agreement was fully executed in April 2018. Pursuant to the terms of the Award, the Company will receive five disbursements in varying amounts totaling \$4.0 million, with one disbursement receivable upon the execution of the Award, and four disbursements receivable

upon the completion of certain milestones throughout the project period of the Award, which is estimated to be from April 1, 2018 to June 30, 2019 (the Project Period). The Award is subject to certain co-funding requirements by the Company, and the Company is required to provide progress and financial update reports to CIRM throughout the Project Period.

Following the conclusion of the Project Period, the Company, in its sole discretion, has the option to treat the Award either as a loan or as a grant. In the event the Company elects to treat the Award as a loan, the Company will be obligated to repay i) 60%, ii) 80%, iii) 100% or iv) 100% plus interest at 7% plus LIBOR, of the total Award to CIRM, where such repayment rate is dependent upon the phase of clinical development of FT516 at the time of the Company's election. If the Company does not elect to treat the Award as a loan within 10 years of the date of the Award, the Award will be considered a grant and the Company will be obligated to pay to CIRM a royalty on commercial sales of FT516 until such royalty payments equal nine times the total amount awarded to the Company under the Award.

Since the Company may, at its election, repay some or all of the Award, the Company accounts for the Award as a liability until the time of election. In April 2018, the Company received the first disbursement under the Award in the amount of \$1.0 million, which amount is recorded as a CIRM liability on the accompanying consolidated balance sheets.

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 and short-term investments as of June 30, 2018 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 and short-term investments 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, timing, progress, size, duration, costs and results of our preclinical studies and clinical trials for our product candidates;
- the number and the nature of product candidates that we pursue;
- the cost of process development and manufacturing of our product candidates, including the cost of supplies and materials to support these activities;
- the time, cost and outcome of seeking and obtaining regulatory approvals;

- 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;
- the expansion of our research and development activities, including our need and ability to hire additional employees and procure additional equipment, materials and supplies;
- the establishment and continuation of collaborations and strategic alliances;
- the timing and terms of future in-licensing and out-licensing transactions; and
- the cost of establishing sales, marketing, manufacturing and distribution capabilities for, and the pricing and reimbursement of, 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 2017, we entered into the SVB Loan Amendment with the Bank. Pursuant to the SVB Loan Amendment, the Bank extended a term loan to us in an aggregate principal amount of \$15.0 million. See Note 6 of the Condensed Consolidated Financial Statements for further details.

We lease certain office and laboratory space under a non-cancelable operating lease. In May 2018, we amended the operating lease, extending the term of the lease through approximately 2028 and agreeing to lease additional space comprising approximately 24,000 square feet in the same building as our existing space for a total occupancy of approximately 72,000 square feet under the lease. The lease is subject to additional charges for common area maintenance and other costs. As of June 30, 2018, future minimum payments under the operating lease are \$41.1 million. We maintain the right to terminate the lease on the eighty-second (82nd) month following occupancy of the additional space, subject to our delivery to the landlord of twelve months' prior written notice and an early termination payment of \$2.5 million. See Note 6 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

We are exposed to market risk related to changes in interest rates. As of June 30, 2018, our cash and cash equivalents consisted of cash and money market mutual funds, and our short-term investments consisted of United States treasuries with maturities ranging from three to twelve months from the date of acquisition. 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 and low risk profile 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 under the SVB Loan Amendment bears interest at a floating per annum rate equal to the greater of (i) 3.50% above the Prime Rate (as defined in the SVB Loan Amendment) or (ii) 7.25%, provided that in no event shall such interest rate exceed 8.25%. Given the floor and ceiling of the interest rate, the maximum interest expense increase of a 10% change in market interest rates would be \$0.1 million annually and would not have a material impact on our financial condition and/or results of operations.

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, who serves as both our principal executive officer and our principal 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, the individual serving as our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of June 30, 2018.

Changes in Internal Control over Financial Reporting

During the six months ended June 30, 2018, we implemented certain internal controls over financial reporting in connection with our adoption of ASC Topic 606, *Revenue from Contracts with Customers*. There were no changes in our internal controls over financial reporting that occurred during our latest fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal controls 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

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

We have not completed the clinical trials necessary to support an application for approval to market ProTmune or FATE-NK100. Furthermore, we have not initiated or conducted any clinical trials necessary to support an application for approval to market any of our product candidates created from master pluripotent cell lines or any other product candidates that we may identify. We, or any investigators who initiate or conduct clinical trials of our product candidates, may experience delays in our current or future clinical trials, and we do not know whether we or our investigators will be able to initiate, enroll patients in, or complete, clinical trials of our product candidates on time, if at all. Current and future clinical trials of our product candidates may be delayed, unsuccessful or terminated, or not initiated at all, as a result of many factors, including factors related to:

- difficulties in identifying eligible patients for participation in clinical trials of our product candidates 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 clinical trials of our product candidates, including difficulties relating to patients enrolling in studies of therapeutic product candidates sponsored by our competitors;
- difficulties in obtaining agreement from regulatory authorities on study endpoints, achieving study endpoints, the amount and sufficiency of data, demonstrating efficacy and safety, and completing data analysis in clinical trials for any of our product candidates;
- difficulties in obtaining agreement from regulatory authorities on the preclinical safety and efficacy data, the manufacturing requirements, and the clinical trial design and parameters necessary for an IND application to go into effect to initiate and conduct clinical trials for any of our product candidates, including FT500 and any of our iPSC-derived cell product candidates;
- the occurrence of unexpected safety issues or adverse events in any current or subsequent clinical trial of our product candidates;
- securing and maintaining the support of clinical investigators and investigational sites, including investigators and sites who may conduct clinical trials under an investigator-sponsored IND with our financial support, and obtaining 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, by us, cell processing facilities at our clinical trial sites, or third parties that we contract with, to manufacture certain of our product candidates consistently in accordance with our protocol-specified manufacturing requirements and applicable regulatory requirements;

- our failure, or the failure of investigators, third-party service providers, or clinical trial sites, to ensure the proper and timely conduct of and analysis of data from clinical trials of our product candidates;
- 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 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 to be enrolled 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 there are delays in initiating or conducting any clinical trials 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 initiating, conducting 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 initiation, conduct 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, results of operations, and market price of shares of our common stock.

If we encounter difficulties enrolling patients in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.

We are required to identify and enroll a sufficient number of patients with the disease under investigation for each of our ongoing and planned clinical trials of our product candidates, and we may not be able to identify and enroll a sufficient number of patients, or those with required or desired characteristics and who meet certain criteria, in a timely manner. For example, with respect to the development of ProTmune, there are currently only a limited number of specialized transplant centers that perform hematopoietic stem cell transplants (HSCTs) and among physicians who perform HSCTs, some may not choose to perform these procedures under conditions that fall within our protocols, which would have an adverse effect on our ability to develop ProTmune. Our ability, and the ability of investigators, to enroll patients in clinical trials that we are conducting or supporting, including in our current Phase 1/2 PROTECT clinical trial of ProTmune and our clinical trials of FATE-NK100, certain of which are investigator-sponsored, is affected by factors including:

- the ability to identify, solicit and recruit a sufficient number of patients;
- severity of the disease under investigation;
- design of the trial protocol;
- the relatively small size and nature of the patient populations for the trials in question;
- eligibility criteria for the trials in question;
- perceived risks and benefits of the product candidate under study;
- the availability of competing therapies and clinical trials;
- efforts to facilitate timely enrollment in clinical trials;
- the availability of time and resources at the limited number of institutions at which our clinical trials are or will be conducted;
- the availability of cells suitable for the manufacture of our clinical product candidates from eligible and qualified donors;
- the ability to monitor patients adequately during and after treatment; and
- the proximity and availability of clinical trial sites for prospective patients.

If we have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay or terminate ongoing or planned clinical trials, either of which would have an adverse effect on our business, prospects, financial condition, results of operations, and market price of shares of our common stock.

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

We are currently advancing ProTmune and FATE-NK100 through clinical development, and conducting preclinical research and development activities in our other programs. Drug development is expensive, and we expect our research and development expenses to increase substantially in connection with our ongoing activities, particularly as we advance our current product candidates in clinical trials and seek to initiate clinical development for additional product candidates.

As of June 30, 2018, our cash and cash equivalents and short-term investments were \$78.0 million. We intend to use our cash and cash equivalents to fund the advancement of ProTmune, FATE-NK100, our iPSC-derived cell product candidates and our ongoing preclinical, discovery and research programs, and for working capital and general corporate purposes. However, our operating plan may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings, government or other third-party funding, marketing and distribution arrangements and other collaborations, strategic and licensing arrangements or a combination of these approaches. In any event, we will require additional capital to obtain regulatory approval for, and to commercialize, ProTmune, FATE-NK100 or any other product candidates we may identify and develop. Even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital if market conditions are favorable or if we have specific strategic considerations. Our future capital requirements will depend on many factors, including, but not limited to:

- the progress, results, size, timing and costs of our current Phase 1/2 PROTECT clinical trial of ProTmune, the Phase 1 clinical trials of FATE-NK100, certain of which are being conducted under an investigator-sponsored clinical trial agreement with the University of Minnesota, and any additional clinical trials we may initiate, conduct or support for our product candidates, including our iPSC-derived cell product candidates;
- the progress, results, size, timing and costs of our preclinical, process development and manufacturing studies, and activities necessary to initiate and conduct clinical trials for our product candidates;
- continued progress in our research and development programs, including preclinical studies, process development, manufacturing and other research activities that may be necessary in order for an IND application to go into effect for a prospective clinical development candidate, as well as potential future clinical trials of any additional product candidates we may identify for development;
- our ability and the ability of our investigators to initiate and conduct, and the progress, results, size, timing and costs of, clinical trials of our product candidates, including ProTmune and FATE-NK100, that will be necessary to support any application for regulatory approval;
- our ability to manufacture, or enter into arrangements with third parties for the manufacture of, our product candidates, including ProTmune and FATE-NK100, as well as potential future clinical development candidates, both for clinical development and commercialization, and the timing and costs associated with such manufacture;
- 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, or other costs we may incur, in connection with the licensing, filing, prosecution, defense and enforcement of any patents or other intellectual property rights;
- the cost of manufacturing and commercialization activities and arrangements, including the manufacturing of our product candidates and the establishment of a sales and marketing organization either internally or in partnership with a third party; and
- our ability to establish and maintain strategic arrangements and alliances with third-party collaborators including our existing collaborations with Juno Therapeutics, Inc., the University of Minnesota and Memorial Sloan Kettering, to advance the research, development and commercialization of therapeutic products.

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates. In addition, we cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. The sale of additional equity or convertible securities would dilute all of our stockholders. The incurrence of indebtedness would result in increased fixed payment obligations and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or

license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborative partners or otherwise at a different stage than otherwise would be desirable and we may be required to relinquish rights to some of our technologies or product candidates or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects.

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, prospects, financial condition, results of operations, and market price of shares of our common stock.

Our clinical development of ProTmune and FATE-NK100, and the initiation of clinical development of our other product candidates, could be substantially delayed if we are required to conduct unanticipated studies, including preclinical studies or clinical trials, or if the FDA imposes other requirements or restrictions including on the manufacture, of our product candidates.

The FDA may require us to generate additional preclinical, product, manufacturing, or clinical data as a condition to continuing our current clinical trials of ProTmune or FATE-NK100, or initiating and conducting any future clinical trials of ProTmune, FATE-NK100 or our other product candidates, including our iPSC-derived cell product candidates. Additionally, the FDA may in the future have comments, or impose requirements, on the conduct of our clinical trials of ProTmune, FATE-NK100, or the initiation of clinical trials for any of our iPSC-derived cell product candidates, including the protocols, processes, materials and facilities we use to manufacture our product candidates and potential future product candidates in support of clinical trials. Any requirements to generate additional data, or redesign or modify our protocols, processes, materials or facilities, or other additional comments, requirements or impositions by the FDA, may cause delays in the initiation or conduct of the current or future clinical trials for our product candidates and subsequent development activities for our product candidates, and could require us to incur additional development or manufacturing costs and resources, seek funding for these increased costs or resources or delay our timeline for, or cease, our preclinical or clinical development activities for our product candidates, or could create uncertainty and additional complexity in our ability to obtain regulatory approval for our product candidates.

Further, if the results of our clinical trials are inconclusive, or if there are safety concerns or adverse events associated with ProTmune, FATE-NK100, our iPSC-derived cell product candidates, or any other product candidates we may identify, we may:

- be delayed in obtaining, or unable to obtain, regulatory approval for such product candidates;
- be required to amend the protocols for our clinical trials, perform additional nonclinical studies or 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
- in the event a product candidate is approved, have regulatory authorities withdraw their approval of the product or impose restrictions on its use.

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 early clinical development, including ProTmune, FATE-NK100, and our iPSC-derived cell product candidates. 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, purity and potency, or efficacy profiles necessary to support further preclinical study, clinical development or regulatory approval.

We may delay or cancel our ongoing research and development activities and our current or planned clinical development for any of our product candidates, including ProTmune, FATE-NK100, and our iPSC-derived cell product candidates, for a variety of reasons, including:

- determining that a product candidate is ineffective, causes harmful side effects, or otherwise presents unacceptable safety risks during preclinical studies or clinical trials;
- 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 protocols and processes and with materials and facilities acceptable to the FDA for the conduct of clinical trials or for marketing approval;

- 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;
- the proprietary rights of third parties, which may preclude us from developing, manufacturing or commercializing a product candidate;
- determining that a product candidate may be uneconomical to develop, manufacture, or commercialize, or may fail to achieve market acceptance or adequate reimbursement;
- our inability to secure or maintain relationships with strategic partners that may be necessary for advancement of a product candidate into or through clinical development, regulatory approval and commercialization in any particular indication(s) or geographic territory(ies); or
- our prioritization of other product candidates for advancement.

Additionally, we will only be able to 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 such product candidate is manufactured in accordance with applicable regulatory requirements, is safe, pure and potent, or 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, process development and manufacturing activities, 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 operations are sufficient to support approval. Securing regulatory approval also requires the submission of information about product manufacturing operations to, and inspection of manufacturing facilities by, the relevant regulatory authority. 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 operations 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 and our ability to receive milestone or other payments under any collaboration agreements may be impaired, which will harm our business, prospects, financial condition and results of operations.

Our product candidates are cellular therapeutics, and the manufacture of our cell product candidates, particularly our iPSC-derived cell product candidates, is complex and subject to a multitude of risks. These manufacturing risks could substantially increase our costs and limit supply of our product candidates 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 operations or if we are required to change our manufacturing operations to comply with regulatory requirements.

Manufacture of our cell product candidates involves novel manufacturing processes that present significant challenges and are subject to multiple risks. The manufacture of our cell product candidates also requires processing steps that are more complex than those required for most small molecule drugs and other cellular immunotherapies including, for our iPSC-derived product candidates, reprogramming human fibroblasts to obtain iPSCs, in some cases genetically engineering these iPSCs, and differentiating the iPSCs to obtain the desired cell product candidate. As a result of the complexities in manufacturing biologics, the cost to manufacture biologics in general, and our cell product candidates in particular, is generally higher than traditional small molecule chemical compounds, and the manufacturing processes are less reliable and are more difficult to reproduce. We are still developing optimized and reproducible manufacturing processes for clinical and commercial-scale manufacturing of our product candidates, and none of our manufacturing processes have been validated for commercial production of our product candidates. Although we are working to develop reproducible and commercially viable manufacturing processes for our product candidates, doing so is a difficult and uncertain task, and there are risks associated with scaling to the level required for advanced clinical trials or commercialization, including, among others, cost overruns, potential problems with process scale-out, process reproducibility, stability and purity issues, lot consistency, and timely availability of acceptable reagents and raw materials.

We may make changes as we continue to evolve the manufacturing processes for our product candidates for advanced clinical trials and commercialization, and we cannot be sure that even minor changes in these processes will not cause our product candidates to perform differently and affect the results of our ongoing clinical trials, future clinical trials, or the performance of the product once commercialized. In some circumstances, changes in our manufacturing operations, including to our protocols, processes, materials or facilities used, may require us to perform additional preclinical or comparability studies, or to collect additional clinical data from patients prior to undertaking additional clinical studies or filing for regulatory approval for a product candidate. These requirements may lead to delays in our clinical development and commercialization plans for our product candidates, and may increase our development costs substantially.

We also will need to transfer certain manufacturing process know-how and certain intermediates to third parties, including clinical cell processing facilities operated by our clinical trial sites, and larger-scale facilities operated by either a contract

manufacturing organization (CMO), or by us, to facilitate manufacture of our product candidates for clinical trials and commercialization. Transferring manufacturing testing and processes and know-how is complex and involves review and incorporation of both documented and undocumented processes that may have evolved over time. In addition, transferring production to different facilities may require utilization of new or different processes to meet the specific requirements of a given facility. We and any CMOs or third parties that we engage for manufacturing our product candidates will need to conduct significant development work to transfer these processes and manufacture each of our product candidates for clinical trials and commercialization. In addition, we may be required to demonstrate the comparability of material generated by any CMO or third parties that we engage for manufacturing our product candidates with material previously produced and used in testing. The inability to manufacture comparable drug product by us or our CMO could delay the continued development of our product candidates.

In addition, the manufacturing processes for any products that we may develop are subject to FDA and foreign regulatory authority approval requirements, and we will need to meet, and our CMOs or other third party manufacturers will need to meet, all applicable FDA and foreign regulatory authority requirements on an ongoing basis. The requirements to manufacture ProTmune in close proximity to transplant centers within a short period of time before transplantation, and to manufacture FATE-NK100 within a short period of time before administration to a patient, may present unprecedented complexities associated with ensuring consistent manufacture in compliance with regulatory requirements as necessary for marketing approval. While our clinical product candidates ProTmune and FATE-NK100 are currently manufactured by third-party cell processing facilities, including facilities operated by or affiliated with our clinical sites, we may be required to identify alternative protocols, processes, materials or facilities for the manufacture of ProTmune or FATE-NK100 in compliance with applicable regulatory requirements. Any requirements to modify our manufacturing protocols, processes, materials or facilities, and any delays in, or inability to, establish manufacturing operations acceptable to the FDA for ProTmune, FATE-NK100, or any of our iPSC-derived cell product candidates could require us to incur additional development costs or result in delays to our clinical development. If we or our CMOs or other third party manufacturers are unable to reliably produce products to specifications acceptable to the FDA or other regulatory authorities, we may not obtain or maintain the approvals we need to commercialize such products. Even if we obtain regulatory approval for any of our product candidates, there is no assurance that either we or our CMOs or other third party manufacturers will be able to manufacture the approved product to specifications acceptable to the FDA or other regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential launch of the product, or to meet potential future demand. Any of these challenges could delay initiation or completion of clinical trials, require bridging clinical trials or the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidates, impair commercialization efforts, increase our cost of goods, and have an adverse effect on our business, financial condition, results of operations and prospects.

Even if we are successful in developing manufacturing capabilities sufficient for clinical and commercial supply, problems with manufacturing operations, even minor deviations from the normal protocols, processes or materials, could result in product defects or manufacturing failures that result in lot failures, product recalls, product liability claims or insufficient supplies of our product candidates for our planned clinical trials or eventual commercialization. Furthermore, certain of the components currently used in manufacturing our product candidates are research-grade only, and we may encounter problems obtaining or achieving adequate quantities and quality of clinical grade materials that meet FDA, European Medicines Agency, or other applicable standards or specifications with consistent and acceptable production yields and costs. Any such events could delay or prevent our ability to obtain regulatory approval for or commercialize ProTmune, FATE-NK100 or our other product candidates, 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 treated with ProTmune or FATE-NK100 in our ongoing clinical trials, as well as patients who may undergo treatment with other product candidates that we may develop, 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 receive. Any of these events could prevent us from advancing ProTmune, FATE-NK100, 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 ProTmune, FATE-NK100, 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.

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

Our cell programming technology and platform for generating cell therapy products using iPSCs represent novel therapeutic approaches, and to our knowledge there are currently no iPSC-derived cell products approved anywhere in the world for commercial sale. As such, it is difficult to accurately predict the type and scope of challenges we may incur during development of our product candidates, and we face uncertainties associated with the preclinical and clinical development, manufacture and regulatory requirements for the initiation and conduct of clinical trials, regulatory approval, and reimbursement required for successful commercialization of these product candidates. In addition, because our iPSC-derived cell product candidates are all in the research or preclinical stage, we have not yet been able to assess safety in humans or the long-term effects of treatment. Animal models and assays may not accurately predict the safety and efficacy of our product candidates in our target patient populations, and appropriate models and assays may not exist for demonstrating the safety and purity of our product candidates, particularly any iPSC-derived cell product candidates we develop, as required by the FDA and other regulatory authorities for ongoing clinical development and product approval.

The preclinical and clinical development, manufacture, and regulatory requirements for 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 to a lack of prior experiences on the side of both developers and regulatory agencies. Additionally, due to the uncertainties associated with the preclinical and clinical development, manufacture, and regulatory requirements for approval of our product candidates, we may be required to modify or change our preclinical and clinical development plans or our manufacturing activities and plans, or be required to meet stricter regulatory requirements for approval. Any such modifications or changes could delay or prevent our ability to develop, manufacture, obtain regulatory approval or commercialize our product candidates, which would adversely affect our business, financial condition and results of operations.

Cellular immunotherapies, and stem cell therapies and iPSC-derived cell therapies in particular, represent relatively new therapeutic areas, and the FDA has cautioned consumers about potential safety risks associated with cell therapies. To date, there are relatively few approved cell therapies. As a result, the regulatory approval process for product candidates such as ours is uncertain and may be more expensive and take longer than the approval process for product candidates based on other, better known or more extensively studied technologies and therapeutic approaches. For example, there are currently no FDA approved products with a label designation that supports the use of a product to prevent acute graft-versus-host disease in patients undergoing allogeneic HSCT, which makes it difficult to determine the clinical endpoints and data required to support an application or regulatory approval, and the time and cost required to obtain regulatory approval in the United States for ProTmune.

Regulatory requirements in the United States and in other countries governing cell therapy products have changed frequently and the FDA or other regulatory bodies may change the requirements, or identify different regulatory pathways, for approval for any of our product candidates. For example, within the FDA, the Center for Biologics Evaluation and Research, or CBER, restructured and created a new Office of Tissues and Advanced Therapies to better align its oversight activities with FDA Centers for Drugs and Medical Devices. It is possible that over time new or different divisions may be established or be granted the responsibility for regulating cell and/or gene therapy products, including iPSC-derived cell products, such as ours. 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 preclinical and clinical development and manufacture 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 and manufacturing 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 an FDA 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.

Results from earlier studies may not be predictive of the results of later studies 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. Results from preclinical testing, process development and manufacturing activities, and earlier clinical studies, including clinical studies with similar product candidates, are not necessarily predictive of future results, including clinical trial results. While we have demonstrated in preclinical models that a single administration of ProTmune resulted in a statistically-significant reduction in GvHD score and improvement in survival, as compared to vehicle-treated cells, we may not observe similar results in future preclinical or clinical studies of ProTmune, including our Phase 1/2 PROTECT study. Additionally, the data reported from the Phase 1 stage of PROTECT as of the February 26, 2018 data cut-off date may not continue for these subjects or be repeated or observed in ongoing or future studies involving ProTmune, including in the Phase 2 stage of the

PROTECT study. It is possible that subjects for whom events of acute GvHD have been reduced or eliminated may experience acute GvHD in the future, as there is limited data concerning long-term safety and efficacy following treatment with ProTmune. Accordingly, ProTmune may not demonstrate in the Phase 2 stage of PROTECT, or in subsequent trials, an adequate safety or efficacy profile to support further development or commercialization.

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

- we may not demonstrate the potency and efficacy benefits observed in previous studies;
- our efforts to improve, standardize and automate the manufacture of our product candidates, including ProTmune and FATE-NK100, and potential iPSC-derived product candidates, and any resulting deviations in the manufacture of our product candidates, may adversely affect the safety, purity, potency or efficacy of such product candidates;
- differences in study design, including differences in conditioning regimens, eligibility criteria, and patient populations;
- advancements in the standard of care may affect our ability to demonstrate efficacy or achieve study endpoints in our current or future clinical trials; and
- safety issues or adverse events in patients that enroll in our current or future clinical trials.

Even if our current and planned clinical trials are successful, we will need to conduct additional clinical trials, which may include registrational trials, trials in additional patient populations or under different treatment conditions, and trials using different manufacturing protocols, processes, materials or facilities or under different manufacturing 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.

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 protocols, processes, materials and facilities, 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 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 product candidates, manufacturing operations, 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 existing orphan drug designations may not confer marketing exclusivity or other expected commercial benefits and we may not be able to obtain orphan drug designations for our other product candidates.

We expect to rely on orphan drug exclusivity for ProTmune and may rely on orphan drug exclusivity for other 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. We have been granted orphan drug designation in the United States for *ex vivo* programmed mobilized peripheral blood for the prevention of GvHD in patients undergoing allogeneic hematopoietic cell transplantation, and in the European Union for ProTmune for treatment in hematopoietic stem cell transplantation. While we have been granted these orphan designations, even if we are the first to obtain marketing approval of our product candidates for the applicable indications, 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. In addition, we may be unable to obtain orphan drug designations for any other product candidates that we are currently developing or may pursue.

For any product candidate for which we are 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. It is possible that some of our business activities could be subject to challenge under one or more of these laws. 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 currently depend on third-party cell processing facilities for the manufacture of ProTmune and FATE-NK100 under specific conditions. Any failure by these facilities to manufacture our product candidates 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, these product candidates.

We do not currently operate our own facilities for the manufacture of our product candidates. Clinical cell processing facilities operated by or affiliated with our clinical sites currently manufacture ProTmune and FATE-NK100 for use in our clinical trials of these product candidates. We will be required by the FDA to standardize the manufacture of ProTmune and FATE-NK100, and any other product candidates we may develop, including our oversight for facility and raw material and vendor qualification through to final product analytical testing and release. The manufacture of ProTmune and FATE-NK100 for use in registrational clinical trials and commercialization will be subject to the requirements of applicable regulatory authorities, including the FDA, and the anticipated manufacture of these product candidates for commercialization may require each of the clinical cell processing facilities at which ProTmune and FATE-NK100 are 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 regulatory requirements and to properly execute the protocol for the manufacture of any of our product candidates. 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 any of our product candidates, including ProTmune and FATE-NK100, 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 such product candidate, which may require us to spend significant additional time and resources, and would impair our ability to manufacture, complete the clinical development of, and to commercialize, such product candidate. To comply with applicable regulatory and manufacturing requirements, 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 or manufacturing requirements, it will be restricted or prohibited from manufacturing such product candidate and making it available for administration to patients. Any failure by these clinical cell processing facilities to properly manufacture ProTmune or FATE-NK100 may adversely affect the safety and efficacy profile of such product candidate or cause the FDA or other regulatory authorities to impose restrictions or prohibitions on the manufacture and use of ProTmune or FATE-NK100 in both the clinical and the commercial setting, which would have an adverse effect on our business.

Cell-based therapies depend on the availability of reagents and specialized materials and equipment which in each case are acceptable to the FDA, and such reagents, materials, and equipment may not be available to us on acceptable terms or at all. We rely on third-party suppliers for various components, materials and equipment required for the manufacture of our product candidates and do not have supply arrangements for certain of these components.

Manufacturing our product candidates requires many reagents and other specialty materials and equipment, some of which are manufactured or supplied by small companies with limited resources and experience to support commercial biologics production. 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 ProTmune and FATE-NK100 from third party suppliers. Some of these suppliers may not have the capacity to support commercial products manufactured under cGMP by biopharmaceutical firms or may otherwise be ill-equipped to support our needs. Reagents and other key materials from these suppliers may have inconsistent attributes and introduce variability into our manufactured product candidates, which may contribute to variable patient outcomes and possible adverse events. We rely on the general commercial availability of materials required for the manufacture of our product candidates, and do not have supply contracts with many of these suppliers and may not be able to obtain supply contracts with them on acceptable terms or at all. Even if we are able to enter into such contracts, we may be limited to a sole third-party for the supply of certain required components, including our pharmacologic modulators and components for our cell processing media. An inability to continue to source product from any of these suppliers, which could be due to regulatory actions or requirements affecting the supplier, adverse financial or other strategic developments experienced by a supplier, labor disputes or shortages, unexpected demands, or quality issues, could adversely affect our ability to satisfy demand for our product candidates, which could adversely and materially affect our product sales and operating results or our ability to conduct clinical trials, either of which could significantly harm our business.

If we are required to change suppliers, or modify the components, equipment, materials or disposables used for the manufacture of our product candidates, we may be required to change our manufacturing operations 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 set back, delay, or increase the costs required to complete our clinical development and commercialization of our product candidates, including ProTmune and FATE-NK100. Additionally, any such change or modification may adversely affect the safety, efficacy or potency of our product candidates, and could adversely affect our clinical development of our product candidates and harm our business.

We face a variety of challenges and uncertainties associated with our dependence on human donor material for the manufacture of certain of our product candidates, including ProTmune and FATE-NK100.

Certain of our product candidates, including ProTmune and FATE-NK100, are manufactured from the blood of third-party donors, which subjects the manufacture of such product candidates to the availability and quality of the third-party donor material. The selection of the appropriate donor material for manufacture of our ProTmune and FATE-NK100 product candidates requires close coordination between clinical and manufacturing personnel.

ProTmune is manufactured using mobilized peripheral blood, or mPB, which is currently procured directly by the clinical cell processing facilities from the National Marrow Donor Program (NMDP) for our ongoing Phase 1/2 PROTECT clinical study. The availability of mPB for the manufacture of ProTmune depends on a number of regulatory, political, economic and technical factors outside of our control, including:

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

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

In the United States, the banking and use of mPB does not require a BLA, and mPB is not an FDA licensed product. However, the FDA does require that units of mPB adhere to and meet the standards set forth by the Foundation for Accreditation for Cell Therapy (FACT), the NMDP, and the American Association of Blood Banks (AABB), as applicable. In our current Phase 1/2

PROTECT clinical trial of ProTmune, ProTmune is manufactured using unlicensed mPB units. It may be possible that in the future, regulatory policy could change, and the FDA may later require that mPB units be licensed, and that ProTmune be manufactured using only licensed mPB units. Any inability to procure sufficient supplies of mPB will adversely affect our ability to develop and commercialize ProTmune.

Further, manufacture of our ProTmune and FATE-NK100 product candidates from donor material involves complex processes, with specialized equipment and highly skilled and trained personnel. The processes for manufacturing these product candidates are susceptible to additional risks, given the need to maintain aseptic conditions throughout the manufacturing process. Contamination with viruses or other pathogens in either the donor material or materials utilized in the manufacturing process or ingress of microbiological material at any point in the process may result in contaminated or unusable product. Such contaminations could result in delays in the development of our product candidates. Such contaminations could also increase the risk of adverse side effects.

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

We rely upon third parties, including medical institutions, clinical investigators, cell processing laboratories, and clinical research organizations (CROs), for the conduct of certain research and preclinical development activities, process development and manufacturing activities, and for the conduct, management, and supervision of clinical trials of our product candidates. We do not have direct control over the activities of these third parties, and may have limited influence over their actual performance. Our reliance on these third parties and CROs does not relieve us of our responsibilities to ensure that our clinical studies are conducted in accordance with the applicable protocol, legal and regulatory requirements and scientific standards.

We are responsible for complying, and we are responsible for ensuring that our third-party service providers and CROs comply, with applicable GCP for conducting activities for all of our product candidates in clinical development, including conducting our clinical trials, and recording and reporting data from these trials. 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 applicable GCP requirements. In addition, our registrational clinical trials must be conducted with product produced under applicable regulatory requirements.

If these third parties and CROs 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, process development, manufacturing, or clinical data they obtain is compromised due to the failure to adhere to applicable regulatory and manufacturing requirements or for other reasons, our research, preclinical development, process development and manufacturing 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 or CROs 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 expect to depend on strategic partnerships and collaboration arrangements for the development and commercialization of certain of our product candidates in certain indications or geographic territories, and if these arrangements are unsuccessful, this could result in delays and other obstacles in the development, manufacture or commercialization of any of our product candidates and materially harm our results of operations.

For some programs, we currently depend, and expect to continue to depend, on third-party collaborators and strategic partners to design and conduct our clinical trials. As a result, we may not be able to conduct these programs in the manner or on the time schedule we currently contemplate, which may negatively impact our business operations. In addition, if any of these collaborators or strategic partners withdraw support for our programs or proposed products, or otherwise impair their development, our business could be negatively affected.

In addition, we are likely to depend upon strategic collaboration partners for the financial resources and conduct of activities for the development and commercialization of certain of our product candidates, which could further limit our control over the course of development of these product candidates. Our reliance on strategic collaboration partners for the development and commercialization of our product candidates entails risks to which we may not otherwise be subject, including:

- a collaboration partner may shift its priorities and resources away from our programs due to a change in business strategies, or a merger, acquisition, sale or downsizing of its company or business unit;
- a collaboration partner may cease development in therapeutic areas which are the subject of our partnerships;

- a collaboration partner may change the success criteria for a particular program or potential product candidate thereby delaying or ceasing development of such program or candidate;
- a significant delay in initiation or conduct of certain activities by a collaboration partner could delay our receipt of milestone payments tied to such activities, thereby impacting our ability to fund our own activities;
- a collaboration partner could develop a product that competes, either directly or indirectly, with our product candidates;
- a collaboration partner with commercialization obligations may not commit sufficient financial or human resources to the marketing, distribution or sale of a product;
- a collaboration partner with manufacturing responsibilities may encounter regulatory, resource or quality issues and be unable to meet demand requirements;
- a collaboration partner may exercise its rights under the agreement to terminate the partnership;
- a dispute may arise between us and a collaboration partner concerning the research, development or commercialization of a program or product candidate resulting in a delay in milestones, royalty payments or termination of a program; and
- a collaboration partner may use our proprietary information or intellectual property in such a way as to jeopardize our rights in such property.

Any of these events could have a material adverse effect on our ability to develop and commercialize our product candidates and our results of 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. (Juno) (acquired by Celgene Corporation) 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 therapies 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 therapies, or Juno may elect not to develop any genetically engineered T-cell therapies incorporating any modulators that are identified through the collaboration. Additionally, Juno may terminate the agreement upon six (6) months' written notice to us. 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 (other than T cells derived from iPSCs) 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 therapies that have been genetically engineered to express chimeric antigen receptors or T-cell receptors directed against certain targets selected by Juno, unless such T cells are derived from iPSCs. 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.

In January 2018, Juno announced its entry into a merger agreement with Celgene Corporation (Celgene), pursuant to which Celgene agreed to acquire all of the outstanding shares of common stock of Juno through a tender offer. On March 6, 2018, Celgene announced that it had completed the acquisition of Juno. The acquisition of Juno by Celgene may result in organizational and personnel changes, shifts in business focus or other developments that may have a material adverse effect on our collaboration agreement with Juno.

We have limited experience manufacturing our product candidates on a clinical scale, and no experience manufacturing on a commercial scale. We are, and expect to continue to be, dependent on third parties to conduct some or all aspects of manufacturing of our product candidates for use in clinical trials and for commercial sale, if approved. Our business could be harmed if those third parties fail to perform satisfactorily.

We currently rely, and expect to continue to rely, on third parties, including cell processing facilities associated with clinical trial sites, to manufacture our product candidates for use in conducting clinical trials and for commercial sale upon approval of any of our product candidates. In some cases these third parties are academic, research or similar institutions that may not apply the same quality control protocols utilized in certain commercial settings. In addition, we have not yet caused our product candidates to be manufactured or processed on a commercial scale and may not be able to do so for any of our product candidates.

In addition, we do not currently operate our own facilities for the manufacture of our product candidates. The facilities used to manufacture our product candidates must be evaluated by the FDA or other foreign regulatory agencies pursuant to inspections that will be conducted after we submit an application to the FDA or other foreign regulatory agencies. If the FDA or a comparable foreign regulatory authority finds deficiencies with or does not approve these facilities for the manufacture of our product candidates or if it later finds deficiencies or withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved.

Reliance on third parties for manufacture of our product candidates entails risks to which we would not be subject if we manufactured product candidates ourselves, including reliance on the third party for regulatory compliance and quality assurance, the possibility that the third-party manufacturer does not maintain the financial resources to meet its obligations, the possibility that the third party fails to manufacture our product candidates or any products we may eventually commercialize in accordance with our specifications, misappropriation of our proprietary information, including our trade secrets and know-how, and the possibility of termination of our manufacturing relationship by the third party, based on its own business priorities, at a time that is costly or damaging to us. In addition, the FDA and other regulatory authorities require that our product candidates and any products that we may eventually commercialize be manufactured according to cGMP, cGTP and similar jurisdictional standards. These requirements include, among other things, quality control, quality assurance and the maintenance of records and documentation. The FDA or similar foreign regulatory agencies may also implement new standards at any time, or change their interpretations and enforcement of existing standards for manufacture, packaging or testing of products. We have little control over our manufacturers' compliance with these regulations and standards. Any failure by third parties that are manufacturing our product candidates to comply with cGMP or cGTP or failure to scale up manufacturing processes, including any failure to deliver sufficient quantities of product candidates in a timely manner, could lead to a delay in, or failure to obtain, regulatory approval of any of our product candidates. In addition, such failure could be the basis for the FDA to issue a warning letter, withdraw approvals for product candidates previously granted to us, or take other regulatory or legal action, including recall or seizure of outside supplies of the product candidate, total or partial suspension of production, suspension of ongoing clinical trials, refusal to approve pending applications or supplemental applications, detention of product, refusal to permit the import or export of products, injunction or imposing civil and criminal penalties.

If conflicts arise between us and our collaborators or strategic partners, these parties may act in a manner adverse to us and could limit our ability to implement our strategies.

If conflicts arise between our corporate or academic collaborators or strategic partners and us, the other party may act in a manner adverse to us and could limit our ability to implement our strategies. Some of our academic collaborators and strategic partners are conducting multiple product development efforts within each area that is the subject of the collaboration with us. Our collaborators or strategic partners, however, may develop, either alone or with others, products in related fields that are competitive with the products or potential products that are the subject of these collaborations. Competing products, either developed by the collaborators or strategic partners or to which the collaborators or strategic partners have rights, may result in the withdrawal of our collaborator's or partner's support for our product candidates.

Some of our collaborators or strategic partners could also become our competitors in the future. Our collaborators or strategic partners could develop competing products, preclude us from entering into collaborations with their competitors, fail to obtain timely regulatory approvals, terminate their agreements with us prematurely, or fail to devote sufficient resources to the development and commercialization of products. Any of these developments could harm our product development efforts.

Risks Related to Our Intellectual Property

If we are unable to protect our intellectual property, or obtain and maintain patent protection for our technology and product candidates, 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 operations used to manufacture them and the methods for using them, and also for our cell programming technology in order to prevent third parties from making, using, selling, offering to sell or importing our product candidates or otherwise exploiting

our cell programming approach. The scope of patent protection in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. As a result, the issuance, scope, validity, enforceability, and commercial value of our patent rights are uncertain. We own and have exclusive licenses to patent portfolios for our product candidates and cell programming technology, 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 and cell programming technology, 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 our or important to our business. Since patent applications in the United States and most other countries are confidential for a period of time after filing, and some remain so until issued, we cannot be certain that any patent application owned by a third party will not have priority over patent applications filed or 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. The scope, validity or enforceability of our patents or the patents of our licensors may be challenged in such proceedings in either the courts or patent offices in the United States and abroad, and our business may be harmed if the coverage of our patents or the patents of our licensors is narrowed, or if a patent of ours or our licensors is judged invalid or unenforceable, in any such proceedings. In addition, patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after it is filed. Various extensions may be available; however the life of a patent, and the protection it affords, is limited. Even if we obtain patents covering our product candidates, once the patent life has expired for a product, we may be open to competition from other products.

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 ProTmune, FATE-NK100, and our 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 ProTmune and FATE-NK100, 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 be involved in litigation or other proceedings relating to the enforcement or defense of patent and other intellectual property rights, which could cause us to divert our resources and could put our intellectual property at risk.

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. In addition to patent infringement lawsuits, we may be required to file interferences, oppositions, ex parte reexaminations, post-grant

review, or inter partes review proceedings before the U.S. Patent and Trademark Office (the USPTO) and corresponding foreign patent offices. Litigation and other proceedings relating to intellectual property are unpredictable and expensive, and would consume time and resources and divert the attention of managerial and scientific personnel even if we were successful in any such proceeding. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for research, development, and other activities. We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing or misappropriating or successfully challenging our intellectual property rights. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

There also is a risk that a court or patent office in such proceeding will decide that our patents or the patents of our licensors are not valid or are not enforceable, 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 or our strategic partners 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. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, *ex parte* reexaminations, post-grant review, and *inter partes* review proceedings before the USPTO and corresponding foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may be subject to claims of infringement of the patent rights of third parties.

We cannot guarantee that the manufacture, use or marketing of ProTmune, FATE-NK100, our iPSC-derived cell product candidates, or any other product candidates that we develop, or the use of our cell programming technology, will not infringe third-party patents. There may be third-party patents or patent applications with claims to materials, cell compositions, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Our competitors may have filed, and may in the future file, patent applications covering products and technologies similar to ours. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover aspects of the manufacture of any of our product candidates, any compositions formed during the manufacture, or any final product itself, the holders of any such patents may be able to block our ability to commercialize such product candidate unless we obtained a license under the applicable patents, or until such patents expire. Such a license may not be available on commercially reasonable terms or at all.

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 rights, unless that third party grants us rights to use its intellectual property. 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.

Changes in the patent law in the United States could diminish the value of patents in general, thereby impairing our ability to protect our product candidates and technology.

As is the case with other biotechnology companies, our success is heavily dependent on intellectual property rights, particularly patents. Obtaining and enforcing patents in the biotechnology industry involve both technological and legal complexity, and is therefore obtaining and enforcing biotechnology patents is costly, time-consuming and inherently uncertain. In addition, the United States has recently enacted and is currently implementing wide-ranging patent reform legislation. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

Risks Related to the Commercialization of Our Product Candidates

We do not have experience marketing any product candidates 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 no 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 ProTmune, FATE-NK100, 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 novel nature of our product candidates, and the targeted indication of HSCT procedures in general and our cellular immunotherapy 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 immunotherapy product candidates that we develop will be relatively high due to their anticipated use in the prevention or treatment of life-threatening diseases where therapeutic options are limited, the biopharmaceutical industry has recently experienced significant pricing pressures, including in the area of orphan drug products. In particular, drug pricing and other healthcare costs continue to be subject to intense political and societal pressures, which we anticipate will continue and escalate on a global basis. These pressures may result in harm to our business and reputation, cause our stock price to decline or experience periods of volatility and adversely affect results of operations and our ability to raise funds.

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.

Our ability to commercialize any of our product candidates successfully will depend in part on the extent to which reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers, and other organizations. 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 cellular immunotherapies, 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, or 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, and could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products, and our overall financial condition.

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 development on product candidates for orphan diseases. 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.

Healthcare legislative or regulatory reform measures may have a negative impact on our business and results of operations.

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

Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. In March 2010, the ACA was passed, which substantially changed the way healthcare is financed by both the government and private insurers, and significantly impacts the U.S. pharmaceutical industry. The ACA, among other things:

- established an annual, nondeductible fee on any entity that manufactures or imports certain specified branded prescription drugs and biologic agents apportioned among these entities according to their market share in some government healthcare programs; expanded the entities eligible for discounts under the 340B drug pricing program; increased the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program, to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively and capped the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price, or AMP;
- expanded the eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability;

- addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics that are inhaled, infused, instilled, implanted, or injected;
- introduced a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;
- created a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and
- established a Center for Medicare and Medicaid Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug.

Some of the provisions of the ACA have yet to be implemented, and there have been judicial and Congressional challenges to certain aspects of the ACA, as well as recent efforts by the Trump administration to repeal or replace certain aspects of the ACA. While Congress has not passed comprehensive repeal legislation, bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". Additionally, on January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018, or the BBA, among other things, amends the ACA, effective January 1, 2019, to increase from 50 percent to 70 percent the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole." We continue to evaluate the potential impact of the ACA and its possible repeal or replacement on our business.

Other legislative changes have been proposed and adopted since the ACA was enacted. These changes include aggregate reductions to Medicare payments to providers of 2% per fiscal year pursuant to the Budget Control Act of 2011, which began in 2013, and due to subsequent legislative amendments to the statute, including the BBA, will remain in effect through 2027, unless additional Congressional action is taken. The American Taxpayer Relief Act of 2012, among other things, further reduced Medicare payments to several providers, including hospitals and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws may result in additional reductions in Medicare and other healthcare funding, which could have an adverse effect on customers for our product candidates, if approved, and, accordingly, our financial operations.

Additionally, there has been heightened governmental scrutiny in the United States of pharmaceutical pricing practices in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. At the federal level, the Trump administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Further, the Trump administration released a "Blueprint", or plan, to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase drug manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products, and reduce the out of pocket costs of drug products paid by consumers. The Department of Health and Human Services, or HHS, has already started the process of soliciting feedback on some of these measures and, at the same, is immediately implementing others under its existing authority. While some proposed measures will require authorization through additional legislation to become effective, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

More recently, on May 30, 2018, the Trickett Wendler, Frank Mongiello, Jordan McLinn, and Matthew Bellina Right to Try Act of 2017 was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase I clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program.

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

In addition, FDA regulations and guidance may be revised or reinterpreted by the FDA in ways that may significantly affect our business and our products. The Trump administration has also taken several executive actions, including the issuance of a number of Executive Orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. It is difficult to predict how these requirements will be interpreted and implemented and the extent to which they will impact the FDA's ability to exercise its regulatory authority. If these executive actions impose restrictions on the FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted. Any new regulations or guidance, including implementation of or new guidance regarding the frameworks for compounding under Sections 503A and 503B of the FDCA, or revisions or reinterpretations of existing regulations or guidance, may impose additional costs or lengthen FDA review times for ProTmune, FATE NK-100 or any future product candidates. We cannot determine how changes in regulations, statutes, policies, or interpretations when and if issued, enacted or adopted, may affect our business in the future. Such changes could, among other things, require:

- additional clinical trials to be conducted prior to obtaining approval;
- changes to manufacturing methods;
- recalls, replacements, or discontinuance of one or more of our products; and
- additional recordkeeping.

Such changes would likely require substantial time and impose significant costs, or could reduce the potential commercial value of ProTmune, FATE NK-100 or other product candidates, and could materially harm our business and our financial results. In addition, delays in receipt of or failure to receive regulatory clearances or approvals for any other products would harm our business, financial condition, and results of operations.

Risks Related to Our Business and Industry

The success of our product candidates, including ProTmune and FATE-NK100, is substantially dependent on developments within the field of HSCT and cellular immunotherapy, some of which are beyond our control.

Our product candidates, including ProTmune and FATE-NK100, are designed and are being developed as therapeutic entities for use as cellular immunotherapies. Any adverse developments in the field of cellular immunotherapy 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 and facilities. In particular, there are several companies and institutions developing products that may obviate the need for HSCT, may be competitive to product candidates in our research and development 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 perform the requisite operational roles and 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 (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 (SVB) pursuant to which we were extended term loans in the aggregate principal amount of \$20.0 million. In July 2017, we entered into an amendment to the loan and security agreement, pursuant to which SVB extended an additional term loan to us in the aggregate principal amount of \$15.0 million, a portion of which was applied to repay in full our previously outstanding debt to SVB under the agreement. Borrowings under the loan and security agreement, as amended, 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 maintain our deposit and securities accounts with SVB and to comply with various operating covenants and default clauses 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 or clauses 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.

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 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 business combinations with other companies. 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, hospitals, medical centers, healthcare providers, pharmaceutical companies, and consumers, or by others selling, manufacturing 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 a 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 operations 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, to provide accurate information to the FDA or foreign regulators, to comply with healthcare fraud and abuse laws and regulations in the United States and abroad, to report financial information or data accurately or to 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.

Our business activities may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, physician payment transparency laws, health information privacy and security laws, and anti-bribery and anti-corruption laws. Our actual or perceived failure to comply with such laws or their relevant foreign counterparts could adversely affect our business.

Our business activities may be subject to the Foreign Corrupt Practices Act, or FCPA, various federal and state fraud and abuse laws, including, without limitation, physician sunshine laws and regulations, and similar anti-bribery or anti-corruption laws, regulations or rules of other countries in which we operate. The FCPA generally prohibits improper payments or offers of payments, either directly or indirectly, to foreign governments and their officials and political parties by U.S. persons in order to influence official action, or otherwise obtain or retain business. Additionally, the U.S. federal physician payment transparency requirements, sometimes referred to as the “Physician Payments Sunshine Act,” created under the Affordable Care Act, and their implementing regulations, require manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children’s Health Insurance Program to report annually to the Centers for Medicare and Medicaid Services, information related to payments or other transfers of value made to physicians, other healthcare providers, and teaching hospitals, as well as ownership and investment interests held by physicians, other healthcare providers, and their immediate family members. The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for knowingly and willfully defrauding any healthcare benefit program or knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services. HIPAA also imposes requirements on certain covered healthcare providers, health plans, and healthcare clearinghouses as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information without appropriate authorization. Because of the breadth of these laws and the limited statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. There is no certainty that all of our employees, agents, suppliers, manufacturers, contractors, or collaborators, or those of our affiliates, will comply with all applicable laws and regulations, particularly given the high level of complexity of these laws.

In addition, as of May 25, 2018, the General Data Protection Regulation, or GDPR, regulates the collection and use of personal data in the EU. The GDPR covers any business, regardless of its location, that provides goods or services to residents in the EU and, thus, could incorporate our activities in EU member states. The GDPR imposes strict requirements on controllers and processors of personal data, including special protections for “sensitive information,” which includes health and genetic information of individuals residing in the EU. GDPR grants individuals the opportunity to object to the processing of their personal information, allows them to request deletion of personal information in certain circumstances, and provides the individual with an express right to seek legal remedies in the event the individual believes his or her rights have been violated. Further, the GDPR imposes strict rules on the transfer of personal data out of the EU to regions that have not been deemed to offer “adequate” privacy protections, such as the U.S. currently. Failure to comply with the requirements of the GDPR and the related national data protection laws of the EU member states, which may deviate slightly from the GDPR, may result in warning letters, mandatory audits and financial penalties, including fines of up to 4% of global revenues, or €20,000,000, whichever is greater. As a result of the implementation of the GDPR, we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules.

There is significant uncertainty related to the manner in which data protection authorities will seek to enforce compliance with GDPR. For example, it is unclear whether the authorities will conduct random audits of companies doing business in the EU, or act solely after complaints are filed claiming a violation of the GDPR. The lack of compliance standards and precedent, enforcement uncertainty and the costs associated with ensuring GDPR compliance may be onerous and adversely affect our business, financial condition, results of operations and prospects.

Violations of these laws and regulations could result in fines, criminal sanctions against us, our officers, or our employees, the closing down of facilities, including those of our suppliers and manufacturers, requirements to obtain export licenses, cessation of business activities in sanctioned countries, implementation of compliance programs, and prohibitions on the conduct of our business. Any such violations could include prohibitions on our ability to offer our products in one or more countries as well as difficulties in manufacturing or continuing to develop our products, and could materially damage our reputation, our brand, our international expansion efforts, our ability to attract and retain employees, and our business, prospects, operating results, and financial condition.

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 company formed in 2007 with a limited operating history. We have not yet obtained regulatory approval for any of our 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, 2018, we had an accumulated deficit of \$252.6 million. We expect to continue to incur losses for the foreseeable future as we continue to fund our ongoing and planned clinical trials of ProTmune and FATE-NK100 and our other ongoing and planned research and development activities. We also expect to incur significant operating

and capital expenditures as we continue our research and development of, and seek regulatory approval for, our product candidates, in-license or acquire new product candidates for development, implement additional infrastructure and internal systems, and hire additional scientific, clinical, and administrative 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, biological, and cell therapy 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, process development, manufacturing activities, 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 other risks beyond our control, including:

- the timing of the initiation of, and progress in, our current and planned clinical trials;
- the results of our clinical trials and preclinical studies, and the results of clinical trials and preclinical studies by others for product candidates or indications similar to ours;
- developments related to the FDA or to regulations applicable to cellular immunotherapies 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 immunotherapy;
- 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 biotechnology 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 this could divert the time and attention of our management.

Our principal stockholders exercise significant control over our company.

As of August 3, 2018, our executive officers, directors and entities affiliated with our five percent stockholders beneficially own, in the aggregate, shares representing approximately 47.4% of our outstanding voting stock. If, in accordance with the CoD (as

such term is defined in Note 7 of the Notes to the Consolidated Financial Statements herewith) relating to the Class A Convertible Preferred Stock, Redmile (as such term is defined in Note 7 of the Notes to the Consolidated Financial Statements herewith) elects to remove certain limitations on the percentage of the Company's outstanding common stock that it may own such that the 2,819,549 shares of Class A Convertible Preferred Stock currently held by Redmile become fully convertible at Redmile's option into 14,097,745 shares of common stock, the beneficial ownership of our executive officers, directors and entities affiliated with our five percent stockholders would increase to 58.0%. 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, state or government grants, strategic alliances, licensing and collaboration arrangements, or other third-party business 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. For example, we registered all of the 5,250,000 shares of common stock issued by us in our August 2016 private placement transaction for resale on a Form S-3, which was declared effective by the SEC in September 2016. We also registered all of the 6,766,915 shares of common stock issued by us and all 14,097,745 shares of common stock issuable upon the conversion of an aggregate of 2,819,549 shares of Class A Convertible Preferred Stock issued by us in our November 2016 private placement transaction for resale on a Form S-3, which was declared effective by the SEC in January 2017. As a result, all of these shares are currently available for resale to the public, which may result in dilution to our stockholders. In addition, pursuant to a shelf registration statement declared effective by the SEC in May 2018, we may sell up to \$150 million in the aggregate of shares of our common stock, preferred stock, debt securities, warrants and/or units, and pursuant to a shelf registration statement declared effective by the SEC in August 2017, we may sell up to a remaining \$54 million in the aggregate of shares of our common stock, preferred stock, debt securities, warrants and/or units. The August 2017 registration statement also provides for the resale by Juno of up to one million shares of common stock held by Juno pursuant to the Stock Purchase Agreement entered into in May 2015. Any sale or issuance of securities pursuant to a registration statement or otherwise 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, we are party to an amended and restated loan and security agreement, as amended, with SVB, 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, 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 or delay the development of our product candidates. 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, our amended and restated certificate of incorporation, and our 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 and certain other tax benefits may be limited and, as a result, our future tax liability may increase.

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 (NOLs) and other pre-change tax benefits (such as research tax credits) attributable to the period prior to such change. We triggered an ownership change limitation in November 2009 and again in May 2015. We have determined that there were no ownership changes from May 2015 through December 2017. We have not analyzed periods subsequent to December 2017. We may experience ownership changes as a result of shifts in our stock ownership in the future or subsequent to ownership change analyses. As a result, if we earn net taxable income, our ability to use our pre-change NOLs to offset U.S. federal taxable income may become subject to limitations, which could potentially result in increased future tax liability to us. In addition, under the Tax Cuts and Jobs Act of 2017 (the Tax Act), the amount of post 2017 NOLs that we are permitted to deduct in any taxable year is limited to 80% of our taxable income in such year, where taxable income is determined without regard to the NOL deduction itself. The Tax Act generally eliminates the ability to carry back any NOL to prior taxable years, while allowing post 2017 unused NOLs to be carried forward indefinitely. There is a risk that due to changes under the Tax Act, regulatory changes or other unforeseen reasons, our existing NOLs could expire or otherwise be unavailable to offset future income tax liabilities. For these reasons, our ability to realize a tax benefit from the use of our NOLs may be further limited.

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

Exhibit Number	Exhibit Title	Form	File No.	Exhibit	Filing Date
3.1	Amended and Restated Certificate of Incorporation of the Registrant, as currently in effect	S-1/A	333-190608	3.2	August 29, 2013
3.2	Certificate of Designation of Preferences, Rights and Limitations of Class A Convertible Preferred Stock	8-K	001-36076	3.1	November 29, 2016
3.3	Amended and Restated Bylaws of the Registrant, as currently in effect	S-1/A	333-190608	3.4	August 29, 2013
4.1	Specimen Common Stock Certificate	S-1/A	333-190608	4.1	August 29, 2013
10.1	Sixth Amendment to the Lease Agreement by and between the Registrant and ARE-3535/3565 General Atomics Court, dated May 31, 2018	—	—	—	Filed herewith
10.2†	Amended and Restated Exclusive License Agreement by and between the Registrant and Memorial Sloan Kettering Cancer Center, dated May 15, 2018	—	—	—	Filed herewith
31.1	Certification of Principal Executive Officer and 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	—	—	—	Filed herewith
32.1	Certification of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	—	—	—	Filed herewith
101.INS	XBRL Instance Document	—	—	—	Filed herewith
101.SCH	XBRL Taxonomy Extension Schema Document	—	—	—	Filed herewith
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	—	—	—	Filed herewith
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	—	—	—	Filed herewith
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	—	—	—	Filed herewith
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	—	—	—	Filed herewith

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

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 6, 2018

By: /s/ J. Scott Wolchko

J. Scott Wolchko

President and Chief Executive Officer and Director

(Principal Executive Officer, Principal Financial Officer and Principal Accounting Officer)

SIXTH AMENDMENT TO LEASE AGREEMENT

THIS SIXTH AMENDMENT TO LEASE AGREEMENT (this "**Sixth Amendment**") is made as of May 31, 2018, by and between **ARE-3535/3565 GENERAL ATOMICS COURT, LLC**, a Delaware limited liability company ("**Landlord**"), and **FATE THERAPEUTICS, INC.**, a Delaware corporation ("**Tenant**").

RECITALS

A. Landlord and Tenant are now parties to that certain Lease Agreement dated as of December 3, 2009, as amended by that certain First Amendment to Lease Agreement dated as of October 1, 2011, as amended by that certain Second Amendment to Lease Agreement dated as of September 30, 2013, as amended by that certain Third Amendment to Lease Agreement dated as of September 2, 2014, as further amended by that certain Fourth Amendment to Lease dated as of March 2, 2015, and as further amended by that certain Fifth Amendment to Lease Agreement dated as of June 1, 2016 (the "**Fifth Amendment**") (as amended, the "**Lease**"). Pursuant to the Lease, Tenant leases certain premises consisting of approximately 47,924 rentable square feet ("**Existing Premises**") on the first and second floors of that certain building located at 3535 General Atomics Court, San Diego, California. The Existing Premises are more particularly described in the Lease. Capitalized terms used herein without definition shall have the meanings defined for such terms in the Lease.

B. Landlord and Tenant desire, subject to the terms and conditions set forth below, to amend the Lease to, among other things, expand the size of the Existing Premises by adding that portion of the first floor of the Building containing approximately 24,197 rentable square feet, as shown on **Exhibit A** attached to this Sixth Amendment (the "**Third Expansion Premises**").

NOW, THEREFORE, in consideration of the foregoing Recitals, which are incorporated herein by this reference, the mutual promises and conditions contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant hereby agree as follows:

- 1. Third Expansion Premises.** In addition to the Existing Premises, commencing on the Third Expansion Premises Commencement Date, Landlord leases to Tenant, and Tenant leases from Landlord, the Third Expansion Premises.
- 2. Delivery.** Landlord shall use diligent efforts to achieve Substantial Completion of Landlord's Work and deliver the Third Expansion Premises ("**Delivery**" or "**Deliver**") to Tenant on or before the Target Third Expansion Premises Commencement Date (which date shall be subject to Force Majeure delays and Tenant Delays). If Landlord fails to timely Deliver the Third Expansion Premises, Landlord shall not be liable to Tenant for any loss or damage resulting therefrom, and the Lease with respect to the Third Expansion Premises shall not be void or voidable. As used herein, the terms "**Landlord's Work**," "**Tenant Delays**" and "**Substantial Completion**" shall have the meanings set forth for such terms in the work letter attached to this Sixth Amendment as **Exhibit B** ("**Third Expansion Premises Work Letter**").

The "**Third Expansion Premises Commencement Date**" shall be the earlier to occur of: (i) the date that Landlord delivers the Third Expansion Premises to Tenant, or (ii) the date that Landlord could have delivered to Third Expansion Premises to Tenant but for Tenant Delays. The "**Target Third Expansion Premises Commencement Date**" shall be January 1, 2019. Upon request of Landlord, Tenant shall (absent manifest error) execute and deliver a written acknowledgment of the Third Expansion Premises Commencement Date and the expiration date in a form substantially similar to the form of the "Acknowledgement of Commencement Date" attached to the Lease as **Exhibit D**; provided, however, Tenant's failure to execute and deliver such acknowledgment shall not affect Landlord's rights hereunder.

Except as set forth in the Third Expansion Premises Work Letter: (i) Tenant shall accept the Third Expansion Premises in their condition as of the Third Expansion Premises Commencement Date, subject to all applicable Legal Requirements; (ii) Landlord shall have no obligation for any defects in the Third Expansion Premises; and (iii) Tenant's taking possession of the Third Expansion Premises shall be conclusive evidence that Tenant accepts the Third Expansion Premises and that the Third Expansion Premises were in good condition at the time possession was taken.

Tenant agrees and acknowledges that, except as otherwise expressly set forth in this Sixth Amendment or the Third Expansion Premises Work Letter, neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the condition of all or any portion of the Third Expansion Premises, and/or the suitability of the Third Expansion Premises for the conduct of Tenant's business, and Tenant waives any implied warranty that the Third Expansion Premises are suitable for the Permitted Use.

3. **Premises; Rentable Area of Premises and Building.** As of Third Expansion Premises Commencement Date, the defined terms "Premises" and "Rentable Area of Premises" on page 1 of the Lease shall be deleted in their entirety and replaced with the following:

"Premises: That portion of the Building, containing approximately 72,121 rentable square feet, consisting of (i) approximately 18,813 rentable square feet located on the western half of the second floor of the Building ("**Second Floor Premises**"), (ii) approximately 4,871 rentable square feet located on the first floor of the Building ("**Expansion Premises**"), (iii) approximately 24,240 rentable square feet located on the second floor of the Building ("**Second Expansion Premises**"), and (iv) approximately 24,197 rentable square feet located on the first floor of the Building ("**Third Expansion Premises**"), all as determined by Landlord, as shown on **Exhibit A.**"

"Rentable Area of Premises: 72,121 sq. ft."

As of the date Third Expansion Premises Commencement Date, **Exhibit A** to the Lease shall be amended to include the Third Expansion Premises as shown on **Exhibit A** attached to this Sixth Amendment.

4. **Base Rent.**

a. **Existing Premises.** Tenant shall continue paying Base Rent with respect to the Existing Premises pursuant to the terms of the Lease through June 30, 2023. Commencing July 1, 2023, through December 31, 2023, Tenant shall continue to pay monthly Base Rent at the same rate per rentable square foot that Tenant is required to pay for the month of June 2023. Commencing on January 1, 2024, and on each January 1st thereafter during the Base Term (each, an "**Existing Premises Adjustment Date**"), Base Rent payable with respect to the Existing Premises shall be increased by multiplying the Base Rent payable with respect to the Existing Premises immediately before such Existing Premises Adjustment Date by 3% (the "**Rent Adjustment Percentage**") and adding the resulting amount to the Base Rent payable with respect to the Existing Premises immediately before such Existing Premises Adjustment Date. Base Rent with respect to the Existing Premises, as so adjusted, shall thereafter be due as provided herein.

b. **Third Expansion Premises.** Commencing on the Third Expansion Premises Commencement Date, Tenant shall pay Base Rent with respect to the Third Expansion Premises in the amount of \$4.35 per rentable square foot of the Third Expansion Premises per month. On each annual anniversary of the Third Expansion Premises Commencement Date (each, a "**Third Expansion Premises Adjustment Date**"), Base Rent payable with respect to the Third Expansion Premises shall be increased by multiplying the Base Rent payable with respect to the Third Expansion Premises immediately before such Third Expansion Premises Adjustment Date by the Rent Adjustment Percentage and adding the resulting amount to the Base Rent payable

with respect to the Third Expansion Premises immediately before such Third Expansion Adjustment Date. Base Rent with respect to the Third Expansion Premises, as so adjusted, shall thereafter be due as provided herein.

Notwithstanding anything to the contrary contained herein, so long as no Default has occurred and is continuing under the Lease, Tenant shall not be required to pay Base Rent with respect to the Third Expansion Premises only for the period commencing on the Third Expansion Premises Commencement Date through the expiration of the 6th month following the Third Expansion Premises Commencement Date (the "**Abatement Period**"). Tenant shall commence paying full Base Rent with respect to the Third Expansion Premises, as adjusted pursuant to this Section 4(b), on the first day of the 7th month after the Third Expansion Premises Commencement Date. Notwithstanding anything to the contrary contained herein, Tenant shall continue to pay Operating Expenses, Utilities and janitorial expenses for the Premises (the Existing Premises and the Third Expansion Premises) during the Abatement Period. For the avoidance of doubt, during the Abatement Period, Tenant shall be required to pay administration rent each month equal to the amount of the administration rent that Tenant would have been required to pay pursuant to Section 5 of the original Lease in the absence of there being an Abatement Period with respect to Third Expansion Premises.

5. **Tenant's Share.** As of the Third Expansion Premises Commencement Date, the defined terms "**Tenant's Share of Operating Expenses for the Building**" and "**Tenant's Share of Operating Expenses for the Project**" on page 1 of the Lease shall be deleted in their entirety and replaced with the following:

"**Tenant's Share of Operating Expenses for the Building: 100%**"

"**Tenant's Share of Operating Expenses for the Project: 34.58%**"

For clarity, the percentage shares set forth above are based upon Tenant's leasing of 100% of the total rentable square footage of the Building, but specifically excluding the following: the fitness center, conference center and restaurant (i.e., Green Acres) located within the Building (collectively, the "**Building Amenities**"). Rather, the square footage of the Building Amenities, along with the square footage of the conference rooms located at 3565 General Atomics Court, are allocated as Common Area among the tenants of the Project.

6. **Security Deposit.** As of the date of this Sixth Amendment, the defined term "**Security Deposit**" on Page 1 of the Lease is deleted in its entirety and replaced with the following:

"**Security Deposit: \$177,359.00**"

Landlord currently holds a Security Deposit in the amount of \$72,102.00 under the Lease. Concurrently with Tenant's delivery of a signed original of this Sixth Amendment to Landlord, Tenant shall deliver to Landlord an amended Letter of Credit which increases the amount of the existing Letter of Credit being held by Landlord to \$177,359.00 or an additional Letter of Credit in the amount of \$105,257.

7. **Base Term.** As of the Third Expansion Premises Commencement Date, the defined term "**Base Term**" on page 1 of the Lease shall be deleted in its entirety and replaced with the following:

"**Base Term:** Commencing (i) with respect to the Second Floor Premises on June 10, 2010, (ii) with respect to the Expansion Premises on the Expansion Premises Commencement Date, (iii) with respect to the Second Expansion Premises on the Second Expansion Premises Commencement Date, and (iv) with respect to the Third Expansion Premises on the Third

8. **The Alexandria Amenities.** Section 8 of the Fifth Amendment is hereby deleted in its entirety and replaced with the following:

“8. **The Alexandria Amenities.**

a. **Generally.** ARE-SD Region No. 17, LLC, a Delaware limited liability company (“**The Alexandria Landlord**”) has constructed certain amenities at the property owned by The Alexandria Landlord located at 10996 Torreyana Road, San Diego, California (“**The Alexandria**”), which, as of the date of this Sixth Amendment, include, without limitation, shared conference facilities (“**Shared Conference Facilities**”), a fitness center (“**Fitness Center**”) and restaurant (collectively, the “**Amenities**”) for non-exclusive use by (a) Tenant, (b) other tenants of the Project, (c) Landlord, (d) the tenants of The Alexandria Landlord, (e) The Alexandria Landlord, (e) other affiliates of Landlord, The Alexandria Landlord and Alexandria Real Estate Equities, Inc. (“**ARE**”), (f) the tenants of such other affiliates of Landlord, The Alexandria Landlord and ARE, and (g) any other parties permitted by The Alexandria Landlord (collectively, “**Users**”). Landlord, The Alexandria Landlord, ARE, and all affiliates of Landlord, The Alexandria Landlord and ARE may be referred to collectively herein as the “**ARE Parties**.” Notwithstanding anything to the contrary contained herein, Tenant acknowledges and agrees that The Alexandria Landlord shall have the right, at the sole discretion of The Alexandria Landlord, to not make the Amenities available for use by some or all currently contemplated Users (including Tenant). The Alexandria Landlord shall have the sole right to determine all matters related to the Amenities including, without limitation, relating to the reconfiguration, relocation, modification or removal of any of the Amenities at The Alexandria and/or to revise, expand or discontinue any of the services (if any) provided in connection with the Amenities. Tenant acknowledges and agrees that Landlord has not made any representations or warranties regarding the availability of the Amenities and that Tenant is not entering into this Sixth Amendment relying on the continued availability of the Amenities to Tenant.

b. **License.** Commencing on the Second Expansion Premises Commencement Date, and so long as The Alexandria and the Project continue to be owned by affiliates of ARE, Tenant shall have the non-exclusive right to the use of the available Amenities in common with other Users pursuant to the terms of this Section 8. Fitness center passes shall be issued to Tenant for all full time employees of Tenant employed at the Premises. Commencing on the Third Expansion Premises Commencement Date, Tenant shall (i) commence paying Landlord a fixed fee (“**Amenities Fee**”) equal to \$0.18 per rentable square foot of the Third Expansion Premises per month, which Amenities Fee shall be payable on the first day of each month during the Term whether or not Tenant elects to use any or all of the Amenities, and (ii) continue paying the Amenities Fee with respect to the Existing Premises in the amount of \$0.10 per rentable square foot of the Existing Premises per month, which Amenities Fee shall be payable on the first day of each month during the Term whether or not Tenant elects to use any or all of the Amenities. The Amenities Fee payable with respect to the Third Expansion Premises and the Existing Premises, respectively, shall be increased annually by 3% including, if applicable, during each Extension Term. Notwithstanding anything to the contrary contained herein, if Tenant exercises its Extension Option under the Lease, then commencing on the commencement date of the Extension Term, Tenant shall commence paying the Amenities Fee with respect to the Existing Premises at the same rate per rentable square foot that Tenant is then paying with respect to the Third Expansion Premises (as adjusted pursuant to this paragraph).

If both the Shared Conference Facilities and the Fitness Center become materially unavailable for use by Tenant (for any reason other than a Default by Tenant under this Lease or the default by Tenant of any agreement(s) relating to the use of the Amenities by Tenant) for a period in excess of 30 consecutive days, then, commencing on the date that both the Shared Conference Facilities and the Fitness Center in their entirety become materially unavailable for use by Tenant and continuing for the period that both the Shared Conference Facilities and the Fitness Center in their entirety remain materially unavailable for use by Tenant, the Amenities Fee then-currently payable by Tenant shall be abated.

c. **Shared Conference Facilities.** Use by Tenant of the Shared Conference Facilities and restaurant at The Alexandria shall be in common with other Users with scheduling procedures reasonably determined by The Alexandria Landlord or The Alexandria Landlord's then designated event operator ("**Event Operator**"). Tenant's use of the Shared Conference Facilities shall be subject to the payment by Tenant to The Alexandria Landlord of a fee equal to The Alexandria Landlord's quoted rates for the usage of the Shared Conference Facilities in effect at the time of Tenant's scheduling. Tenant's use of the conference rooms in the Shared Conference Area shall be subject to availability and The Alexandria Landlord (or, if applicable, Event Operator) reserves the right to exercise its reasonable discretion in the event of conflicting scheduling requests among Users. Tenant hereby acknowledges that (i) Biocom/San Diego, a California non-profit corporation ("**Biocom**") has the right to reserve the Shared Conference Facilities and any reservable dining area(s) included within the Amenities for up to 50% of the time that such Shared Conference Facilities and reservable dining area(s) are available for use by Users each calendar month, and (ii) Illumina, Inc., a Delaware corporation, has the exclusive use of the main conference room within the Shared Conference Facilities for up to 4 days per calendar month.

Tenant shall be required to use the food service operator designated by The Alexandria Landlord at The Alexandria (the "**Designated Food and Beverage Operator**") for any food and/or beverage service or catered events held by Tenant in the Shared Conference Facilities. As of the date of this Second Amendment, the Designated Food and Beverage Operator is The Farmer and the Seahorse. The Alexandria Landlord has the right, in its sole and absolute discretion, to change the Designated Food and Beverage Operator at any time. Tenant may not use any vendors other than the Designated Food and Beverage Operator nor may Tenant supply its own food and/or beverages in connection with any food and/or beverage service or catered events held by Tenant in the Shared Conference Facilities.

Tenant shall, at Tenant's sole cost and expense, (i) be responsible for the set-up of the Shared Conference Facilities in connection with Tenant's use (including, without limitation ensuring that Tenant has a sufficient number of chairs and tables and the appropriate equipment), and (ii) surrender the Shared Conference Facilities after each time that Tenant uses the Shared Conference Facilities free of Tenant's personal property, in substantially the same set up and same condition as received, and free of any debris and trash. If Tenant fails to restore and surrender the Shared Conference Facilities as required by sub-section (ii) of the immediately preceding sentence, such failure shall constitute a "**Shared Facilities Default.**" Each time that Landlord reasonably determines that Tenant has committed a Shared Facilities Default, Tenant shall be required to pay Landlord a penalty within 5 days after notice from Landlord of such Shared Facilities Default. The penalty payable by Tenant in connection with the first Shared Facilities Default shall be \$200. The penalty payable shall increase by \$50 for each subsequent Shared Facilities Default (for the avoidance of doubt, the penalty shall be \$250 for the second Shared Facilities Default, shall be \$300 for the third Shared Facilities Default, etc.). In addition to the foregoing, Tenant shall be responsible for reimbursing The

Alexandria Landlord or Landlord, as applicable, for all costs expended by The Alexandria Landlord or Landlord, as applicable, in repairing any damage to the Shared Conference Facilities, the Amenities, or The Alexandria caused by Tenant or any Tenant Related Party. The provisions of this Section 9(c) shall survive the expiration or earlier termination of the Lease.

d. **Restaurant.** Tenant's employees that have been issued an access card to The Alexandria shall have the right, along with other Users, to access and use the restaurant located at The Alexandria.

e. **Rules and Regulations.** Tenant shall be solely responsible for paying for any and all ancillary services (e.g., audio visual equipment) provided to Tenant, all food services operators and any other third party vendors providing services to Tenant at The Alexandria. Tenant shall use the Amenities (including, without limitation, the Shared Conference Facilities) in compliance with all applicable Legal Requirements and any reasonable rules and regulations imposed by The Alexandria Landlord or Landlord from time to time and in a manner that will not interfere with the rights of other Users. The use of Amenities other than the Shared Conference Facilities by employees of Tenant shall be in accordance with the terms and conditions of the standard licenses, indemnification and waiver agreement in each case as reasonably required by The Alexandria Landlord or the operator of the Amenities to be executed by all persons wishing to use such Amenities. Neither The Alexandria Landlord nor Landlord (nor, if applicable, any other affiliate of Landlord) shall have any liability or obligation for the breach of any rules or regulations by other Users with respect to the Amenities. Tenant shall not make any alterations, additions, or improvements of any kind to the Shared Conference Facilities, the Amenities or The Alexandria.

Tenant acknowledges and agrees that The Alexandria Landlord shall have the right at any time and from time to time to reconfigure, relocate, modify or remove any of the Amenities at The Alexandria and/or to revise, expand or discontinue any of the services (if any) provided in connection with the Amenities.

f. **Waiver of Liability and Indemnification.** Tenant warrants that it will use reasonable care to prevent damage to property and injury to persons while on The Alexandria. Tenant waives any claims it or any Tenant Parties may have against any ARE Parties relating to, arising out of or in connection with the Amenities and any entry by Tenant and/or any Tenant Parties onto The Alexandria, and Tenant releases and exculpates all ARE Parties from any liability relating to, arising out of or in connection with the Amenities and any entry by Tenant and/or any Tenant Parties onto The Alexandria. Tenant hereby agrees to indemnify, defend, and hold harmless the ARE Parties from any claim of damage to property or injury to person relating to, arising out of or in connection with (i) the use of the Amenities by Tenant or any Tenant Parties, and (ii) any entry by Tenant and/or any Tenant Parties onto The Alexandria, except to the extent caused by the negligence or willful misconduct of ARE Parties. The provisions of this Section 8(f) shall survive the expiration or earlier termination of the Lease.

g. **Insurance.** As of the Expansion Premises Commencement Date, Tenant shall cause The Alexandria Landlord to be named as an additional insured under the commercial general liability policy of insurance that Tenant is required to maintain pursuant to Section 17 of the original Lease."

9. **Right to Expand.** Section 9 of the Fifth Amendment is hereby deleted in its entirety and replaced with the following:

“9. **Right to Expand.**

a. **Right of First Refusal.** So long as Tenant is then leasing and occupying no less than 100% of the Premises, each time during the Base Term that Landlord intends to accept a written proposal or deliver a proposal or counter proposal which Landlord would be willing to accept (the “**Pending Deal**”) to lease all or a portion of the ROFR Space (as hereinafter defined) to a third party (for other than fitness, restaurant, conference or event operation, or other amenity uses), Landlord shall deliver to Tenant written notice (the “**Pending Deal Notice**”) of the existence of such Pending Deal and the material terms of such Pending Deal (which material terms shall include the proposed rental rate for the ROFR Space). For purposes of this Section 9(a), “**ROFR Space**” shall mean any space in the Building which, as of the date of the Sixth Amendment is being utilized as an amenity space, which is not occupied by a tenant or which is occupied by a then existing tenant that does not wish to renew (whether or not such tenant has a right to renew) its occupancy of such space. Tenant shall be entitled to exercise its right under this Section 9(a) only with respect to the entire ROFR Space described in such Pending Deal Notice (“**Identified Space**”). Within 10 days after Tenant’s receipt of the Pending Deal Notice, Tenant shall deliver to Landlord written notice (the “**Space Acceptance Notice**”) if Tenant elects to lease the Identified Space. Tenant’s right to receive the Pending Deal Notice and election to lease or not lease the Identified Space pursuant to this Section 9(a) is hereinafter referred to as the “**Right of First Refusal.**” If Tenant elects to lease the Identified Space described in the Pending Deal Notice by delivering the Space Acceptance Notice within the required 10 day period, Tenant shall be deemed to agree to lease the Identified Space on the same general terms and conditions as the Lease except that the terms of the Lease shall be modified to reflect the terms of the Pending Deal Notice for the rental of the Identified Space. Tenant acknowledges that the term of the Lease with respect to the Identified Space and the Term of the Lease with respect to the then-existing Premises may not be co-terminous. Notwithstanding anything to the contrary contained herein, in no event shall the Work Letter, the Second Expansion Premises Work Letter or the Third Expansion Premises Work Letter apply to the Identified Space. If Tenant fails to deliver a Space Acceptance Notice to Landlord within the required 10 day period, Tenant shall be deemed to have waived its rights under this Section 9(a) to lease the Identified Space, and Landlord shall have the right to lease the Identified Space to any third party on any terms and conditions acceptable to Landlord. Notwithstanding the foregoing, Tenant’s Right of First Refusal shall be immediately restored, and Landlord shall deliver to Tenant an additional Pending Deal Notice in accordance with this Section 9(a), with respect to the Identified Space if (i) Landlord fails to enter into an agreement to lease the Identified Space to a third party within 6 months after Landlord’s delivery to Tenant of the Pending Deal Notice applicable to such Identified Space (“**Free Period**”), or (ii) if at any time within such Free Period, Landlord intends to lease the Identified Space to a third party at an effective base rental rate for the Identified Space which is less than 95% of the effective base rental rate provided for in the Pending Deal Notice applicable to such Identified Space. Tenant’s Right of First Refusal shall be ongoing during the Base Term; provided, however that Tenant shall have no right to exercise the Right of First Refusal and the provisions of this Section 9(a) shall no longer apply after the date that is 12 months prior to the expiration of the Base Term if Tenant has not exercised its Extension Right pursuant to Section 10 of the Sixth Amendment or following Tenant’s delivery of a Termination Notice pursuant to Section 11 of the Sixth Amendment.

b. **Amended Lease.** If Tenant fails to timely deliver a Space Exercise Notice, then Tenant shall be deemed to have waived its right to Lease such Identified Space subject to the terms of Section 9(a). If Landlord tenders to Tenant an amendment to the Lease

setting forth the terms for the rental of the Identified Space consistent with those set forth in the Pending Deal Notice and otherwise consistent with the terms of the Lease and Tenant fails to execute such Lease amendment within 15 business days following such tender, Tenant shall be deemed to have forever waived its right to lease such Identified Space.

c. **Exceptions.** Notwithstanding the above, the Right of First Refusal shall, at Landlord's option, not be in effect and may not be exercised by Tenant:

(i) during any period of time that Tenant is in Default under any provision of the Lease; provided, however, that Landlord has provided written notice to Tenant of such Default in accordance with the Lease; or

(ii) if Tenant has been in Default under any provision of the Lease 3 or more times, whether or not the Defaults are cured, during the 12 month period prior to the date on which Tenant seeks to exercise the Right of First Refusal; provided, however, that Landlord has provided written notice to Tenant of each such Default in accordance with the Lease.

d. **Termination.** The Right of First Refusal shall, at Landlord's option, terminate and be of no further force or effect even after Tenant's due and timely exercise of the Right of First Refusal if, after such exercise, but prior to the commencement date of the lease of the Identified Space, (i) Tenant fails to timely cure any Default by Tenant under the Lease; or (ii) Tenant has Defaulted 3 or more times during the period from the date of the exercise of the Right of First Refusal to the date of the commencement of the lease of the Identified Space, whether or not such Defaults are cured; provided, however, that in each such case, Landlord has provided written notice to Tenant of each such Default in accordance with the Lease.

e. **Rights Personal.** The Right of First Refusal is personal to Tenant and is not assignable without Landlord's consent, which may be granted or withheld in Landlord's sole discretion separate and apart from any consent by Landlord to an assignment of Tenant's interest in the Lease, except that they may be assigned in connection with any Permitted Assignment of the Lease.

f. **No Extensions.** The period of time within which the Right of First Refusal may be exercised shall not be extended or enlarged by reason of Tenant's inability to exercise the Right of First Refusal."

10. Right to Extend Term. Section 10 of the Fifth Amendment is hereby deleted in its entirety and replaced with the following:

"10. **Right to Extend Term.** Tenant shall have the right to extend the Term of the Lease upon the following terms and conditions:

a. **Extension Right.** Tenant shall have 1 right (the "**Extension Right**") to extend the term of the Lease for 5 years (the "**Extension Term**") on the same terms and conditions as the Lease (other than with respect to Base Rent, the Work Letter, the Second Expansion Premises Work Letter and the Third Expansion Premises Work Letter) by giving Landlord written notice of its election to exercise the Extension Right at least 12 months prior to the expiration of the Base Term of the Lease.

Upon the commencement of the Extension Term, Base Rent shall be payable at the Market Rate (as defined below). Base Rent shall thereafter be adjusted on each annual anniversary of the commencement of such Extension Term by a percentage as determined by Landlord and agreed to by Tenant at the time the Market Rate is determined. As used herein, "**Market Rate**" shall mean the rate that comparable landlords of comparable buildings have accepted in current transactions from non-equity

(i.e., not being offered equity in the buildings) and nonaffiliated tenants of similar financial strength for space of comparable size, quality (including all Tenant Improvements, Alterations and other improvements) and floor height in Class A laboratory/office buildings in the Torrey Pines area of San Diego for a comparable term, with the determination of the Market Rate to take into account all relevant factors, including tenant inducements, views, available amenities (including, without limitation, the Amenities (as defined in the Lease), age of the Building, age of mechanical systems serving the Premises, parking costs, leasing commissions, allowances or concessions, if any.

If, on or before the date which is 270 days prior to the expiration of the Base Term of this Lease, Tenant has not agreed with Landlord's determination of the Market Rate and the rent escalations during the Extension Term after negotiating in good faith, Tenant shall be deemed to have elected arbitration as described in Section 10(b). Tenant acknowledges and agrees that, if Tenant has elected to exercise the Extension Right by delivering notice to Landlord as required in this Section 10(a), Tenant shall have no right thereafter to rescind or elect not to extend the term of the Lease for the Extension Term.

b. **Arbitration.**

(i) Within 10 days of Tenant's notice to Landlord of its election (or deemed election) to arbitrate the Market Rate, each party shall deliver to the other a proposal containing the Market Rate that the submitting party believes to be correct ("**Extension Proposal**"). If either party fails to timely submit an Extension Proposal, the other party's submitted proposal shall determine the Base Rent for the Extension Term. If both parties submit Extension Proposals, then Landlord and Tenant shall meet within 7 days after delivery of the last Extension Proposal and make a good faith attempt to mutually appoint a single Arbitrator (and defined below) to determine the Market Rate. If Landlord and Tenant are unable to agree upon a single Arbitrator, then each shall, by written notice delivered to the other within 10 days after the meeting, select an Arbitrator. If either party fails to timely give notice of its selection for an Arbitrator, the other party's submitted proposal shall determine the Base Rent for the Extension Term. The 2 Arbitrators so appointed shall, within 5 business days after their appointment, appoint a third Arbitrator. If the 2 Arbitrators so selected cannot agree on the selection of the third Arbitrator within the time above specified, then either party, on behalf of both parties, may request such appointment of such third Arbitrator by application to any state court of general jurisdiction in the jurisdiction in which the Premises are located, upon 10 days prior written notice to the other party of such intent.

(ii) The decision of the Arbitrator(s) shall be made within 30 days after the appointment of a single Arbitrator or the third Arbitrator, as applicable. The decision of the single Arbitrator shall be final and binding upon the parties. The average of the two closest Arbitrators in a three Arbitrator panel shall be final and binding upon the parties. Each party shall pay the fees and expenses of the Arbitrator appointed by or on behalf of such party and the fees and expenses of the third Arbitrator shall be borne equally by both parties. If the Market Rate is not determined by the first day of the Extension Term, then Tenant shall pay Landlord Base Rent in an amount equal to the Base Rent in effect immediately prior to the Extension Term and increased by the Rent Adjustment Percentage until such determination is made. After the determination of the Market Rate, the parties shall make any necessary adjustments to such payments made by Tenant. Landlord and Tenant shall then execute an amendment recognizing the Market Rate for the Extension Term.

(iii) An "**Arbitrator**" shall be any person appointed by or on behalf of either party or appointed pursuant to the provisions hereof and: (i) shall be (A) a member of the American Institute of Real Estate Appraisers with not less than 10 years of experience in the appraisal of improved office and high tech industrial real estate in the San Diego area, or (B) a licensed commercial real estate broker with not less than 15

years experience representing landlords and/or tenants in the leasing of high tech or life sciences space in the San Diego area, (ii) devoting substantially all of their time to professional appraisal or brokerage work, as applicable, at the time of appointment and (iii) be in all respects impartial and disinterested.

c. **Rights Personal.** The Extension Right is personal to Tenant and is not assignable without Landlord's consent, which may be granted or withheld in Landlord's sole discretion separate and apart from any consent by Landlord to an assignment of Tenant's interest in the Lease, except that they may be assigned in connection with any Permitted Assignment of the Lease.

d. **Exceptions.** Notwithstanding anything set forth above to the contrary, the Extension Right shall, at Landlord's option, not be in effect and Tenant may not exercise the Extension Right:

(i) during any period of time that Tenant is in Default under any provision of the Lease; or

(ii) if Tenant has been in Default under any provision of the Lease 3 or more times, whether or not the Defaults are cured, during the 12 month period immediately prior to the date that Tenant intends to exercise the Extension Right, whether or not the Defaults are cured.

e. **No Extensions.** The period of time within which the Extension Right may be exercised shall not be extended or enlarged by reason of Tenant's inability to exercise the Extension Right.

f. **Termination.** The Extension Right shall, at Landlord's option, terminate and be of no further force or effect even after Tenant's due and timely exercise of the Extension Right, if, after such exercise, but prior to the commencement date of the Extension Term, (i) Tenant fails to timely cure any default by Tenant under the Lease; or (ii) Tenant has Defaulted 3 or more times during the period from the date of the exercise of the Extension Right to the date of the commencement of the Extension Term, whether or not such Defaults are cured."

11. **Early Termination Right.** Tenant shall have the right, subject to the provisions of this Section 11, to terminate the Lease ("**Termination Right**") with respect to the entire Premises only on the last day of the 82nd month after the Third Expansion Premises Commencement Date ("**Early Termination Date**"), so long as Tenant delivers to Landlord (a) a written notice ("**Termination Notice**"), of its election to exercise its Termination Right no less than 12 months in advance of the Early Termination Date, and (b) the payment to Landlord concurrent with Tenant's delivery of the Termination Notice to Landlord, of an early termination payment in the amount of \$2,500,000 (collectively, the "**Early Termination Payment**"). If Tenant timely and properly exercises the Termination Right and delivers the Early Termination Payment, Tenant shall vacate the Premises and deliver possession thereof to Landlord in the condition required by the terms of this Lease on or before the Early Termination Date and Tenant shall have no further obligations under the Lease after the Early Termination Date except for those accruing prior to the Early Termination Date and those which, pursuant to the terms of this Lease, survive the expiration or early termination of this Lease. If Tenant does not deliver to Landlord the Termination Notice and the Early Termination Payment within the time period provided in this paragraph, Tenant shall be deemed to have waived its Termination Right and the provisions of this Section 11 shall have no further force or effect.

12. **Signage.** Commencing on the Third Expansion Premises Commencement Date, Tenant shall have the right, at Tenant's sole cost and expense, to signage bearing Tenant's name and logo on a location at the top of the Building reasonably acceptable to Landlord and Tenant (the "**Building Sign**"). Notwithstanding the foregoing, Tenant acknowledges and agrees that the Building Sign

including, without limitation, the size, color and type, shall be subject to Landlord's prior written approval, which shall not be unreasonably withheld and shall be consistent with applicable Legal Requirements. Tenant shall be responsible, at Tenant's sole cost and expense, for the installation of the Building Sign, maintenance of the Building Sign, for the removal of the Building Sign at the expiration or earlier termination of the Lease and for the repair of all damage resulting from such removal.

13. **Parking.** Commencing on the Third Expansion Premises Commencement Date, in addition to the parking spaces to which Tenant is entitled under the Lease, Tenant shall be entitled to use its pro rata share of unreserved parking spaces with respect to the Third Expansion Premises in those areas of the Project designated for non-reserved parking. Commencing on the Third Expansion Premises Commencement Date, Tenant shall have the right to use all of the parking spaces in the parking area located under the Building, which parking spaces shall be counted against Tenant's pro rata share of parking spaces.
14. **California Accessibility Disclosure.** For purposes of Section 1938(a) of the California Civil Code, Landlord hereby discloses to Tenant, and Tenant hereby acknowledges, that the Project has not undergone inspection by a Certified Access Specialist (CASp). In addition, the following notice is hereby provided pursuant to Section 1938(e) of the California Civil Code: "A Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the subject premises, the commercial property owner or lessor may not prohibit the lessee or tenant from obtaining a CASp inspection of the subject premises for the occupancy or potential occupancy of the lessee or tenant, if requested by the lessee or tenant. The parties shall mutually agree on the arrangements for the time and manner of the CASp inspection, the payment of the fee for the CASp inspection, and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the premises." In furtherance of and in connection with such notice: (i) Tenant, having read such notice and understanding Tenant's right to request and obtain a CASp inspection, hereby elects not to obtain such CASp inspection and forever waives its rights to obtain a CASp inspection with respect to the Premises, Building and/or Project to the extent permitted by Legal Requirements; and (ii) if the waiver set forth in clause (i) hereinabove is not enforceable pursuant to Legal Requirements, then Landlord and Tenant hereby agree as follows (which constitutes the mutual agreement of the parties as to the matters described in the last sentence of the foregoing notice): (A) Tenant shall have the one-time right to request for and obtain a CASp inspection, which request must be made, if at all, in a written notice delivered by Tenant to Landlord; (B) any CASp inspection timely requested by Tenant shall be conducted (1) at a time mutually agreed to by Landlord and Tenant, (2) in a professional manner by a CASp designated by Landlord and without any testing that would damage the Premises, Building or Project in any way, and (3) at Tenant's sole cost and expense, including, without limitation, Tenant's payment of the fee for such CASp inspection, the fee for any reports prepared by the CASp in connection with such CASp inspection (collectively, the "**CASp Reports**") and all other costs and expenses in connection therewith; (C) the CASp Reports shall be delivered by the CASp simultaneously to Landlord and Tenant; (D) Tenant, at its sole cost and expense, shall be responsible for making any improvements, alterations, modifications and/or repairs to or within the Premises to correct violations of construction-related accessibility standards including, without limitation, any violations disclosed by such CASp inspection; and (E) if such CASp inspection identifies any improvements, alterations, modifications and/or repairs necessary to correct violations of construction-related accessibility standards relating to those items of the Building and Project located outside the Premises that are Landlord's obligation to repair as set forth in this Lease, then Landlord shall perform such improvements, alterations, modifications and/or repairs as and to the extent required by Legal Requirements to correct such violations, and Tenant shall reimburse Landlord for the cost of such improvements, alterations, modifications and/or repairs within 10 business days after Tenant's receipt of an invoice therefor from Landlord.

15. **OFAC.** Tenant is currently (a) in compliance with and shall at all times during the Term of the Lease remain in compliance with the regulations of the Office of Foreign Assets Control (“**OFAC**”) of the U.S. Department of Treasury and any statute, executive order, or regulation relating thereto (collectively, the “**OFAC Rules**”), (b) not listed on, and shall not during the term of the Lease be listed on, the Specially Designated Nationals and Blocked Persons List, Foreign Sanctions Evaders List, or the Sectoral Sanctions Identification List, which are all maintained by OFAC and/or on any other similar list maintained by OFAC or other governmental authority pursuant to any authorizing statute, executive order, or regulation, and (c) not a person or entity with whom a U.S. person is prohibited from conducting business under the OFAC Rules.
16. **Brokers.** Landlord and Tenant each represents and warrants that it has not dealt with any broker, agent or other person (collectively, “**Broker**”) in connection with the transaction reflected in this Sixth Amendment and that no Broker brought about this transaction, other than Hughes Marino and Cushman & Wakefield. Landlord and Tenant each hereby agrees to indemnify and hold the other harmless from and against any claims by any Broker, other than Hughes Marino and Cushman & Wakefield claiming a commission or other form of compensation by virtue of having dealt with Tenant or Landlord, as applicable, with regard to this Sixth Amendment.
17. **Miscellaneous.**
- a. This Sixth Amendment is the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous oral and written agreements and discussions. This Sixth Amendment may be amended only by an agreement in writing, signed by the parties hereto.
- b. This Sixth Amendment is binding upon and shall inure to the benefit of the parties hereto, and their respective successors and assigns.
- c. This Sixth Amendment may be executed in 2 or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature process complying with the U.S. federal ESIGN Act of 2000) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes. Electronic signatures shall be deemed original signatures for purposes of this Sixth Amendment and all matters related thereto, with such electronic signatures having the same legal effect as original signatures.
- d. The signature page of any counterpart may be detached therefrom without impairing the legal effect of the signature(s) thereon provided such signature page is attached to any other counterpart identical thereto except having additional signature pages executed by other parties to this Sixth Amendment attached thereto.
- e. Except as amended and/or modified by this Sixth Amendment, the Lease is hereby ratified and confirmed and all other terms of the Lease shall remain in full force and effect, unaltered and unchanged by this Sixth Amendment. In the event of any conflict between the provisions of this Sixth Amendment and the provisions of the Lease, the provisions of this Sixth Amendment shall prevail. Whether or not specifically amended by this Sixth Amendment, all of the terms and provisions of the Lease are hereby amended to the extent necessary to give effect to the purpose and intent of this Sixth Amendment.

[Signatures are on the next page.]

IN WITNESS WHEREOF, the parties hereto have executed this Sixth Amendment as of the day and year first above written.

LANDLORD:

ARE-3535/3565 GENERAL ATOMICS COURT, LLC,
a Delaware limited liability company

By: ALEXANDRIA REAL ESTATE EQUITIES, INC.,
a Maryland corporation,
managing member

By: /s/ Eric Johnson

Its: Senior Vice President – Real Estate Legal Affairs

TENANT:

FATE THERAPEUTICS, INC.,
a Delaware corporation

By: /s/ J. Scott Wolchko

Name: J.Scott Wolchko

Title: President and CEO



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EXHIBIT A

Third Expansion Premises

[Graphic]



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Third Expansion Premises Work Letter

THIS THIRD EXPANSION PREMISES WORK LETTER dated May 31, 2018 (this “**Third Expansion Premises Work Letter**”) is made and entered into by and between **ARE-3535/3565 GENERAL ATOMICS COURT, LLC**, a Delaware limited liability company (“**Landlord**”), and **FATE THERAPEUTICS, INC.**, a Delaware corporation (“**Tenant**”), and is attached to and made a part of that certain Lease Agreement dated as of December 3, 2009, as amended by that certain First Amendment to Lease Agreement dated as of October 1, 2011, as amended by that certain Second Amendment to Lease Agreement dated as of September 30, 2013, as amended by that certain Third Amendment to Lease Agreement dated as of September 2, 2014, as further amended by that certain Fourth Amendment to Lease dated as of March 2, 2015, as further amended by that certain Fifth Amendment to Lease dated as of June 1, 2016, and as further amended by that certain Sixth Amendment to Lease Agreement dated of even date herewith (as amended, the “**Lease**”), by and between Landlord and Tenant. Any initially capitalized terms used but not defined herein shall have the meanings given them in the Lease.

1. **General Requirements.**

(a) **Tenant’s Authorized Representative.** Tenant designates Jessica Francis and Jim Serbia (either such individual acting alone, “**Tenant’s Representative**”) as the only persons authorized to act for Tenant pursuant to this Third Expansion Premises Work Letter. Landlord shall not be obligated to respond to or act upon any request, approval, inquiry or other communication (“**Communication**”) from or on behalf of Tenant in connection with this Third Expansion Premises Work Letter unless such Communication is in writing from Tenant’s Representative. Tenant may change either Tenant’s Representative at any time upon not less than 5 business days advance written notice to Landlord. Neither Tenant nor Tenant’s Representative shall be authorized to direct Landlord’s contractors in the performance of Landlord’s Work (as hereinafter defined).

(b) **Landlord’s Authorized Representative.** Landlord designates Michael D’Ambrosia and Eric Hedblad (either such individual acting alone, “**Landlord’s Representative**”) as the only persons authorized to act for Landlord pursuant to this Third Expansion Premises Work Letter. Tenant shall not be obligated to respond to or act upon any request, approval, inquiry or other Communication from or on behalf of Landlord in connection with this Third Expansion Premises Work Letter unless such Communication is in writing from Landlord’s Representative. Landlord may change either Landlord’s Representative at any time upon not less than 5 business days advance written notice to Tenant. Landlord’s Representative shall be the sole persons authorized to direct Landlord’s contractors in the performance of Landlord’s Work.

(c) **Architects, Consultants and Contractors.** Landlord and Tenant hereby acknowledge and agree that: (i) the general contractor for the Tenant Improvements shall be C2 Building Group, (ii) Gensler shall be the architect (the “**TI Architect**”) for the Tenant Improvements, and (iii) any subcontractors for the Tenant Improvements shall be selected by Landlord, subject to Tenant’s approval, which approval shall not be unreasonably withheld, conditioned or delayed.

2. **Tenant Improvements.**

(a) **Tenant Improvements Defined.** As used herein, “**Tenant Improvements**” shall mean all improvements to the Third Expansion Premises of a fixed and permanent nature as shown on the TI Construction Drawings, as defined in Section 2(c) below. Other than Landlord’s Work (as defined in Section 3(a) below, Landlord shall not have any obligation whatsoever with respect to the finishing of the Third Expansion Premises for Tenant’s use and occupancy.

(b) **Tenant's Space Plans.** Landlord and Tenant acknowledge and agree that that certain plan attached hereto as **Schedule 1** (the "**Space Plan**") has been approved by both Landlord and Tenant, subject to minor changes mutually agreed upon by Landlord and Tenant. Landlord and Tenant further acknowledge and agree that any changes to the Space Plan constitute a Change Request the cost of which changes shall be paid for out of the TI Fund (as defined in Section 5(e) below).

(c) **Working Drawings.** Landlord shall cause the TI Architect to prepare and deliver to Tenant for review and comment construction plans, specifications and drawings for the Tenant Improvements ("**TI Construction Drawings**"), which TI Construction Drawings shall be prepared substantially in accordance with the Space Plan. Tenant shall be solely responsible for ensuring that the TI Construction Drawings reflect Tenant's requirements for the Tenant Improvements. Tenant shall deliver its written comments on the TI Construction Drawings to Landlord not later than 10 business days after Tenant's receipt of the same; provided, however, that Tenant may not disapprove any matter that is consistent with the Space Plan without submitting a Change Request. Landlord and the TI Architect shall consider all such comments in good faith and shall, within 10 business days after receipt, notify Tenant how Landlord proposes to respond to such comments, but Tenant's review rights pursuant to the foregoing sentence shall not delay the design or construction schedule for the Tenant Improvements. Any disputes in connection with such comments shall be resolved in accordance with Section 2(d) hereof. Provided that the design reflected in the TI Construction Drawings is consistent with the Space Plan, Tenant shall approve the TI Construction Drawings submitted by Landlord, unless Tenant submits a Change Request. Once approved by Tenant, subject to the provisions of Section 4 below, Landlord shall not materially modify the TI Construction Drawings except as may be reasonably required in connection with the issuance of the TI Permit (as defined in Section 3(b) below).

(d) **Approval and Completion.** It is hereby acknowledged by Landlord and Tenant that the TI Construction Drawings must be completed and approved no later than July 6, 2018, in order for the Landlord's Work to be Substantially Complete by the Target Third Expansion Premises Commencement Date (as defined in the Lease). Upon any dispute regarding the design of the Tenant Improvements, which is not settled within 10 business days after notice of such dispute is delivered by one party to the other, Tenant may make the final decision regarding the design of the Tenant Improvements, provided (i) Tenant acts reasonably and such final decision is either consistent with or a compromise between Landlord's and Tenant's positions with respect to such dispute, (ii) that all increases in costs and expenses resulting from any such decision by Tenant shall be payable out of the TI Fund, and (iii) Tenant's decision will not affect the base Building, structural components of the Building or any Building systems. Any changes to the TI Construction Drawings following Landlord's and Tenant's approval of same requested by Tenant shall be processed as provided in Section 4 hereof.

3. **Performance of Landlord's Work.**

(a) **Definition of Landlord's Work.** As used herein, "**Landlord's Work**" shall mean the work of constructing the Tenant Improvements.

(b) **Commencement, Permitting and Progress.** Landlord shall commence construction of the Tenant Improvements upon obtaining a building permit (the "**TI Permit**") authorizing the construction of the Tenant Improvements consistent with the TI Construction Drawings approved by Tenant. The cost of obtaining the TI Permit shall be payable from the TI Fund. Tenant shall assist Landlord in obtaining the TI Permit. If any Governmental Authority having jurisdiction over the construction of Landlord's Work or any portion thereof shall impose terms or conditions upon the construction thereof that: (i) are inconsistent with Landlord's obligations hereunder, (ii) increase the cost of constructing Landlord's Work, or (iii) will materially delay the construction of Landlord's Work, Landlord and Tenant shall reasonably and in good faith seek means by which to mitigate or eliminate any such adverse terms and conditions.

During the construction of the Tenant Improvements, Landlord, Tenant's Project Manager and the general contractor (and any other parties reasonably necessary as determined by the general contractor) will meet on a weekly basis to review and discuss the progress of the Landlord's Work and any claimed



Tenant Delays, Force Majeure events or other delays in the schedule of Substantial Completion of the Landlord's Work.

(c) **Completion of Landlord's Work.** Landlord shall (i) diligently prosecute Landlord's Work, and (ii) use diligent efforts to substantially complete or cause to be substantially completed Landlord's Work in a good and workmanlike manner, in compliance in all material respects with the TI Permit, the TI Construction Drawings and applicable Legal Requirements subject, in each case, to Minor Variations and normal "punch list" items of a non-material nature that do not interfere with the use of the Third Expansion Premises ("**Substantial Completion**" or "**Substantially Complete**"). Upon Substantial Completion of Landlord's Work, Landlord shall require the TI Architect and the general contractor to execute and deliver, for the benefit of Tenant and Landlord, a Certificate of Substantial Completion in the form of the American Institute of Architects ("**AIA**") document G704. For purposes of this Third Expansion Premises Work Letter, "**Minor Variations**" shall mean any modifications reasonably required: (i) to comply with all applicable Legal Requirements and/or to obtain or to comply with any required permit (including the TI Permit); (ii) to comply with any request by Tenant for modifications to Landlord's Work; (iii) to comport with good design, engineering, and construction practices that are not material; or (iv) to make reasonable adjustments for field deviations or conditions encountered during the construction of Landlord's Work.

(d) **Selection of Materials.** Where more than one type of material or structure is indicated on the TI Construction Drawings approved by Landlord and Tenant, the option will be selected at Landlord's sole and absolute discretion. As to all building materials and equipment that Landlord is obligated to supply under this Third Expansion Premises Work Letter, Landlord shall select the manufacturer thereof in its sole and absolute discretion.

(e) **Delivery of the Third Expansion Premises.** When Landlord's Work is Substantially Complete, subject to the remaining terms and provisions of this Section 3(e) (including, without limitation, Landlord's obligation to complete any punch list items), Tenant shall accept the Third Expansion Premises. Tenant's acceptance of the Premises shall in no event limit Landlord's maintenance obligations with respect to the Third Expansion Premises pursuant to Section 13 of the Lease. Tenant's taking possession and acceptance of the Third Expansion Premises shall not constitute a waiver of: (i) any warranty with respect to workmanship (including installation of equipment) or material (exclusive of equipment provided directly by manufacturers), (ii) any non-compliance of Landlord's Work with applicable Legal Requirements, or (iii) any claim that Landlord's Work was not completed substantially in accordance with the TI Construction Drawings (subject to Minor Variations and such other changes as are permitted hereunder) (collectively, a "**Construction Defect**"). Tenant shall have one year after Substantial Completion within which to notify Landlord of any such Construction Defect discovered by Tenant, and Landlord shall use reasonable efforts to remedy or cause the responsible contractor to remedy any such Construction Defect within 30 days thereafter. Notwithstanding the foregoing, Landlord shall not be in default under the Lease if the applicable contractor, despite Landlord's reasonable efforts, fails to remedy such Construction Defect within such 30-day period. If the contractor fails to remedy such Construction Defect within a reasonable time, Landlord shall cause the Construction Defect to be remedied within a reasonable period.

Tenant shall be entitled to receive the benefit of all construction warranties and manufacturer's equipment warranties relating to equipment installed in the Third Expansion Premises. If requested by Tenant, Landlord shall attempt to obtain extended warranties from manufacturers and suppliers of such equipment, but the cost of any such extended warranties shall be borne solely by Tenant. Landlord shall promptly undertake all punch list items and shall use reasonable efforts to complete such punch list items within 30 days after the Substantial Completion of the Tenant Improvements.

(f) **Third Expansion Premises Commencement Date Delay.** Except as otherwise provided in the Lease, Delivery of the Third Expansion Premises shall occur when Landlord's Work has been Substantially Completed, except to the extent that completion of Landlord's Work shall have been actually delayed by any one or more of the following causes ("**Tenant Delay**"):

- (i) Tenant's Representative was not available within 2 business days to give or receive any Communication or to take any other action required to be taken by Tenant hereunder;
- (ii) Tenant's request for Change Requests (as defined in Section 4(a) below) whether or not any such Change Requests are actually performed;
- (iii) Construction of any Change Requests;
- (iv) Tenant's request for materials, finishes or installations requiring unusually long lead times, provided that promptly after Landlord learns of such long lead times, Landlord informs Tenant that the requested items will require unusually long lead times;
- (v) Tenant's delay in reviewing, revising or approving plans and specifications beyond the periods set forth herein;
- (vi) Tenant's delay in providing information critical to the normal progression of the Project. Tenant shall provide such information as soon as reasonably possible, but in no event longer than one week after receipt of any request for such information from Landlord;
- (vii) Tenant's delay in making payments to Landlord for Excess TI Costs (as defined in Section 5(e) below); or
- (viii) Any other act or omission by Tenant or any Tenant Party (as defined in the Lease), or persons employed by any of such persons.

If Delivery is delayed for any of the foregoing reasons, then Landlord shall cause the TI Architect to certify the date on which the Tenant Improvements would have been completed but for such Tenant Delay and such certified date shall be the date of Delivery. Landlord shall provide Tenant with written notice (which notice may be made via email) of any Tenant Delay promptly after the occurrence of the same.

4. **Changes.** Any changes requested by Tenant to the Tenant Improvements after the delivery and approval by Landlord of the Space Plan shall be requested and instituted in accordance with the provisions of this Section 4 and shall be subject to the written approval of Landlord and the TI Architect, such approval not to be unreasonably withheld, conditioned or delayed.

(a) **Tenant's Request For Changes.** If Tenant shall request changes to the Tenant Improvements ("**Changes**"), Tenant shall request such Changes by notifying Landlord in writing in substantially the same form as the AIA standard change order form (a "**Change Request**"), which Change Request shall detail the nature and extent of any such Change. Such Change Request must be signed by Tenant's Representative. Landlord shall, before proceeding with any Change, respond to Tenant as soon as is reasonably possible with an estimate of: (i) the time it will take, and (ii) the architectural and engineering fees and costs that will be incurred, to analyze such Change Request (which costs shall be paid by Tenant to the extent actually incurred, whether or not such change is implemented). Landlord shall thereafter submit to Tenant in writing, within 5 business days of receipt of the Change Request (or such longer period of time as is reasonably required depending on the extent of the Change Request), an analysis of the additional cost or savings involved, including, without limitation, architectural and engineering costs and the period of time, if any, that the Change will extend the date on which Landlord's Work will be Substantially Complete. Any such delay in the completion of Landlord's

Work caused by a Change, including any suspension of Landlord's Work while any such Change is being evaluated and/or designed, shall be Tenant Delay.

(b) **Implementation of Changes.** If Tenant: (i) approves in writing the cost or savings and the estimated extension or reduction in the time for completion of Landlord's Work, if any, and (ii) deposits with Landlord 50% of the Excess TI Costs required in connection with such Change, Landlord shall cause the approved Change to be instituted. Notwithstanding any approval or disapproval by Tenant of any estimate of the delay caused by such proposed Change, the TI Architect's determination of the amount of Tenant Delay in connection with such Change shall be final and binding on Landlord and Tenant.

5. **Costs.**

(a) **Budget For Tenant Improvements.** Before the commencement of construction of the Tenant Improvements, Landlord shall obtain a detailed breakdown by trade of the costs incurred or that will be incurred in connection with the design and construction of the Tenant Improvements (the "**Budget**"). The Budget shall be based upon the TI Construction Drawings approved by Tenant and shall include a payment to Landlord of administrative rent ("**Administrative Rent**") equal to 2% of the TI Allowance for monitoring and inspecting the construction of the Tenant Improvements and Changes, which sum shall be payable from the TI Fund (as defined in Section 5(e)). Administrative Rent shall include, without limitation, all out-of-pocket costs, expenses and fees incurred by or on behalf of Landlord arising from, out of, or in connection with monitoring the construction of the Tenant Improvements and Changes, and shall be payable out of the TI Fund. If the Budget is greater than the TI Allowance, Tenant shall deposit with Landlord the difference, in cash, prior to the commencement of construction of the Tenant Improvements or Changes, for disbursement by Landlord as described in Section 5(e).

(b) **TI Allowance.** Landlord shall provide to Tenant a tenant improvement allowance (the "**TI Allowance**") of \$1,850,000. The TI Allowance shall be disbursed in accordance with this Work Letter.

(c) **Costs Includable in TI Fund.** The TI Fund shall be used solely for the payment of design, permits and construction costs in connection with the construction of the Tenant Improvements, including, without limitation, the cost of electrical power and other utilities used in connection with the construction of the Tenant Improvements, the cost of preparing the Space Plan and the TI Construction Drawings, all costs set forth in the Budget, including Landlord's Administrative Rent, Landlord's out-of-pocket expenses, costs resulting from Tenant Delays and the cost of Changes (collectively, "**TI Costs**"). Except as expressly set forth below, the TI Fund shall not be used to purchase any furniture, personal property or other non-Building system materials or equipment, including, but not limited to, Tenant's voice or data cabling, non-ducted biological safety cabinets and other scientific equipment not incorporated into the Tenant Improvements.

(d) **Project Management Fee.** Landlord hereby agrees to pay to Serbia Consulting Group ("**Tenant's Project Manager**") a project management fee equal to \$50,000 in order for Tenant's Project Manager to serve as Tenant's project manager in connection with the Tenant Improvements ("**Project Management Fee**"). For Clarity, the Project Management Fee is in addition to the TI Allowance and not payable from the TI Fund.

(e) **Excess TI Costs.** Landlord shall have no obligation to bear any portion of the cost of any of the Tenant Improvements except to the extent of the TI Allowance. If at any time the remaining TI Costs under the Budget exceed the remaining unexpended TI Allowance, Tenant shall deposit with Landlord, as a condition precedent to Landlord's obligation to complete the Tenant Improvements, 50% of the then current TI Cost in excess of the remaining TI Allowance ("**Excess TI Costs**") and the remaining 50% of the Excess TI Costs upon Substantial Completion of the Tenant Improvements. If Tenant fails to deposit any Excess TI Costs with Landlord, Landlord shall have all of the rights and remedies set forth in the Lease for nonpayment of Rent (including, but not limited to, the right to interest at the Default Rate and the right to assess a late charge). For purposes of any litigation instituted with regard to such amounts, those amounts will be deemed Rent under the Lease. The TI Allowance and Excess TI Costs

are herein referred to as the "**TI Fund.**" Funds deposited by Tenant shall be the first disbursed to pay TI Costs. Notwithstanding anything to the contrary set forth in this Section 5(e), Tenant shall be fully and solely liable for TI Costs and the cost of Minor Variations in excess of the TI Allowance. If upon completion of the Tenant Improvements and the payment of all sums due in connection therewith there remains any undisbursed portion of the TI Fund, Tenant shall be entitled to such undisbursed TI Fund solely to the extent of any Excess TI Costs deposit Tenant has actually made with Landlord.

6. **Tenant Access.**

(a) **Tenant's Access Rights.** Landlord hereby agrees to permit Tenant (including Tenant's Representative and Tenant's Project Manager) access, at Tenant's sole risk and expense, to the Third Expansion Premises (i) 60 days prior to the Third Expansion Premises Commencement Date to perform any data cabling work and 30 days prior to the Third Expansion Premises Commencement Date to perform any other work (such data cabling and other work, "**Tenant's Work**") required by Tenant other than Landlord's Work, provided that such Tenant's Work is coordinated with the TI Architect and the general contractor, and complies with the Lease and all other reasonable restrictions and conditions Landlord may impose, and (ii) prior to the completion of Landlord's Work, to, at Tenant's election and not as an obligation, inspect and observe work in process to determine, in Tenant's estimation, if Landlord's Work proceeding in accordance with the TI Construction Drawings, the TI Permit and the schedule; all such access shall be during normal business hours or at such other times as are reasonably designated by Landlord. Any entry by Tenant shall comply with all established safety practices of Landlord's contractor and Landlord until completion of Landlord's Work and acceptance thereof by Tenant.

(b) **No Interference.** Neither Tenant nor any Tenant Party (as defined in the Lease) shall interfere with the performance of Landlord's Work, nor with any inspections or issuance of final approvals by applicable Governmental Authorities, and upon any such interference, Landlord shall have the right to exclude Tenant and any Tenant Party from the Third Expansion Premises until Substantial Completion of Landlord's Work.

(c) **No Acceptance of Third Expansion Premises.** The fact that Tenant may, with Landlord's consent, enter into the Third Expansion Premises prior to the date Landlord's Work is Substantially Complete for the purpose of performing Tenant's Work shall not be deemed an acceptance by Tenant of possession of the Third Expansion Premises, but in such event Tenant shall defend with counsel reasonably acceptable by Landlord, indemnify and hold Landlord harmless from and against any loss of or damage to Tenant's property, completed work, fixtures, equipment, materials or merchandise, and from liability for death of, or injury to, any person, caused by the act or omission of Tenant or any Tenant Party.

7. **Miscellaneous.**

(a) **Consents.** Whenever consent or approval of either party is required under this Third Expansion Premises Work Letter, that party shall not unreasonably withhold, condition or delay such consent or approval, unless expressly set forth herein to the contrary.

(b) **Modification.** No modification, waiver or amendment of this Third Expansion Premises Work Letter or of any of its conditions or provisions shall be binding upon Landlord or Tenant unless in writing signed by Landlord and Tenant.

(c) **No Default Funding.** In no event shall Landlord have any obligation to fund any of the TI Costs or perform any Landlord's Work during any period that Tenant is in Default under the Lease.

Schedule 1

Space Plan

[Graphic]

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CERTAIN CONFIDENTIAL PORTIONS OF THIS EXHIBIT WERE OMITTED AND REPLACED WITH “[***]”. A COMPLETE VERSION OF THIS EXHIBIT HAS BEEN FILED SEPARATELY WITH THE SECRETARY OF THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO AN APPLICATION REQUESTING CONFIDENTIAL TREATMENT UNDER RULE 406 OF THE SECURITIES ACT OF 1933.

AMENDED AND RESTATED EXCLUSIVE LICENSE AGREEMENT

This Amended and Restated Exclusive License Agreement (the "**Agreement**") is effective on the date of the last signature below ("**Restatement Effective Date**"), and is by and between **Memorial Sloan Kettering Cancer Center**, a New York not-for-profit corporation with principal offices at 1275 York Avenue, New York, NY 10065 (hereinafter referred to as "**MSK**"), and Fate Therapeutics, Inc., a Delaware corporation with principal offices located at 3535 General Atomics Court, Suite 200, San Diego, CA 92121 ("**LICENSEE**"). MSK and LICENSEE are sometimes referred to singly as "**Party**" and collectively as "**Parties**".

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PREAMBLE

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Exhibit A	LICENSED RIGHTS – PATENT RIGHTS AND KNOW-HOW

WITNESSETH

WHEREAS, MSK owns certain Licensed Rights (as later defined herein) and desires to have the Licensed Rights utilized in the public interest;

WHEREAS, MSK and LICENSEE are parties to that certain Exclusive License Agreement, dated August 19, 2016 (the "**Effective Date**"), pursuant to which MSK granted LICENSEE a license to certain patent rights and know-how (the "**Original Agreement**");

WHEREAS, MSK and LICENSEE now desire to amend and restate the Original Agreement in its entirety with this Agreement as of the Restatement Effective Date;

WHEREAS, concurrent with the execution of the Original Agreement, LICENSEE and MSK entered into a Sponsored Research Agreement (as may be amended in accordance with its terms, the "**SRA**"), pursuant to which the Parties are conducting a research program and LICENSEE has an option to obtain a license to any MSK Invention (as defined in the SRA) and MSK's interest as a joint owner in any Joint Invention (as defined in the SRA) and intellectual property rights therein under this Agreement on the terms and conditions that follow;

WHEREAS, concurrent with the execution of the Original Agreement, LICENSEE, MSK and Tfinity Therapeutics, Inc., a Delaware corporation (the "**Company**"), entered into a Company Option Agreement (as may be amended in accordance with its terms, the "**Company Option Agreement**"), and, concurrent with the execution of this Agreement, LICENSEE, MSK and Tfinity shall enter into a Termination Agreement (the "**Termination Agreement**"), pursuant to which, among other things, such parties shall terminate the Company Option Agreement effective as of the Restatement Effective Date.

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

ARTICLE I - DEFINITIONS

For the purpose of this Agreement, the following words and phrases shall have the following meanings:

- 1.1 “**Affiliate**” as used herein in either singular or plural means, with respect to a Party, any corporation, company, partnership, joint venture or other entity, which directly or indirectly Controls, is Controlled by or is under common Control with the specified entity. For purposes of this definition, “Control” of an entity means the direct or indirect ownership or control of at least fifty percent (50%) of the right to direct or cause the direction of the policies and management of such person or entity, whether by the ownership of stock, by contract or otherwise. In any jurisdiction where 50% control is not permitted by applicable law, the “greater than 50%” threshold shall be deemed satisfied by the possession of substantially the maximum percentage allowable in such jurisdiction. With regard to MSK, “Affiliate” shall include, without limitation, Sloan-Kettering Institute for Cancer Research and the Memorial Hospital for Cancer and Allied Diseases.
- 1.2 “**Confidential Information**” shall mean, unless otherwise expressly excluded as such pursuant to Article 9, all confidential or proprietary information disclosed by one Party to the other Party relating to and in the performance of this Agreement or any other written agreement between the Parties, including, without limitation, the SRA, including methods of manufacture or use, formulations, clinical data, test results, and research and development plans, whether in oral, graphic, electronic, or any other media or form.
- 1.3 “**Contract Quarter-Year**” shall mean the three month periods ending on March 31, June 30, September 30 and December 31 of each year.
- 1.4 “**Field of Use**” shall mean all human therapeutic uses.
- 1.5 “**Group 1 Patent Rights**” shall mean the Patent Rights arising from any patent or patent application listed in Group 1 in Exhibit A.

- 1.6 “**Group 2 Patent Rights**” shall mean the Patent Rights arising from any patent or patent application listed in Group 2 in Exhibit A.
- 1.7 “**Joint Invention**” shall mean any invention that is first conceived and reduced to practice in the course of performance of the research program conducted pursuant to the SRA and is or may be patentable or otherwise protectable under Title 35 of the United States Code, which invention is owned jointly by MSK and LICENSEE.
- 1.8 “**Licensed Invention**” shall mean any MSK Invention or Joint Invention for which LICENSEE has exercised its option in accordance with the terms of the SRA to license such MSK Invention or Joint Invention pursuant to this Agreement.
- 1.9 “**Licensed Know-How**” means tangible and intangible technical information, materials, inventions, processes, protocols, procedures, formulations, compounds, compositions, devices, methods, formulae, protocols, techniques, algorithms, software, works of authorship, designs, drawings, results, findings, ideas, concepts, creations, discoveries, developments, techniques, processes, know-how, drawings, designs, specifications, data, content, information, formulas, formulations, algorithms, software, and other technologies or subject matter of any kind, in each case, that are Confidential Information of MSK and provided by MSK to LICENSEE, including, without limitation, any of the foregoing relating to any Patent Rights.
- 1.10 “**Licensed Rights**” shall mean the Licensed Know-How and the Patent Rights.
- 1.11 “**Licensed Product**” shall mean:
- (a) any product, embodiment or material comprising a composition of matter, the making, use, sale, offer to sell, or importation of which would, but for the license granted herein or a statutory exemption such as, but not limited to, that provided by 35 U.S.C. § 271(e)(1), infringe one or more Valid Claim;

- (b) any currently existing or subsequently developed product, embodiment or material comprising a composition of matter that embodies, contains, incorporates, uses, or is made through the use of, or was in whole or in part derived from, the Licensed Know-How;
- (c) any process, the use of which would, but for the license granted herein or a statutory exemption such as, but not limited to, that provided by 35 U.S.C. § 271(e)(1), infringe one or more Valid Claim; or
- (d) any process that embodies, contains, incorporates, or uses, or was in whole or in part derived from, the Licensed Know-How.

1.12 “**License Term**” shall mean the term of this Agreement, which will commence on the Restatement Effective Date and expire upon the expiration of the last Royalty Term for all Licensed Product(s), unless earlier terminated pursuant to Article 16 of this Agreement.

1.13 “**MSK Invention**” shall mean any invention that is first conceived and reduced to practice in the course of performance of the research program conducted pursuant to the SRA and is or may be patentable or otherwise protectable under Title 35 of the United States Code, which invention is owned solely by MSK.

1.14 “**Net Sales**” means the gross invoiced amount from the sales of Licensed Products by LICENSEE, its Affiliates, or Sublicensees to Customers, less:

- (a) Freight and shipping expense (actual), including insurance, on account of sales of Licensed Products to the extent it is not charged to, or reimbursed by, the Customer;
- (b) Cash, trade or quantity discounts actually granted to Customers that are deducted solely on account of sales of Licensed Products;
- (c) Rebates actually paid, and discounts, allowances and retroactive price reductions actually granted, allowed or incurred, to individual or group purchasers of Licensed Products that are solely on account of the purchase of such Licensed Products;
- (d) Credits issued for returns, rejections, allowances, price adjustments or recalls of Licensed Products;

- (e) Government-mandated rebates and price reductions, and chargebacks, rebates or fees granted to governmental healthcare organizations, purchasing groups, wholesalers, distributors, selling agents (excluding any sales representatives of a selling party), group purchasing organizations, third party payors, other contractees and managed care entities;
- (f) Fees paid to distributors for the sale by such distributors of Licensed Products to Customers; and
- (g) Taxes (including, but not limited to sales, use, value added, consumption, import, export, excise, tariff and similar taxes), duties and other governmental charges actually incurred, paid or collected and remitted to the relevant tax authority for the sale, export, import, transfer or use of Licensed Products.

No deductions shall be taken or permitted in calculating Net Sales that depend or are based, in whole or in part, on the sale or purchase of any product or service that is not a Licensed Product, including without limitation for the practice commonly known as “bundling.”

“**Customer**” shall mean an individual or an entity that receives Licensed Product for its own end use or consumption, and not for further sale, transfer, lease, exchange or other disposition. For clarity, a transaction by and between LICENSEE, Affiliates and Sublicensees, where the intent is to then further sell, transfer, lease, exchange or dispose of Licensed Product to an individual or an entity for such individual’s or entity’s end use or consumption, shall not be considered a sale of a Licensed Product to a Customer.

1.15 “**Parent Application**” shall mean each unique patent application or invention disclosure listed in Exhibit A denoted as “Parent”. For clarity, as of the Restatement Effective Date, the patent applications or invention disclosures listed under the heading “Group 1” in Exhibit A contain one Parent Application, and the patent applications or invention disclosures listed under the heading “Group 2” in Exhibit A contain two Parent Applications.

1.16 “**Patent Family**” means those Patent Rights arising from a particular Parent Application.

1.17 "**Patent Rights**" shall mean:

- (a) (i) The U.S. and ex-U.S. patents and patent applications listed in Exhibit A, including any divisionals and continuations of these patents and patent applications; (ii) U.S. and ex-U.S. patents and patent applications covering any MSK Invention that is a Licensed Invention, including any divisionals and continuations of these patents and patent applications; and (iii) MSK's joint ownership interest in any U.S. and ex-U.S. patents and patent applications covering any Joint Invention that is a Licensed Invention, including any divisionals and continuations of these patents and patent applications;
- (b) U.S. and ex-U.S. patents that issue from or claim priority to any application included in Section 1.17(a), but not including claims in continuation-in-part applications or patents except to the extent provided in (c) below;
- (c) Claims in continuation-in-part applications or patents described in (b) above to the extent that such claims are entitled to priority to patents or patent applications included in Section 1.17(a); and
- (d) Any reissues or re-examinations of patents described in (a), (b), or (c) above.

The Patent Rights described in Section 1.17(a)(iii) and described in Section 1.17(b), (c) and (d) to the extent relating to any patent or patent application included Section 1.17(a)(iii) are referred to as "**Joint Patent Rights**". The Patent Rights other than the Joint Patent Rights are referred to as "**MSK Patent Rights**".

1.18 "**Royalty Term**" shall mean, on a Licensed Product-by-Licensed Product basis and country-by-country basis, the period from the first commercial sale of such Licensed Product in such country to the later of: (i) expiration of the last Valid Claim that would, but for the license granted or a statutory exemption such as, but not limited to, that provided by 35 U.S.C. § 271(e)(1), be infringed by the making, use, sale, offer to sell, or importation of such Licensed Product in such country; (ii) expiration of any market exclusivity period in such country granted by law with respect to such Licensed Product; or (iii) twelve (12) years from the first commercial sale in such country of such Licensed Product.

- 1.19 "**Royalty Year**" shall mean each twelve (12) month period commencing January 1 and ending December 31 during the term of this Agreement. For the first year of this Agreement, the Royalty Year shall be the period of time between the signing of the Agreement and December 31, and in the year in which this Agreement expires or terminates, the Royalty Year shall be the period of time between January 1 and the last day of the License Term.
- 1.20 "**Sublicensee**" means any person or business entity to which LICENSEE has granted a sublicense of the Licensed Rights.
- 1.21 "**Sublicensee Income**" means all consideration (*e.g.*, upfront fees, milestone payments, and other similar license fees) received by LICENSEE from a Sublicensee based on the grant to such Sublicensee of a sublicense under the Licensed Rights granted to LICENSEE under this Agreement, *but excluding* : (a) royalty payments or similar payments based on sales of Licensed Products; (b) payments made for actual costs incurred, or reimbursement of actual costs incurred, as evidenced by written documentation provided to MSK by LICENSEE or its Affiliates in the research and/or development of Licensed Products (including in connection with equipment purchases, manufacturing costs, personnel expenses and patent prosecution, defense, enforcement, maintenance and other intellectual property-related expenses); (c) *bona fide* loans; (d) payments to purchase capital stock of LICENSEE at fair market value (provided, however, that any premium consideration in excess of fair-market value will not be excluded); and (e) payments at fully-burdened cost for Licensed Products supplied by LICENSEE (or its Affiliate). It is understood that consideration received by LICENSEE pursuant to manufacturing and/or commercial agreements or arrangements with Sublicensees that is not based on the grant of a sublicense under the Licensed Rights shall not be "Sublicensee Income" for purposes of this Agreement. Notwithstanding the foregoing, in the event that rights or obligations in addition to the Licensed Rights are licensed or sublicensed by LICENSEE, LICENSEE will equitably apportion any consideration received by LICENSEE in consideration of the sublicense under the Licensed Rights, which shall be included in Sublicensee Income as

applicable, and any consideration received by LICENSEE in consideration of other rights and obligations, which shall not be included in Sublicensee Income, and LICENSEE shall provide reasonable documentation to MSK in support of such apportionment.

1.22 “**Territory**” shall mean worldwide.

1.23 “**Valid Claim**” shall mean (a) an issued and unexpired claim within the Patent Rights, that shall not have been: (i) irretrievably withdrawn, cancelled, abandoned or disclaimed; (ii) held invalid or unenforceable by a court or other appropriate agency of competent jurisdiction in an unappealable decision; (iii) admitted to be invalid, unpatentable or unenforceable through reissue or disclaimer or otherwise; or (iv) lost through an interference, reexamination or reissue proceeding; or (b) a claim in a pending patent application within the Patent Rights which has not been pending for more than seven years or withdrawn, cancelled, abandoned or finally disallowed without the possibility of appeal.

ARTICLE 2 - GRANT

2.1 License Grant. Subject to the terms and conditions of this Agreement, MSK hereby grants to LICENSEE and its Affiliates a license under the Licensed Rights in the Field of Use to make, have made, use, have used, sell, offer for sale, lease, have leased, import and have imported Licensed Products in the Territory, together with the right to sublicense as provided in Article 3.

2.1.1 Such license, including the right to sublicense, shall be exclusive as to the Group 1 Patent Rights, except as provided in sections 2.2 and 2.3 below; and

2.1.2 Such license shall be nonexclusive as to the Group 2 Patent Rights and Licensed Know-How.

- 2.1.3 MSK shall disclose Licensed Know-How to LICENSEE from time to time, as reasonably necessary to facilitate LICENSEE's practice of the licenses granted herein.
- 2.2 **Reserved Rights.** Notwithstanding anything in this Agreement to the contrary, MSK shall have the right to use the Patent Rights for (i) teaching and education, (ii) non-clinical research, and (iii) care of patients of MSK, its Affiliates, its network facilities, and clinical trial sites that are participating with MSK in a multicenter clinical trial ("**Permitted Activities**"); and shall have the right to permit others at academic, government, and not-for-profit institutions to use the Patent Rights for the sole purpose of jointly conducting such Permitted Activities with MSK.
- 2.3 **U.S. Government Rights.** All rights granted herein are subject to rights of the United States pursuant to 35 U.S.C. § 200 et seq., and implementing regulations and agreements.
- 2.4 **No Implied Rights.** MSK reserves all rights not expressly granted in the Agreement. The licenses granted hereunder shall not be construed to confer any rights upon LICENSEE by implication, estoppel or otherwise, and it is understood that practice of the full scope of the Licensed Rights may not be possible absent the grant of a license to patents not included in the Licensed Rights.
- 2.5 **Future Improvements.** MSK will notify LICENSEE, concurrently with marketing or other communications to third parties, if and when MSK seeks to out-license any inventions which are developed or conceived within [***] of the Restatement Effective Date and dominated by any of the Patent Rights. MSK will give a proposal by LICENSEE due regard if LICENSEE wishes to seek to negotiate a license to such inventions, and duly consider any such proposal on equal footing with other prospective licensees, but has no obligation to give preference to LICENSEE.

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ARTICLE 3 - SUBLICENSES

- 3.1 LICENSEE may grant sublicenses (and may amend sublicenses) under the rights granted in Section 2.1 only upon prior written consent of MSK, which will not be unreasonably withheld, conditioned or delayed. LICENSEE shall incorporate terms and conditions into its sublicense agreements sufficient to comply with the terms and conditions of this Agreement. LICENSEE shall promptly provide MSK with full executed copies of sublicense agreements (or amendments) and any associated agreements between it and any Sublicensee; provided that such agreement (or amendment) may be redacted to remove confidential information that does not relate to Licensed Products or Licensed Rights. All such documents shall be deemed Confidential Information of LICENSEE.
- 3.2 LICENSEE shall remain responsible for performance of all its obligations under this Agreement, notwithstanding the grant of any sublicense, and the Parties agree that such obligations may be satisfied by the performance by one or more Sublicensees. Any sublicense shall by its terms require that the Sublicensee comply with the provisions of this Agreement that by their terms are required to be performed by a Sublicensee, including without limitation the restrictions, limitations, and obligations of Articles 2, 6, 9, 10, 12, 13 and Sections 4.1, 7.5, 11.3, 11.4, 18.1, and 18.2, *mutatis mutandis* as applicable to a Sublicensee, and shall provide that MSK is a third-party beneficiary. Any breach by a Sublicensee shall be considered a breach by LICENSEE.
- 3.3 LICENSEE shall promptly provide MSK with a copy of any notice of breach, termination, or the like sent to or received from a Sublicensee under any agreement between LICENSEE and such Sublicensee pursuant to which LICENSEE has granted such Sublicensee a sublicense of the Licensed Rights.

ARTICLE 4 - DILIGENCE

- 4.1 (a) LICENSEE (itself and/or through its Affiliates and Sublicensees) shall use commercially reasonable efforts to (i) bring Licensed Products to the commercial market

through a diligent program for exploitation of the Licensed Rights, and (ii) continue active, diligent marketing efforts for Licensed Products following Regulatory Approval (as defined below) throughout the License Term.

Without limiting the foregoing, LICENSEE shall meet the following milestones with respect to each Patent Family:

Diligence – Development

- From the Restatement Effective Date through the [***] of the Restatement Effective Date: LICENSEE, its Affiliates or Sublicensees, alone or together, will actively conduct, for a Licensed Product, (i) technology development and research, (ii) preclinical *in vivo* testing, or (iii) a Phase 1 clinical trial.
- From the [***] of the Restatement Effective Date through the [***] of the Restatement Effective Date: during each calendar year, LICENSEE, its Affiliates or Sublicensees, alone or together, will actively conduct, for a Licensed Product, (i) a Phase 1 clinical trial; (ii) a Phase 2 clinical trial, or (iii) a Phase 3 clinical trial; or will have filed for or obtained regulatory approval for a Licensed Product; or will have launched for sale or sold a Licensed Product.
- From the [***] of the Restatement Effective Date through the [***]: during each calendar year, LICENSEE, its Affiliates or Sublicensees, alone or together, will actively conduct, for a Licensed Product, (i) a Phase 2 clinical trial, or (ii) a Phase 3 clinical trial; or will have filed for or received regulatory approval for a Licensed Product; or will have launched for sale or sold a Licensed Product.

AND

Diligence – Financial

- From the Restatement Effective Date through the [***] of the Restatement Effective Date: during each calendar year, LICENSEE, its Affiliates or Sublicensees, alone or together, will expend, for development of a Licensed Product, at least \$[***].

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- From the [***] of the Restatement Effective Date through the [***] of the Restatement Effective Date: during each calendar year, LICENSEE, its Affiliates or Sublicensees, alone or together, will expend, for development of a Licensed Product, at least \$[***].
- From the [***] of the Restatement Effective Date through the termination of the Agreement: during each calendar year, LICENSEE, its Affiliates or Sublicensees, alone or together, will expend, for development or commercialization of a Licensed Product, at least \$[***].

For clarity, and notwithstanding anything to the contrary herein, (i) the diligence requirements for each Patent Family will be deemed satisfied by achievement for each Patent Family of the diligence milestone of a single Licensed Product covered by such Patent Family, and (ii) the Parties acknowledge that a particular Licensed Product may be covered by multiple, or all, Patent Families, such that the achievement of a particular milestone with respect to a particular Licensed Product shall be deemed to satisfy the same milestone for all Patent Families covering such Licensed Product.

(b) LICENSEE shall give MSK [***] of the achievement of each of the above specific “Diligence – Development” obligations. So long as LICENSEE is using commercially reasonable efforts to develop, manufacture or commercialize at least one Licensed Product, if LICENSEE fails to satisfy any of the milestones as set forth in Section 4.1(a), LICENSEE shall notify MSK of the same, and MSK and LICENSEE agree to confer and review the relevance of and reasons for such failure, and to cooperate and use good faith efforts to [***].

(c) LICENSEE’s plan for the development of the Licensed Rights, including, for example, relevant schedules of capital investments needed to implement the plan, financial, equipment, facility plans, number and kind of personnel and time planned for each phase of development of the Licensed Rights for a [***], to the extent formed by LICENSEE, is annexed hereto and made part of this Agreement. LICENSEE shall provide to MSK, within

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[***] of each anniversary of the Restatement Effective Date, research and development progress reports and updates to LICENSEE's plan for the development of the Licensed Rights, including projections of activity anticipated for the next reporting year.

(d) LICENSEE shall be [***] responsible (itself or through its Affiliates and Sublicensees), [***], for securing any necessary governmental or regulatory approvals for development, manufacture, and sale of Licensed Products ("**Regulatory Approval**"). LICENSEE shall advise MSK, through annual reports described in Section 4.1(c) above, of its progress for obtaining said approvals.

4.2 [***].

4.2.1 [***].

4.2.2 [***].

4.2.3 [***].

4.3 If LICENSEE is the subject of a demand, notice, inquiry, or inspection report by a governmental authority or certification agency in relation to any Licensed Product that (i) by its terms directs or contemplates, or may reasonably be expected to require or relate to, suspension or cessation of manufacturing, sale, development, or marketing of Licensed Products, (ii) concerns a recall or potential recall of Licensed Products, (iii) concerns a loss of life or material issue of safety, or (iv) may reasonably be expected to prevent LICENSEE's compliance with its diligence obligations, then LICENSEE shall provide a copy to MSK without delay and keep MSK reasonably apprised of its response. All such documents provided to MSK shall be deemed Confidential Information of LICENSEE.

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ARTICLE 5 - PAYMENTS

5.1 For the rights, privileges and licenses granted hereunder, LICENSEE shall pay to MSK, in the manner hereinafter provided:

5.1.1 Consideration Shares.

- (a) Share Issuance. On the basis of the representations and warranties herein, and upon the terms and subject to the conditions hereof, as consideration under this Agreement and that certain Termination Agreement, LICENSEE agrees to issue to MSK five hundred thousand (500,000) shares (the "**Consideration Shares**") of LICENSEE's common stock, par value \$0.001 (the "**Common Stock**"), and will deliver or cause to be delivered to MSK a certificate representing the Consideration Shares.
- (b) Representations and Warranties of MSK. MSK hereby represents and warrants to LICENSEE:
- (i) MSK is an "accredited investor" as defined in Rule 501(a) under the Securities Act of 1933, as amended (the "**Securities Act**"). MSK has had access to and has acquired sufficient information about LICENSEE to reach an informed and knowledgeable decision to acquire the Consideration Shares. MSK has such business and financial experience as is required to give it the capacity to protect its own interests in connection with the acquisition of the Consideration Shares.
 - (ii) MSK is acquiring the Consideration Shares for its own account, for investment purposes only, and not with a present view to, or for, resale, distribution or fractionalization thereof, in whole or in part, within the meaning of the Securities Act. MSK understands that its

acquisition of the Consideration Shares has not been registered under the Securities Act or registered or qualified under any state securities law in reliance on specific exemptions therefrom, which exemptions may depend upon, among other things, the bona fide nature of MSK's investment intent as expressed herein. MSK is aware that it may not, directly or indirectly, offer, sell, pledge, transfer or otherwise dispose of (or solicit any offers to buy, purchase or otherwise acquire or take a pledge of) any of the Consideration Shares except in compliance with the Securities Act and the rules and regulations promulgated thereunder.

- (iii) MSK understands that the Consideration Shares being offered to it in reliance on specific exemptions from the registration requirements of United States federal and state securities laws and that LICENSEE is relying in part upon the truth and accuracy of, and MSK's compliance with, the representations, warranties, agreements, acknowledgements and understandings of MSK set forth herein in order to determine the availability of such exemptions and the eligibility of MSK to acquire the Consideration Shares.
- (iv) MSK has independently evaluated the merits of its decision to acquire the Consideration Shares pursuant to this Agreement. MSK understands that nothing in this Agreement or any other materials presented to MSK in connection with the acquisition of the Consideration Shares constitutes legal, tax or investment advice. MSK has consulted such legal, tax and investment advisors as it, in its sole discretion, has deemed necessary or appropriate in connection with its acquisition of the Consideration Shares.

- (c) Legend. MSK understands that the Consideration Shares shall bear a restrictive legend in substantially the following form (and a stop transfer order may be placed against transfer of the certificates for the Consideration Shares):

“THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR THE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES OR IN ANY OTHER JURISDICTION. THE SECURITIES REPRESENTED HEREBY MAY NOT BE OFFERED, SOLD OR TRANSFERRED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER APPLICABLE SECURITIES LAWS UNLESS OFFERED, SOLD OR TRANSFERRED PURSUANT TO AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THOSE LAWS.”

- (d) Beneficial Ownership. Immediately prior to the receipt of the Consideration Shares, MSK, together with its affiliates and any other persons acting as a group together with MSK and any of its affiliates, beneficially owned zero (0) shares of Common Stock (as such ownership is calculated pursuant to the rules of The Nasdaq Stock Market).

5.1.2 Registration Rights.

- (a) Registration Statement. LICENSEE shall:
- (i) file, and use commercially reasonable efforts to cause to be declared effective, a registration statement with the Securities and Exchange Commission on or before the date [***] following the Restatement Effective Date (the

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“**Registration Statement**”) to register the Consideration Shares on Form S-3 under the Securities Act, or on such other form which is appropriate to register such Consideration Shares for resale from time to time by MSK;

- (ii) respond as promptly as reasonably possible to any comments received from the Securities and Exchange Commission with respect to the Registration Statement or any amendment thereto;
- (iii) prepare and file with the Securities and Exchange Commission such amendments and supplements to such Registration Statement and the prospectus used in connection therewith as may be necessary to keep such Registration Statement continuously effective and free from any material misstatement or omission to state a material fact therein;
- (iv) furnish to MSK such number of copies of prospectuses in conformity with the requirements of the Securities Act [***], in order to facilitate the public sale or other disposition of all or any of the Consideration Shares by MSK;
- (v) file such documents as may be required of LICENSEE for normal securities law clearance for the resale of the Consideration Shares in such states of the United States as may be reasonably requested by MSK and use its commercially reasonable efforts to maintain such blue sky qualifications during the period LICENSEE is required to maintain effectiveness of the Registration Statement;

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provided, however, that LICENSEE shall not be required to qualify as a foreign corporation or execute a general consent to service of process in any jurisdiction in which it is not now so qualified or has not so consented;

- (vi) upon notification by the Securities and Exchange Commission that that the Registration Statement has been declared effective by the Securities and Exchange Commission, LICENSEE shall file the final prospectus under Rule 424 of the Securities Act;
- (vii) advise MSK promptly:
 - a. of the effectiveness of the Registration Statement or any post-effective amendments thereto;
 - b. of any request by the Securities and Exchange Commission for amendments to the Registration Statement or amendments to the prospectus or for additional information relating thereto;
 - c. of the issuance by the Securities and Exchange Commission of any stop order suspending the effectiveness of the Registration Statement under the Securities Act or of the suspension by any state securities commission of the qualification of the Consideration Shares for offering or sale in any jurisdiction, or the initiation of any proceeding for any of the preceding purposes; and
 - d. of the existence of any fact and the happening of any event that makes any statement of a material fact made in the Registration Statement, the prospectus and

amendment or supplement thereto, or any document incorporated by reference therein, untrue, or that requires the making of any additions to or changes in the Registration Statement or the prospectus in order to make the statements therein not misleading;

- (viii) use its commercially reasonable efforts to cause all Consideration Shares to be listed on each securities exchange, if any, on which equity securities of LICENSEE are then listed; and
 - (ix) bear all expenses in connection with the procedures in paragraphs (i) through (vii) of this Section 5.1.2(a) and the registration of the Consideration Shares on such Registration Statement and the satisfaction of the blue sky laws of such states, [***].
- (b) Indemnification.
- (i) MSK agrees to indemnify and hold harmless LICENSEE (and each person, if any, who controls LICENSEE within the meaning of Section 15 of the Securities Act or Section 20 of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), each officer of LICENSEE who signs the Registration Statement and each director of LICENSEE), from and against any losses, claims, damages or liabilities to which LICENSEE (or any such officer, director or controlling person) may become subject (under the Securities Act or otherwise), insofar as such losses, claims, damages or liabilities (or actions or proceedings in respect thereof) arise

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out of, or are based upon, any material breach of this Section 5.1.2 by MSK or any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading in each case, on the effective date thereof, if, and to the extent, such untrue statement or omission or alleged untrue statement or omission was made in reliance upon and in conformity with written information furnished by or on behalf of MSK specifically for use in preparation of the Registration Statement, and MSK will reimburse LICENSEE (and each of its officers, directors or controlling persons) for any legal or other expenses reasonably incurred in investigating, defending or preparing to defend any such action, proceeding or claim.

- (ii) LICENSEE agrees to indemnify and hold harmless MSK (and each of MSK's controlling persons, officers, directors, employees, advisors, and agents) from and against any losses, claims, damages or liabilities to which MSK (or any such controlling persons, officers, directors, employees, advisors, and agents) may become subject (under the Securities Act or otherwise), insofar as such losses, claims, damages or liabilities (or actions or proceedings in respect thereof) arise out of, or are based upon, any material breach of this Section 5.1.2 by LICENSEE or any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or any omission or alleged omission to state therein a material fact required to be stated therein

or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading in each case, on the effective date thereof, unless, and to the extent, such untrue statement or omission or alleged untrue statement or omission was made in reliance upon and in conformity with written information furnished by or on behalf of MSK specifically for use in preparation of the Registration Statement, and LICENSEE will reimburse MSK (and each of its controlling persons, officers, directors, employees, advisors, and agents) for any legal or other expenses reasonably incurred in investigating, defending or preparing to defend any such action, proceeding or claim.

- (c) Prospectus Delivery. MSK acknowledges that there may be times when LICENSEE must suspend the use of the prospectus forming a part of the Registration Statement until such time as an amendment to the Registration Statement has been filed by LICENSEE and declared effective by the Securities and Exchange Commission, or until such time as LICENSEE has filed an appropriate report with the Securities and Exchange Commission pursuant to the Exchange Act. MSK hereby covenants that it will not sell any Consideration Shares pursuant to said prospectus during the period commencing at the time at which LICENSEE gives MSK notice of the suspension of the use of said prospectus and ending at the time LICENSEE gives MSK notice that MSK may thereafter effect sales pursuant to said prospectus; *provided*, that such suspension periods shall in no event exceed 30 days in any 12 month period.
- (d) Termination. The obligations of LICENSEE pursuant to Section 5.1.2 hereof shall cease and terminate upon the date all Consideration Shares held by MSK are eligible to be sold pursuant to Rule 144 under the Exchange Act (“**Rule 144**”) without condition or restriction, including without any

limitation as to volume of sales, and without MSK complying with any method of sale requirements under Rule 144.

- (e) Information Rights. With a view to making available to MSK the benefits of Rule 144, and any other rule or regulation of the Securities and Exchange Commission that may at any time permit MSK to sell securities of the LICENSEE to the public without registration or pursuant to a registration statement on Form S-1 or Form S-3, for so long as the LICENSEE is subject to the public reporting requirements of the Exchange Act, the LICENSEE shall, until such time as all Consideration Shares may be sold by MSK without condition or restriction pursuant to Rule 144, including without any limitation as to volume of sales, and without MSK complying with any method of sale requirements under Rule 144:
- (i) make and keep available adequate current public information, as those terms are understood and defined in Rule 144;
 - (ii) use commercially reasonable efforts to file with the Securities and Exchange Commission in a timely manner all reports and other documents required of the LICENSEE under the Exchange Act; and
 - (iii) furnish to MSK, so long as MSK owns any Consideration Shares, forthwith upon request (i) to the extent accurate, a written statement by the LICENSEE that it has complied with the reporting requirements of Rule 144 and the Exchange Act; and (ii) such other information as may be reasonably requested in availing MSK of any rule or regulation of the Securities and Exchange Commission that permits the selling of any such securities without registration or pursuant to Form S-3.

Notwithstanding anything set forth in this Agreement to the contrary, LICENSEE agrees to reasonably cooperate with procedures established by MSK to limit the disclosure of any material non-public

information to only those specific individuals designated in writing by either MSK or LICENSEE, in each case acting reasonably.

- 5.1.3 License Fee. LICENSEE shall pay to MSK, within fifteen (15) days after the Restatement Effective Date, a non-refundable, non-creditable upfront fee of five hundred thousand dollars (\$500,000).
- 5.1.4 Running Royalties.
- (a) LICENSEE shall pay to MSK a royalty in an amount equal to [***] (the “**Base Rate**”) of Net Sales on a Licensed Product-by-Licensed Product and country-by-country basis from the date of first commercial sale of the applicable Licensed Product in the applicable country through the Royalty Term; provided, however, that the Base Rate shall be reduced by [***] for Net Sales of any Licensed Product in any country (i) which qualifies as Licensed Product only under Section 1.11(b), Section 1.11(d) and/or due to the license granted under the Patent Rights set forth in Section 1.17(a)(iii), and/or (ii) absent the license granted herein or any statutory exemption, the making, use, sale, offer to sell, or importation of which Licensed Product in such country would not infringe a Valid Claim of any MSK Patent Right (such royalty rate, as applicable, the “**Royalty Rate**”).
- (b) If LICENSEE is required to make royalty or similar payments to a third party under an agreement with such third party in connection with the making, using, selling, offering for sale, or importing of any Licensed Product, then [***] of such payments (a “**Third Party Payment**”) may be offset against the royalty payments due MSK (if applicable) for the corresponding Royalty Year; provided, however, that in no event shall the royalties paid to MSK be reduced by more than [***] of the Royalty Rate. For the avoidance of doubt,

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no multiple royalty payments shall be due to MSK because the manufacture, use, importation, offer for sale or sale of a Licensed Product is or shall be covered by more than one Valid Claim or other Licensed Rights under this Agreement.

- (c) In the event that the making, use, sale, offer to sell, or importation of a Licensed Product in a particular country would infringe, but for the license granted herein or a statutory exemption, one or more Valid Claims of more than one Patent Family, the Base Rate applicable to such Licensed Product in such country shall increase by [***] for each such additional Patent Family; provided, however, that [***]. For clarity, this increase shall also apply if more than one Patent Family applies to a Licensed Product that is manufactured in one jurisdiction but sold for final use in a different jurisdiction, e.g., if a patent in one Patent Family pertains to manufacture or composition of a Licensed Product in the jurisdiction in which it is manufactured, and a patent in a second Patent Family pertains to the composition or use of that Licensed Product in a different jurisdiction in which it is sold for final use.
- (d) Notwithstanding anything to the contrary in this Agreement, and subject to Section 5.1.4(c), in the event that, absent the license granted herein or any statutory exemption, the making, use, sale, offer to sell, or importation of a Licensed Product does not infringe one or more Valid Claims within the Group 1 Patent Rights, the Base Rate shall be equal to [***].

5.1.5 [***].

5.1.6 Milestone Payments. LICENSEE shall notify MSK within thirty (30) days of the achievement of any of the following milestones by LICENSEE or Sublicensee and pay

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to MSK the following milestone payments (“**Milestone Payments**”) in connection with each Licensed Product:

- (a) [***] dollars (\$[***]) upon [***];
- (b) [***] dollars (\$[***]) upon [***];
- (c) [***] dollars (\$[***]) upon [***];
- (d) [***] dollars (\$[***]) upon [***].

Notwithstanding the foregoing, in the event that, absent the license granted herein or any statutory exemption, the making, use, sale, offer to sell, or importation of a Licensed Product does not infringe one or more Valid Claims within the Group 1 Patent Rights [***].

For clarity, a Licensed Product under this Section 5.1.6 shall be a different Licensed Product from a predecessor only if such latter Licensed Product requires a new investigational new drug application for development and commercialization. For example, and without limitation, label expansions for a Licensed Product will not constitute a new Licensed Product for purposes of this Section 5.1.6.

5.1.7 Sublicensing Income. LICENSEE shall pay to MSK the following percentage (“**Sublicense Percentage**”) of Sublicensee Income (“**Sublicense Payments**”) in connection with the sublicense of the Licensed Rights to a Sublicensee:

- (a) [***] of Sublicensee Income from a Sublicensee where the grant of the sublicense to such Sublicensee is for a Licensed Product that has not commenced Phase 1 clinical testing at the time the sublicense is first granted;

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- (b) [***] of Sublicensee Income from a Sublicensee where the grant of the sublicense to such Sublicensee was for a Licensed Product that has commenced Phase 1 clinical testing, but has not commenced Phase 3 clinical testing, at the time the sublicense is first granted; or
- (c) [***] of Sublicensee Income from a Sublicensee where the grant of the sublicense to such Sublicensee was for a Licensed Product that has commenced Phase 3 clinical testing at the time the sublicense is first granted.

- 5.1.8 Enterprise Value Milestone Payments. Upon [***] (the “**Triggering Event**”), MSK shall be eligible to receive milestone payments based on the value of the Common Stock and in accordance with this Section 5.1.8. LICENSEE shall notify MSK within [***] of the achievement of any of the following milestone events occurring on or after the Triggering Event and shall pay to MSK the following milestone payments (the “**Enterprise Value Milestone Payments**”):
- (a) [***] dollars (\$[***]) the first time that the Common Stock Ratio (as defined below) reaches or exceeds [***];
 - (b) [***] dollars (\$[***]) the first time that the Common Stock Ratio reaches or exceeds [***]; and
 - (c) [***] dollars (\$[***]) the first time that the Common Stock Ratio reaches or exceeds [***].

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“Common Stock Ratio” means (a) the then-current ten-trading day trailing average closing price of the Common Stock as reported on The Nasdaq Stock Market, divided by (b) the ten-trading day trailing average closing price of the Common Stock as reported on The Nasdaq Stock Market as of the Restatement Effective Date; in each case as equitably adjusted for any stock splits, cash dividends, stock dividends, other distributions, combinations, recapitalizations and the like after the date of this Agreement; provided, that in the event the LICENSEE is no longer listed on The Nasdaq Stock Market or another nationally-recognized exchange of similar standing, clause (a) of this definition shall instead be the value of the Common Stock of the LICENSEE as determined by a mutually agreeable third party valuation firm, which valuation shall occur every six months (the fees and expenses of which shall be shared equally between the LICENSEE and MSK).

Each Enterprise Value Milestone Payment shall be payable only once. Payment by LICENSEE to MSK of any such Enterprise Value Milestone Payment shall be made in cash payable within [***] days following it becoming due, which shall occur upon the achievement of any milestone event or Change of Control, as applicable.

Notwithstanding anything else in this Section 5.1.8 or the Agreement to the contrary, upon a Change of Control (as defined below) of the LICENSEE during the term of this Agreement, (i) if the Actual Consideration Amount (as defined below) for such Change of Control would trigger an Enterprise Value Milestone Payment (using the Actual Consideration Amount in clause (a) of the definition of Common Stock Ratio), then in connection with such Change of Control the LICENSEE shall pay MSK an amount equal to [***] of such Enterprise Value Milestone Payment (provided the LICENSEE has not already paid such Enterprise Value Milestone Payment prior to such Change of Control) and (ii) if the Calculated Consideration Amount (as defined below) for such Change of Control would trigger an Enterprise Value Milestone Payment (using the Calculated Consideration Amount in clause (a)

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of the definition of Common Stock Ratio), whether or not in addition to an Enterprise Value Milestone Payment determined pursuant to clause (i) above, then in connection with such Change of Control the LICENSEE shall pay MSK an amount equal to [***] of such Enterprise Value Milestone Payment (provided the LICENSEE has not already paid such Enterprise Value Milestone Payment prior to such Change of Control).

Furthermore, notwithstanding anything else in this Section 5.1.8 or the Agreement to the contrary, following the consummation of a Change of Control of the LICENSEE and the payment of any and all amounts then due (or past due) under this Section 5.1.8, including as a result of such Change of Control, this 5.1.8. shall automatically terminate and be of no further force of effect.

“Change of Control” means (i) any consolidation or merger of the LICENSEE with or into any other corporation or other entity or person, or any other corporate reorganization, other than any such consolidation, merger or reorganization in which the shares of capital stock of the LICENSEE immediately prior to such consolidation, merger or reorganization, continue to represent a majority of the voting power of the surviving entity (or, if the surviving entity is a wholly owned subsidiary, its parent) immediately after such consolidation, merger or reorganization, (ii) any transaction or series of related transactions to which the LICENSEE is a party in which in excess of fifty percent (50%) of the LICENSEE’s voting power is transferred; provided that a Change of Control shall not include any transaction or series of transactions principally for bona fide equity financing purposes in which cash is received by the LICENSEE or any successor or indebtedness of the LICENSEE is cancelled or converted or a combination thereof, or (iii) a sale, lease, exclusive license or other disposition of all or substantially all of the assets of the LICENSEE.

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“Actual Consideration Amount” means the per share value of the consideration actually distributed, or received, in respect of each share of Common Stock of the LICENSEE in connection with a Change of Control. In the event that a Change of Control includes a form of contingent consideration that may, following the closing of such Change of Control, result in additional consideration being distributed, or received, in respect of each share of Common Stock of the LICENSEE in connection with such Change of Control, then in such case the LICENSEE and MSK shall in good faith, and acting reasonably, mutually determine the present value of such contingent consideration (as of the closing of such Change of Control), which shall be included for purposes of determining the Actual Consideration Amount for such Change of Control.

“Calculated Consideration Amount” means the per share value of the consideration actually distributed, or received, in respect of each share of Common Stock of the LICENSEE in connection with a Change of Control, multiplied by 1.5. In the event that a Change of Control includes a form of contingent consideration that may, following the closing of such Change of Control, result in additional consideration being distributed, or received, in respect of each share of Common Stock of the LICENSEE in connection with such Change of Control, then in such case the LICENSEE and MSK shall in good faith, and acting reasonably, mutually determine the present value of such contingent consideration (as of the closing of such Change of Control), which shall be included for purposes of determining the Calculated Consideration Amount for such Change of Control.

- 5.2 Payment Terms. Payments due MSK during a Contract Quarter-Year shall be paid to MSK within one hundred twenty (120) days following the end of such Contract Quarter-Year, paid in United States dollars in New York, NY, or at such other place as MSK may reasonably designate consistent with the laws and regulations controlling in any foreign country and provided that such designation does not impose additional costs, fees or payment obligations on LICENSEE. If any currency conversion shall be required in connection with the payment of royalties hereunder, such conversion shall be made by using the average

exchange rate prevailing at the JP Morgan Chase Bank during the Contract Quarter-Year reporting period to which such royalty payments relate.

- 5.3 Interest. LICENSEE shall pay to MSK interest on any amounts not paid when due at the rate established by the New York CPLR for prejudgment interest in the case of breach of contract.
- 5.4 Tax Withholding. Payments shall be made in full, without deduction or withholding for wire transfer fees or currency exchange fees. The Parties will cooperate to prevent or minimize the need for any withholding, and at the request of LICENSEE, MSK will provide LICENSEE with documents evidencing its tax status in the United States. Any withholding or other tax that is required by law to be withheld with respect to payments owed by LICENSEE shall be deducted by LICENSEE from such payment prior to remittance, and paid over to the relevant taxing authorities when due. LICENSEE shall promptly furnish MSK evidence of any such taxes withheld and of payment thereof, and MSK shall seek to obtain the release of withheld amounts from the relevant taxing authority. At MSK's request, LICENSEE shall provide MSK with reasonable assistance to release amounts withheld that MSK is otherwise entitled to receive pursuant to applicable tax laws and regulations ("**Entitled Amounts**"). If the Entitled Amounts are not released to MSK within eighteen (18) months of the payment date, then LICENSEE shall pay to MSK such Entitled Amounts and entitlement to receive such Entitled Amounts from the relevant taxing authority shall be assigned from MSK to LICENSEE (or paid over to LICENSEE by MSK if the taxing authority releases it directly to MSK).

ARTICLE 6 - REPORTS AND RECORDS

- 6.1 LICENSEE shall keep, and shall require its Affiliates and Sublicensees to keep, full, true and accurate books of account containing all particulars that may be necessary for the purpose of showing the amounts payable to MSK hereunder, and, in the event LICENSEE is not subject to the public reporting requirements of the Exchange Act, for the purpose of MSK's periodic monitoring of the value of its ownership in LICENSEE. Said books and records shall

include, but not be limited to: invoice registers and original invoices, product sales analysis reports, accounting general ledgers, sublicense and distributor agreements, contracts for the sale of Licensed Products, audited financial statements and/or income tax returns, sales tax returns, inventory and production records and shipping documents. Said books and records, including the original data files, shall be maintained for a period of no less than five (5) years following the period to which they pertain. For the License Term beginning on the first commercial sale of a Licensed Product, and not more than once annually, MSK or its agents shall have the right upon reasonable written notice to inspect such books and records for the purpose of verifying LICENSEE's royalty statement, compliance in other respects with this Agreement, or, in the event LICENSEE is not subject to the public reporting requirements of the Exchange Act, MSK's periodic monitoring of the value of its ownership in LICENSEE. Such inspections shall be during normal working hours of LICENSEE. Should such inspection lead to the discovery of a discrepancy greater than [***] percent ([***]%) or of [***] dollars (\$[***]), in reporting to [***], for any [***] period, [***].

- 6.2 Commercialization Reports. Beginning on the first commercial sale of a Licensed Product, LICENSEE, within sixty (60) days of the end of each Contract Quarter-Year, shall deliver to MSK true and accurate reports, giving such particulars of the business conducted by LICENSEE and its Sublicensees during the preceding period. The reports shall include at least the following information, to be itemized per Licensed Product by country of sales origin: Product number; Units sold; Gross unit price; Extended gross sales; Deductions; Net Sales; Royalty Rate; Extended royalty dollars due; the portion of Net Sales that was received from Sublicensees; Country of sale; Foreign currency conversion rate; and any other consideration received in the prior Contract Quarter-Year.

ARTICLE 7 - PATENT PROSECUTION; THE LICENSED PATENTS

- 7.1 Patent Cost Reimbursement. LICENSEE shall pay during the License Term reasonable out-of-pocket expenses borne by MSK for filing, prosecuting and maintaining MSK Patent Rights in accordance with LICENSEE'S rights under Section 7.2 through a patent counsel of MSK's

* Confidential Information, indicated by [***], has been omitted from this filing and filed separately with the Securities and Exchange Commission.

choice, provided that such patent counsel is reasonably acceptable to LICENSEE. LICENSEE shall reimburse MSK for all historic unreimbursed patent costs related to the MSK Patent Rights within ten (10) days of the Effective Date. Notwithstanding the foregoing, with respect to Group 2 Patent Rights, LICENSEE's share for future filing, prosecuting and maintaining such Group 2 Patent Rights shall be determined pro rata based on the number of other nonexclusive licensees, provided that, in any event such share shall not exceed [***] of the aggregate out-of-pocket expenses borne by MSK for filing, prosecuting and maintaining such Group 2 Patent Rights in accordance with this Agreement, and the amount owed for historic unreimbursed patent costs related to the Group 2 Patent Rights shall be \$[***].

7.2 Prosecution Process.

7.2.1 MSK shall prosecute and maintain the MSK Patent Rights in the United States and in such countries as are proposed by MSK and agreed to by LICENSEE, using counsel of MSK's choice which is reasonably acceptable to LICENSEE. MSK and its outside counsel will provide LICENSEE reasonable advance opportunities to advise MSK, and MSK agrees to cooperate with LICENSEE, in such filing, prosecution and maintenance. Without limiting the foregoing, MSK will consult with LICENSEE on the prosecution of the MSK Patent Rights and LICENSEE's suggestions and requests regarding patent prosecution will be reasonably considered and included unless MSK reasonably concludes in good faith that they are not beneficial to the MSK Patent Rights. MSK's patent attorney(s) will directly copy LICENSEE on all patent correspondence related to the MSK Patent Rights, and MSK shall keep LICENSEE timely informed with regard to the patent application and maintenance processes. If LICENSEE does not agree to bear the expense of filing or prosecuting patent applications within the Group 1 Patent Rights in any foreign countries in which MSK wishes to obtain patent protection, then MSK may file and prosecute such applications at its own expense and any license granted hereunder shall exclude such countries.

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7.2.2. Notwithstanding the foregoing, MSK will not take any actions with respect to the filing, prosecution or maintenance of MSK Patent Rights that would be reasonably expected to adversely effect LICENSEE's (i) exclusive rights granted to it by MSK in Section 2.1 under the Group 1 Patent Rights, or (ii) exclusive freedom to develop, manufacture and commercialize Licensed Products under the Group 1 Patent Rights.

7.3 MSK shall provide LICENSEE with copies of all relevant patent prosecution documentation for the MSK Patent Rights, including all patent applications, amendments, related correspondence and other related matters, in a timely manner so that LICENSEE may be informed and to give LICENSEE reasonable opportunity to advise MSK on the continuing prosecution. LICENSEE agrees to keep this documentation confidential.

7.4 LICENSEE shall, at its own expense, prosecute and maintain the Joint Patent Rights in the United States and in such countries as determined by LICENSEE in consultation with MSK, using counsel of LICENSEE's choice. LICENSEE shall keep MSK advised as to all developments with regard to filing, prosecution and maintenance of the Joint Patent Rights and shall promptly provide to MSK copies of all documents received and/or filed in connection with the filing, prosecution or maintenance thereof in reasonable time, subject to statutory deadlines. If LICENSEE advises that it does not wish to pursue or maintain a patent or patent application in the Joint Patent Rights, MSK may continue to prosecute and maintain it at its own expense, and such patent or application shall be excluded from the license granted hereunder if MSK does so, *provided that* LICENSEE will retain its ownership interests therein. LICENSEE shall control, at its sole discretion, prosecution of any patents owned solely by LICENSEE.

7.5 The Parties agree that they share a common legal interest in obtaining valid, enforceable patents and that the Parties will maintain confidential all information received pursuant to this Article 7, subject to the rights to use and disclose MSK Patent Rights and Joint Patent Rights as provided in this Agreement and the SRA.

- 7.6 LICENSEE shall not challenge the validity or enforceability of any claim within the MSK Patent Rights and shall use its reasonable efforts to cause its Affiliates and Sublicensees to refrain from doing so. In addition to all other rights and remedies available to MSK for any breach of this provision by LICENSEE, its Affiliates or Sublicensees, in the event that any such challenge by LICENSEE is not successful then LICENSEE shall reimburse MSK for all costs and expenses, including but limited to attorney's fees, incurred by MSK as a result of defending against such challenge.

ARTICLE 8 - INFRINGEMENT

- 8.1 **Monitoring.** LICENSEE shall use commercially reasonable efforts to monitor third party infringement of the Patent Rights in the Field of Use. LICENSEE shall keep MSK timely informed of any activities by LICENSEE in regard hereto.
- 8.2 **Actions.** This Section 8.2 sets forth the Parties' right of enforcement and defense solely in in relation to the Group 1 Patent Rights:
- 8.2.1 **First Right.** LICENSEE shall have the first right, but not the obligation, for the initiation, defense, and management of any adversarial legal proceeding relating to the Group 1 Patent Rights in the Field of Use and Territory (including without limitation any declaratory judgment action, patent infringement action or opposition) during the License Term, and will be responsible for all expenses related thereto. MSK shall join in any such action, at LICENSEE's request and expense. LICENSEE may delegate the foregoing rights to its Sublicensee in the territory where such Sublicensee has a sublicense under the Licensed Rights.
- 8.2.2 **Secondary Right.** With respect to the Group 1 Patent Rights, if LICENSEE determines with respect to any given third party activity that constitutes a material infringement of any Group 1 Patent Rights or a declaratory judgment action, that LICENSEE does not wish to exercise either of the foregoing rights in Section 8.2.1, LICENSEE shall provide MSK with written notice that LICENSEE declines such right,

and after receiving such notice, MSK shall have the secondary right to undertake such infringement action or defend against such challenge.

- 8.3 Cooperation; Settlement. To the extent either Party conducts any legal proceedings pursuant to Section 8.2 in relation to the enforcement or defense of such Patent Rights in the Field of Use and Territory, it shall retain full control of such proceeding and keep the other Party reasonably informed of such proceedings. The other Party shall reasonably cooperate, at the expense of the requesting Party. In any action conducted by MSK, LICENSEE will join as may be requested by MSK, and in any action conducted by LICENSEE, LICENSEE may affect joinder of MSK if MSK is an indispensable or necessary Party under the applicable law. Each Party agrees that it will not prosecute, settle or otherwise compromise any such legal proceeding in a manner that adversely affects the other Party's interests without such other Party's prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed. Notwithstanding anything in this Agreement to the contrary, no settlement, consent judgment, or other voluntary final disposition of any action by LICENSEE that admits or impairs the invalidity, unenforceability, or scope of the Patent Rights may be entered into without the prior written consent of MSK in its sole and absolute discretion, and no settlement, consent judgment, or other voluntary final disposition of any action by MSK that admits or impairs the invalidity, unenforceability, or scope of the Joint Patent Rights may be entered into by MSK without the prior written consent of LICENSEE in its sole and absolute discretion.
- 8.4 Costs and Recoveries. All costs of any action pursuant to Section 8.2 by either Party to enforce, or to defend against a challenge to, the Group 1 Patent Rights shall be borne by such Party, which shall keep any sums recovered or obtained in connection therewith (whether as damages, reasonable royalties, license fees, or otherwise in judgment or settlement derived therefrom), except that in the case of actions commenced by LICENSEE, the excess of such sums over such costs shall be treated as Net Sales subject to MSK's rights under this Agreement to collect royalties thereon. For the avoidance of doubt, LICENSEE may not deduct, from Net Sales any portion of LICENSEE'S costs or expenses related to any investigation, enforcement, defense, judgment or settlement of any such actions.

- 8.5 Third Party Patents. In the event LICENSEE is sued for patent infringement relating to the Patent Rights in the Field of Use and Territory during the License Term, or threatened with such suit, it shall promptly notify MSK. In any such action, LICENSEE shall be fully responsible for all its costs, including expenses, judgments and settlements; provided, however, that nothing in this Section 8.5 shall relieve MSK of its obligations under this Agreement or otherwise eliminate or reduce MSK's liability for any breach of this Agreement (including, without limitation, the representations and warranties made by MSK pursuant to Section 11.2).
- 8.6 Patent Term Extension. The Parties agree to cooperate in an effort to prevent loss of any extension of the duration of Group 1 Patent Rights which may otherwise be available to the Parties under the Drug Price Competition and Patent Term Restoration Act of 1984, or comparable U.S. or foreign laws, including by executing any documents as may reasonably be required. The Parties will cooperate with each other in obtaining patent term extension or supplemental protection certificates or their equivalents in any applicable country.
- 8.7 Other Matters. For Group 2 Patent Rights, MSK shall have the right, but not the obligation, for the initiation, defense, and management of any adversarial legal proceeding relating to such Group 2 Patent Rights (including without limitation any declaratory judgment action, patent infringement action or opposition) during the License Term, and will be responsible for all expenses related thereto.

ARTICLE 9 - CONFIDENTIALITY

- 9.1 Restrictions. Each Party agrees that Confidential Information of the other Party disclosed to it or to its employees under this Agreement shall during the term of this Agreement and for [***] thereafter:
- (a) be used only in connection with the legitimate purposes of this Agreement;

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- (b) be disclosed only to those who have a need to know it for purposes permitted by this Agreement or any other written agreement to which the Parties are both parties;
- (c) be safeguarded with the same care normally afforded confidential information in the possession, custody or control of the Party holding the Confidential Information but no less than reasonable; and
- (d) not be disclosed, divulged or otherwise communicated except with the express written consent of the disclosing Party or as otherwise permitted under this Agreement or any other written agreement to which the Parties are both parties.

9.2 Exclusions. The foregoing Section 9.1 shall not apply to the Confidential Information disclosed to the extent it:

- (a) can be demonstrated to have been in the public domain prior to the date of the disclosure;
- (b) enters the public domain through no fault of the receiving Party;
- (c) was already known to the receiving Party at the time of disclosure as evidenced by written records in the possession of the receiving Party prior to such time (other than as a result of disclosure pursuant to the SRA);
- (d) is subsequently received by the receiving Party in good faith from a third party without breaching any confidential obligation between the third party and the disclosing Party; or
- (e) was independently developed, as established by tangible evidence, by the receiving Party without use of or reference to information or material provided by the disclosing Party.

Notwithstanding the foregoing, a receiving Party may disclose Confidential Information of the disclosing Party if it is required to be disclosed for compliance with court orders, statutes or regulations or audits for compliance with such regulatory requirements, provided that prior to any such disclosure to the extent reasonably practicable and legally permissible, the Party from whom disclosure is sought shall promptly notify the other Party and shall afford such other Party the opportunity to challenge or otherwise lawfully seek limits upon such disclosure of Confidential

Information and the disclosing party only discloses such Confidential Information as is legally required to be disclosed. Further, notwithstanding the foregoing, LICENSEE (or its Affiliate or Sublicensee) may disclose Confidential Information of MSK under terms at least as stringent as set forth between the two Parties in this Agreement: (a) as reasonably needed to prosecute or enforce Patent Rights; (b) to regulatory authorities as reasonably needed to develop and/or obtain or maintain regulatory approvals of Licensed Products; (c) in confidence to its Affiliates, contractors, collaborators, consultants and Sublicensees as reasonably needed to research, develop and/or commercialize Licensed Products; (d) in confidence to prospective sublicensees, strategic partners, merger partners or acquirers, and their respective professional advisors, in connection with evaluation and/or negotiation of possible sublicense, corporate partnering, merger, asset purchase or other similar transactions; (e) as required in order to comply with applicable law or regulations, including securities laws and securities exchange requirements; (f) in confidence to its existing investors and professional advisors and to potential investors and their professional advisors; and (g) as reasonably needed to conduct or defend any litigation relating to this Agreement, the Licensed Products or LICENSEE's rights hereunder.

9.3 **Equitable Relief.** Given the nature of the Confidential Information and the competitive damage that could potentially result to the disclosing party upon authorized disclosure, use or transfer of its Confidential Information to any Third Party, the Parties agree that monetary damages may, in certain circumstances not be a sufficient remedy for any breach of this Article 9. In addition to all other remedies, under such specific circumstances, the disclosing party may 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 - INDEMNIFICATION, PRODUCT LIABILITY

10.1 LICENSEE will indemnify, defend and hold harmless (and cause its Sublicensees to so indemnify, defend and hold harmless) MSK and its respective trustees, directors, officers, medical and professional staff, employees, students, and agents and their respective successors, heirs, and assigns (each an "**Indemnitee**") against all third party claims and expenses (including legal expenses and reasonable attorney's fees) arising out of: (i) the

death of or injury to any person or persons, or out of any damage to property, in connection with LICENSEE's practice of the Licensed Rights; (ii) any claim that LICENSEE's practice of the Patent Rights infringes third-party intellectual property; (iii) the production, manufacture, sale, use, lease, consumption, or advertisement of Licensed Products by LICENSEE or its Affiliate or Sublicensee hereunder; or (iv) a breach by LICENSEE of any of its representations, warranties or obligations under this Agreement; provided, however, that in each case LICENSEE will not be obligated to indemnify, defend and hold harmless any Indemnitee against any claim, proceeding, demand, expense, or liability to the extent it arises out of, results from, or is increased by MSK's gross negligence or willful misconduct.

- 10.2 Indemnitee will promptly give notice to LICENSEE of any claims or proceedings which might be covered by Section 10.1 and LICENSEE will have the right to defend the same, including selection of counsel and control of the proceedings; provided, however, that LICENSEE will not, without the written consent of the Indemnitee, settle or consent to the entry of any judgment with respect to such third party claims: (i) that does not release the Indemnitee from all liability with respect to such third party claim, or (ii) which would reasonably be expected to materially adversely affect the Indemnitee or under which the Indemnitee would incur any obligation or liability, other than one as to which LICENSEE has an indemnity obligation hereunder. MSK agrees to cooperate and provide reasonable assistance to such defense at LICENSEE's expense. MSK at all times reserves the right to select and retain counsel of its own at its own expense to defend MSK's interests.
- 10.3 LICENSEE shall obtain and carry in full force and effect general liability insurance in amounts reasonably consistent with industry standards to protect LICENSEE and MSK in regard to events covered by this Article 10. Such insurance shall be written by a reputable insurance company, shall list MSK as an additional named insured thereunder, and shall be endorsed to include liability coverage. The limits of such insurance shall not be less than [***] dollars (\$[***]) per occurrence with an annual aggregate of [***] dollars (\$[***]) for personal injury, death or property damage. Within ten (10) days of any request by MSK,

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LICENSEE shall provide MSK with Certificates of Insurance evidencing primary coverage and additional insured requirements, and LICENSEE will provide MSK thirty (30) days written notice prior to any cancellation or material change in such insurance.

ARTICLE 11 – REPRESENTATIONS, WARRANTIES AND DISCLAIMERS

11.1 Representations and Warranties of LICENSEE. LICENSEE hereby represents and warrants to MSK that:

- (a) All corporate action on the part of LICENSEE, its officers, directors and shareholders necessary for the authorization of this Agreement, the performance of all obligations of LICENSEE hereunder has been taken. This Agreement, when executed and delivered, will be valid and binding obligation of LICENSEE enforceable in accordance with its terms, except (a) as limited by applicable bankruptcy, insolvency, reorganization, moratorium or other laws of general application affecting enforcement of creditors' rights, and (b) general principles of equity that restrict the availability of equitable remedies.
- (b) LICENSEE is not a party to any actions, suits, or proceedings pending or, to Licensee's knowledge, threatened against or affecting LICENSEE, its officers or directors in their capacity as such or its properties in any court or before any governmental or administrative agency, which would reasonably be expected to have a material adverse effect on the transactions contemplated by this Agreement. Without limiting the generality of the foregoing, LICENSEE hereby represents and warrants to MSK that as of the Restatement Effective Date, the execution and performance of LICENSEE's obligations under this Agreement does not conflict with, cause a default under, or violate any existing contractual obligation that may be owed by LICENSEE to any third party.
- (c) LICENSEE hereby represents, warrants and covenants to MSK that Licensed Products shall be manufactured in all material respects in accordance with applicable federal, state and local laws, rules and regulations, including, without limitation, in all material respects in accordance with all applicable rules and regulations of the FDA

(d) LICENSEE hereby represents and warrants to MSK that it is a corporation duly organized, validly existing and in good standing and has all requisite corporate power and authority to own and operate its properties and assets, to execute and deliver this Agreement, to carry out the provisions of this Agreement and to carry on its business as presently conducted. Licensee is duly qualified to do business and is in good standing as a foreign corporation in all jurisdictions in which the nature of its activities and of its properties (both owned and leased) makes such qualification necessary, except for those jurisdictions in which failure to do so would not have a material adverse effect on Licensee or its business.

(e) The Consideration Shares issued to MSK pursuant to this Agreement have been, or will be, fully authorized and validly issued, fully paid and non-assessable, and assuming the accuracy of the representations and warranties being made by MSK in this Agreement, issued in compliance with all applicable federal and state securities laws.

11.2

Representations and Warranties of MSK.

(a) MSK hereby represents and warrants that, to the best of MSK's knowledge as of the Restatement Effective Date, (i) it is the sole and exclusive owner, appointed agent for licensing or licensee of all right, title and interest in and to the Licensed Rights; and (ii) it has the power and authority to grant the licenses provided for herein to LICENSEE, and that it has not earlier granted, or assumed any obligation to grant, any rights in such Licensed Rights to any third party that have not been waived that would conflict with the rights granted to LICENSEE herein.

(b) MSK hereby represents and warrants to LICENSEE that, as of the Restatement Effective Date, to the best of MSK's knowledge, the execution and performance of MSK's obligations under this Agreement do not conflict with, cause a default under, or violate any existing contractual obligation that may be owed by MSK to any third party.

(c)MSK hereby represents and warrants to LICENSEE that it is a corporation duly organized, validly existing and in good standing and has all requisite corporate power and authority to execute and deliver this Agreement.

11.3 Disclaimer of Warranties.

EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER PARTY MAKES ANY REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, VALIDITY OF LICENSED RIGHTS, CLAIMS ISSUED OR PENDING OR THAT THE MANUFACTURE, SALE OR USE OF THE LICENSED PRODUCTS WILL NOT INFRINGE ANY PATENT, COPYRIGHT, TRADEMARK, OR OTHER PROPRIETARY RIGHTS.

11.4 Limitation of Damages.

IN NO EVENT SHALL EITHER PARTY BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, SPECIAL, INCIDENTAL, OR PUNITIVE DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT, INCLUDING BUT NOT LIMITED TO LOSS OF ANTICIPATED PROFIT, FROM ITS PERFORMANCE OR NONPERFORMANCE OF ITS OBLIGATIONS UNDER THIS AGREEMENT.

ARTICLE 12 - COMPLIANCE WITH LAW

12.1 It is understood that MSK is subject to United States laws and regulations controlling the export of technical data, computer software, laboratory prototypes and other commodities (including the Arms Export Control Act, as amended and the Export Administration Act of 1979), and that its obligations hereunder are contingent on compliance with applicable United States export laws and regulations. The transfer of certain technical data and commodities may require a license from the cognizant agency of the United States Government and/or written assurances by LICENSEE that LICENSEE shall not export data

or commodities to certain foreign countries without prior approval of such agency. MSK neither represents that a license shall not be required nor that, if required, it shall be issued.

- 12.2 LICENSEE shall use reasonable efforts in all respects conduct its activities under this Agreement, and shall use reasonable efforts to cause its Affiliates and Sublicensees to conduct their activities under this Agreement, in full compliance with all controlling laws and regulations.
- 12.3 LICENSEE shall, to the extent required by law, substantially manufacture in the United States any Licensed Product to be sold in the United States.
- 12.4 To the extent required by law, or if the failure to mark would reduce the rights of MSK or LICENSEE to enforce the Patent Rights against infringers, LICENSEE shall mark, and shall use reasonable efforts to cause its Affiliates and Sublicensees to mark, any Licensed Products with the appropriate Patent Rights.

ARTICLE 13 – NON-USE OF NAMES

Neither Party shall use the name of the other Party, nor of any of their employees, nor any adaptation thereof, in any press release, advertising, promotional or sales literature without prior written consent obtained from the other Party in each case. During and after the License Term, neither Party shall utilize or register any trademark, service mark, tradename, or other trade identifier of the other Party, or that contains (in whole or in part) or is confusingly similar to the foregoing, or is a translation of any of the foregoing, without the prior express written consent of the other Party.

Notwithstanding the above, each Party may freely disclose in the ordinary course of business that it has entered into this Agreement and the nature of this Agreement; LICENSEE may state to its actual and prospective investors and strategic partners that LICENSEE is licensed under the Licensed Rights and identify the inventors, their affiliation with MSK (if any); and LICENSEE may comply

with disclosure requirements of all applicable laws relating to its business, including, without limitation, United States and state securities laws.

ARTICLE 14 – PUBLICATION

Licensee recognizes and accepts that under MSK's mission as an academic medical center, MSK and its investigators must have a meaningful right to publish without Licensee's approval or editorial control, subject in all cases to the restrictions and obligations under Article 9 of this Agreement. MSK reserves the right to publish the scientific findings from (i) research related to Licensed Rights by MSK and (ii) clinical use of Licensed Products by MSK. MSK will submit for review a copy of all proposed publications (including abstracts or submissions of proposed publications to a journal) relating to the Licensed Rights, including Licensed Products, to LICENSEE at least thirty (30) calendar days prior to submission for publication. If no response is received from LICENSEE within those thirty (30) days, it may be conclusively presumed that the publication may proceed without delay. A proposed publication may not contain Confidential Information of LICENSEE or its Affiliates or Sublicensees without LICENSEE's prior written consent for publication of such Confidential Information, and MSK will remove any such Confidential Information of LICENSEE or its Affiliates or Sublicensees at LICENSEE's request. Upon LICENSEE's request, public disclosure shall be delayed up to sixty (60) additional calendar days to enable MSK to secure adequate intellectual property protection of any patentable subject matter contained therein.

ARTICLE 15 - ASSIGNMENT

No Party may assign or delegate any or all of its rights or obligations under this Agreement, or transfer this Agreement, without the prior written consent of the other Party, except that (a) either Party shall have the right to assign any of its rights, delegate any of its obligations, or transfer this Agreement without such consent: (i) to an Affiliate or (ii) to any third party in connection with the transfer or sale of all or substantially all of its business or assets relating to Licensed Products or Licensed Rights, whether as part of a merger or acquisition, sale of stock, sale of assets or otherwise; and (b) either Party may, without consent of the other Party, freely assign all or any portion of the payments due under this Agreement to a third party. Any successor-in-interest to

LICENSEE shall be bound by all provisions of this Agreement in the same manner that LICENSEE is bound hereunder. Except as expressly provided herein, any assignment, delegation or transfer by any Party without the consent of the other Party shall be void and of no effect.

ARTICLE 16 – TERMINATION & EXPIRATION

- 16.1 **Term.** The term of this Agreement is the License Term (as defined in Article 1). LICENSEE may terminate this Agreement by giving MSK written notice at least ninety (90) days in advance of the effective date of termination designated by LICENSEE.
- 16.2 **Bankruptcy or Cessation/Enjoinder of Business.** MSK may terminate this Agreement upon written notice to LICENSEE if: (a) LICENSEE becomes insolvent; (b) a petition in bankruptcy is filed against LICENSEE and is consented to, acquiesced in or remains undismissed for thirty (30) days; (c) LICENSEE makes a general assignment for the benefit of creditors, or a receiver is appointed for LICENSEE, and LICENSEE does not return to solvency before the expiration of a thirty (30) day period; (d) LICENSEE ceases to do business; or (e) if the enactment of any law, decree, or regulation, or the issuance of any order (including, but not limited to, an injunction), by any governmental authority renders it impracticable or impossible for LICENSEE to perform any of its obligations hereunder.
- 16.3 **Nonpayment.** If LICENSEE fails to pay MSK fees, royalties, ongoing patent expenses or other amounts payable hereunder, and such payments remain past due for more than forty-five (45) days, MSK shall have the right to terminate this Agreement on thirty (30) days written notice, unless LICENSEE pays to MSK within the thirty (30) day notice period, all fees, royalties and patent expenses, together with any interest due and payable thereon.
- 16.4 **Criminal Activity.** MSK may terminate this Agreement upon immediate written notice to LICENSEE if LICENSEE is convicted in a final judgment of a felony relating to the manufacture, use, or sale of Licensed Products in any jurisdiction where LICENSEE manufactures, uses or sells Licensed Products.

- 16.5 Breach. In addition to any other termination right specified in this Agreement, MSK may terminate this Agreement upon sixty (60) days' written notice to LICENSEE, if LICENSEE materially breaches a provision of this Agreement, unless LICENSEE cures any such breach prior to the expiration of the sixty (60) day period or LICENSEE has taken reasonable steps to cure such breach prior to the expiration of the sixty (60) day period and demonstrated to MSK's reasonable satisfaction that such breach is likely to be cured within a reasonable time thereafter. Notwithstanding the foregoing, if LICENSEE materially breaches its diligence obligations under Section 4.1(a) with respect to a specific Patent Family (but not all Patent Families), MSK shall not have the right to terminate this Agreement in its entirety; however, if LICENSEE has not cured, or taken reasonable steps to cure, such breach within sixty (60) days' of receiving written notice from MSK regarding such breach, MSK may, subject to Section 4.1(b), terminate the license granted herein solely with respect to such specific Patent Family and not to any other Patent Family.
- 16.6 Effect on Sublicensees. All sublicenses, and rights of Affiliates and Sublicensees, will terminate as of the effective date of termination of this Agreement or, with respect to a partial termination of this Agreement as provided in the last sentence of Section 16.5, all sublicenses and rights of Affiliates and Sublicensees under any such terminated license will terminate as of the effective date of such partial termination; provided, however, that any Sublicensee in good standing with regard to its obligations under its sublicense as of the effective date of termination or partial termination, as applicable, of this Agreement may agree to assume the applicable obligations of LICENSEE hereunder, but limited to the rights granted by LICENSEE to such Sublicensee in terms of territory, scope and other limitations, within forty-five (45) days of such effective date, and at the request of such Sublicensee, such sublicense shall survive termination, or partial termination, as applicable, of this Agreement and be assigned to MSK and MSK shall accept such assignment. In such case, the obligations of MSK to Sublicensee shall not exceed the obligations of MSK to LICENSEE under this Agreement.
- 16.7 Expiration of Royalty Term. On a Licensed Product-by-Licensed Product basis and country-by-country basis, the license granted in Article 2 shall become fully paid-up, royalty-free,

perpetual and irrevocable upon the expiration of the Royalty Term, subject to the payment of all applicable amounts due under Section 5.1(c).

- 16.8 Survival. Upon any expiration or termination of this Agreement, the following shall survive:
- (a) any provision expressly indicated to survive;
 - (b) any liability which any Party has already incurred to another Party prior to expiration or termination;
 - (c) LICENSEE's reporting and payment obligations for activities occurring prior to expiration or termination, and MSK's audit rights; and
 - (d) Articles 9, 13, 17, and 18, and Sections 10.1, 10.2, 11.3, 11.4, 16.6, 16.7, and 16.8.

ARTICLE 17 - NOTICES AND OTHER COMMUNICATIONS

Except for payments, each notice or other communication pursuant to this Agreement shall be sufficiently made or given when delivered by courier or other means providing proof of delivery to such Party at its address below or as it shall designate by written notice given to the other Party:

In the case of MSK:

Memorial Sloan Kettering Cancer Center

Office of Technology Development

If by mail: 1275 York Ave., Box 524

New York, NY 10065

If by courier: 600 Third Avenue, 16th floor

New York, NY 10016

Attn: Vice President, Technology Development

Tel: 1-212-639-6181 (not for notice)

Fax: 1-212-888-1120 (not for notice)

With copies to:

Memorial Sloan Kettering Cancer Center

Office of General Counsel

If by mail: 1275 York Ave.
New York, NY 10065
If by courier: 1275 York Ave.
New York, NY 10065
Attn: General Counsel
Tel: 1-212-639-5800 (not for notice)
Fax: 1-212-717-3517 (not for notice)

In the case of LICENSEE:

Fate Therapeutics, Inc.
Office of General Counsel
If by mail: 3535 General Atomics Court, Suite 200
San Diego, CA 92121
If by courier: 3535 General Atomics Court, Suite 200
San Diego, CA 92121
Attn: General Counsel
Tel: 1-858-875-1800 (not for notice)
Fax: 1-858-875-1843 (not for notice)

With copies to:
Fate Therapeutics, Inc.
Office of Chief Financial Officer
If by mail: 3535 General Atomics Court, Suite 200
San Diego, CA 92121
If by courier: 3535 General Atomics Court, Suite 200
San Diego, CA 92121
Attn: Chief Financial Officer
Tel: 1-858-875-1800 (not for notice)
Fax: 1-858-875-1843 (not for notice)

ARTICLE 18 - MISCELLANEOUS PROVISIONS

- 18.1 This Agreement shall be construed, governed, interpreted and applied in accordance with the laws of the State of New York, without giving effect to any choice/conflict of law principles, except that questions affecting the construction and effect of any patent shall be determined by the law of the country in which the patent was filed or granted.
- 18.2 The state and federal courts located in New York County, New York, shall have exclusive jurisdiction of any claims or actions between or among the Parties arising out of or relating to this Agreement, and each Party consents to venue and personal jurisdiction of those courts for the purpose of resolving any such disputes.
- 18.3 Severability. Except to the extent a provision is stated to be essential, or otherwise to the contrary, the provisions of this Agreement are severable, and in the event that any provisions of this Agreement shall be determined to be invalid or unenforceable under any controlling body of the law, such invalidity or unenforceability shall not in any way affect the validity or enforceability of the remaining provisions hereof.
- 18.4 Waiver. The failure of either Party to assert a right hereunder or to insist upon compliance with any term or condition of this Agreement shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition by the other Party.
- 18.5 Counterparts. This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be an original and all such counterparts shall together constitute but one and the same agreement.
- 18.6 Force Majeure. Neither Party shall lose any rights hereunder or be liable to the other Party for damages or losses (except for payment obligations) on account of failure of performance by the defaulting Party to the extent such the failure is occasioned by war, strike, fire, Act of God, earthquake, flood, lockout, embargo, governmental acts or orders or restrictions

(except if imposed due to or resulting from the Party's violation of law or regulations), failure of suppliers, or any other reason where failure to perform is beyond the reasonable control and not caused by the negligence, intentional conduct or misconduct of the nonperforming Party and the nonperforming Party has exerted all reasonable efforts to avoid or remedy such force majeure; provided, however, that in no event shall a force majeure excuse performance for a period of more than six months. For clarity, a failure to obtain funding shall not constitute a force majeure event.

- 18.7 Entire Agreement. This Agreement, including its attachments and exhibits (which attachments and exhibits are incorporated herein by reference), constitutes the entire understanding among and between the Parties with respect to the subject matter hereof, and supersedes all prior agreements and communications, whether written, oral or otherwise with respect to the subject matter hereof. This Agreement may only be modified or supplemented in a writing expressly stated for such purpose and signed by the Parties to this Agreement.
- 18.8 Relationship between the Parties. The relationship between the Parties under this Agreement is that of independent contractors. Nothing contained in this Agreement shall be construed to create a partnership, joint venture or agency relationship between any of the Parties. No Party is a legal representative of any other Party, and no Party can assume or create any obligation, liability, representation, warranty or guarantee, express or implied, on behalf of another Party for any purpose whatsoever.
- 18.9 Construction and Interpretation. Words (including defined terms) denoting the singular shall include the plural and vice versa. The words "hereof", "herein", "hereunder" and words of the like import when used in this Agreement shall refer to this Agreement as a whole, and not to any particular provision of this Agreement. The term "include" (and any variant thereof), and the giving of examples, shall not be construed as terms of limitation unless expressly indicated by the context in which they is used. The headings in this Agreement shall not affect its interpretation. Except as expressly provided herein, the rights and remedies herein provided shall be cumulative and not exclusive of any other

rights or remedies provided by law or otherwise. Each of the Parties has had an opportunity to consult with counsel of its choice. Each provision of this Agreement shall be construed without regard to the principle of contra proferentum. If any provision of this Agreement is held to be invalid or unenforceable the validity of the remaining provisions shall not be affected. The Parties shall replace the invalid or unenforceable provision by a valid and enforceable provision closest to the intention of the Parties when signing this Agreement. This Agreement was negotiated, and shall be construed and interpreted, exclusively in the English language.

[Signature page follows.]

IN WITNESS WHEREOF, authorized representatives of the Parties have executed this Agreement, effective as of the date of the last signature below.

FATE THERAPEUTICS, INC.

MEMORIAL SLOAN KETTERING CANCER CENTER

By: /s/ Scott Wolchko

By: /s/ Gregory Raskin, M.D.

Name: Scott Wolchko
Title: President & CEO

Name: Gregory Raskin, M.D.
Title: Vice President, Technology Development
Memorial Sloan Kettering Cancer Center

Date: May 15, 2018

Date: May 14, 2018

Exhibit A
Patent Rights – Group 1

Parent: SK2013-003

MSK Reference	Owner	Country	Stage	Application No.
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]

Patent Rights – Group 2

Parent: [*]**

MSK Reference	Owner	Country	Stage	Application No.
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]	[***]

* Confidential Information, indicated by [***], has been omitted from this filing and filed separately with the Securities and Exchange Commission.

Parent: [***]

MSK Reference	Owner	Country	Stage	Application No.
[***]	[***]	[***]	[***]	[***]

* Confidential Information, indicated by [***], has been omitted from this filing and filed separately with the Securities and Exchange Commission.

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

Date: August 6, 2018

/s/ J. Scott Wolchko

J. Scott Wolchko
President and Chief Executive Officer
(Principal Executive and Financial Officer)

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

In connection with the quarterly report of Fate Therapeutics, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, J. Scott Wolchko, Principal Executive Officer and Principal 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 6, 2018

/s/ J. Scott Wolchko

J. Scott Wolchko

President and Chief Executive Officer

(Principal Executive and Financial Officer)

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