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

(858) 875-1800
(Registrant's telephone number, including area code)

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted 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 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	☐	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 October 30, 2018, 64,518,813 shares of the registrant's common stock, par value $0.001 per share, were issued and outstanding.

FATE THERAPEUTICS, INC.

FORM 10-Q

TABLE OF CONTENTS

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

Fate Therapeutics, Inc.

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

	September 30, 2018 (unaudited)	December 31, 2017 (unaudited)
Assets		
Current assets:		
Cash and cash equivalents	$ 183,247	$ 88,952
Accounts receivable	500	—
Short-term investments and related maturity receivables	27,945	11,997
Prepaid expenses and other current assets	2,237	1,647
Total current assets	213,929	102,596
Property and equipment, net	3,798	2,550
Restricted cash	227	122
Collaboration contract asset	2,000	—
Other assets	—	24
Total assets	$ 219,954	$ 105,292
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 5,236	$ 1,678
Accrued expenses	9,638	7,254
Current portion of CIRM award liability	1,284	—
Current portion of deferred rent	—	12
Current portion of deferred revenue	3,250	2,105
Long-term debt, current portion	3,264	—
Total current liabilities	22,672	11,049
Deferred rent	2,441	1,347
Deferred revenue	8,000	724
Accrued expenses	455	175
CIRM award liability, net of current portion	856	—
Long-term debt, net of current portion	11,601	14,808
Commitments and contingencies (Note 6)		
Stockholders' equity:		
Preferred stock, $0.001 par value; authorized shares—5,000,000 at September 30, 2018 and December 31, 2017; 2,819,549 Class A Convertible Preferred shares issued and outstanding at September 30, 2018 and December 31, 2017	3	3
Common stock, $0.001 par value; authorized shares—150,000,000 at September 30, 2018 and December 31, 2017; issued and outstanding—64,503,326 at September 30, 2018 and 52,648,601 at December 31, 2017	65	53
Additional paid-in capital	443,244	295,934
Accumulated other comprehensive loss	(14)	(3)
Accumulated deficit	(269,369)	(218,798)
Total stockholders' equity	173,929	77,189
Total liabilities and stockholders' equity	$ 219,954	$ 105,292

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 September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	(unaudited)			
Collaboration revenue	$ 1,026	$ 1,026	$ 3,079	$ 3,079
Operating expenses:				
Research and development	13,637	8,578	41,929	24,471
General and administrative	4,081	2,788	11,501	8,489
Total operating expenses	17,718	11,366	53,430	32,960
Loss from operations	(16,692)	(10,340)	(50,351)	(29,881)
Other income (expense):				
Interest income	339	152	1,046	400
Interest expense	(429)	(378)	(1,266)	(856)
Loss on extinguishment of debt	—	(118)	—	(118)
Total other expense, net	(90)	(344)	(220)	(574)
Net loss	$ (16,782)	$ (10,684)	$ (50,571)	$ (30,455)
Other comprehensive income (loss):				
Unrealized gain (loss) on available-for-sale securities, net	1	26	(11)	(12)
Comprehensive loss	$ (16,781)	$ (10,658)	$ (50,582)	$ (30,467)
Net loss per common share, basic and diluted	$ (0.31)	$ (0.26)	$ (0.95)	$ (0.74)
Weighted-average common shares used to compute basic and diluted net loss per share	54,185,022	41,428,845	53,364,823	41,407,995

See accompanying notes.

Fate Therapeutics, Inc.

Condensed Consolidated Statements of Cash Flows
(in thousands)

	Nine Months Ended September 30,	
	2018	2017
	(unaudited)	
Operating activities		
Net loss	$ (50,571)	$ (30,455)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	877	681
Stock-based compensation	4,509	2,711
Amortization of debt discounts and debt issuance costs	57	62
Amortization of premiums and discounts on investments, net	(299)	(21)
Noncash interest expense	279	227
Deferred rent	137	816
Deferred revenue	8,421	(1,579)
Issuance of common stock for license agreements	6,100	—
Cash payments included in loss on extinguishment of debt	—	88
Non-cash loss on extinguishment of debt	—	30
Changes in operating assets and liabilities:		
Accounts receivable	(500)	—
Prepaid expenses and other current assets	(558)	387
Accounts payable and accrued expenses	3,918	957
Net cash used in operating activities	(27,630)	(26,096)
Investing activities		
Purchase of property and equipment	(1,186)	(928)
Purchases of short-term investments	(55,660)	(39,971)
Maturities of short-term investments	40,000	17,500
Net cash used in investing activities	(16,846)	(23,399)
Financing activities		
Issuance of common stock from equity incentive plans, net of issuance costs	1,914	172
Proceeds from public offerings of common stock, net of issuance costs	134,822	—
Issuance costs from private placement of common stock	—	(65)
Issuance costs from private placement of preferred stock	—	(128)
Proceeds from CIRM award	2,140	—
Proceeds from long-term debt	—	15,000
Payments on long-term debt	—	(10,764)
Cash payments included in loss on extinguishment of debt	—	(88)
Payments of debt issuance costs	—	(10)
Net cash provided by financing activities	138,876	4,117
Net change in cash, cash equivalents and restricted cash	94,400	(45,378)
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	$ 183,474	$ 43,353

See accompanying notes.

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 September 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 Offerings

In September 2018, the Company completed a public offering of common stock in which investors, certain of which are affiliated with the directors of the Company, purchased 10,648,149 shares of its common stock at a price of $13.50 per share under a shelf registration statement. Gross proceeds from the offering were $143.8 million, and, after giving effect to $8.9 million of costs related to the offering (of which $8.7 million was paid during the nine months ended September 30, 2018), net proceeds were $134.9 million.

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 a 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 nine months ended September 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 September 30, 2018 (in thousands):

	September 30, 2018
Cash and cash equivalents	$ 183,247
Restricted cash	227
Total cash, cash equivalents, and restricted cash shown in the statement of cash flows	$ 183,474

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 nine months ended September 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 mostly 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 nine months ended September 30, 2018, the Company realized a net loss of $16.8 million and $50.6 million, respectively. Shares of potentially dilutive securities totaled 21.7 million for the three and nine months ended September 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 7.5 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 nine months ended September 30, 2017, the Company realized a net loss of $10.7 million and $30.5 million, respectively. Shares of potentially dilutive securities totaled 20.5 million for the three and nine months ended September 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 6.2 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 August 2018, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2018-13 (ASU 2018-13). ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*, amends the disclosure requirements in Accounting Standards Codification (ASC) 820 by adding, changing, or removing certain disclosures. ASU 2018-13 is effective for fiscal years beginning after December 15, 2019. The Company believes that the adoption of this guidance will not have a material impact on the Company's Consolidated Financial Statements.

In June 2018, the FASB issued ASU 2018-07. ASU 2018-07 expands the scope of 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 August 2016, the FASB issued ASU 2016-15, which clarifies how entities should classify certain cash receipts and cash payments on the statement of cash flows and how the predominance principle should be applied when cash receipts and cash payments have aspects of more than one class of cash flows. The Company adopted ASU 2016-15 on January 1, 2018. The Company adopted the update retrospectively to each period presented and adjusted the Condensed Consolidated Statements of Cash Flows for the nine months ended September 30, 2017 to reclassify cash payments included in the loss on extinguishment of debt from an operating activity to a financing activity.

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

Ono Collaboration and Option Agreement

On September 14, 2018, the Company entered into a Collaboration and Option Agreement (the Ono Agreement) with Ono Pharmaceutical Co. Ltd. (Ono) for the joint development and commercialization of two off-the-shelf iPSC-derived chimeric antigen receptor (CAR) T-cell product candidates. The first iPSC-derived CAR T-cell candidate (Candidate 1) targets an antigen expressed on certain lymphoblastic leukemias, and the second candidate (Candidate 2) targets a novel antigen identified by Ono expressed on certain solid tumors (each a Candidate and collectively the Candidates).

Pursuant to the Ono Agreement, the Company and Ono will jointly conduct research and development activities under a joint development plan, with the goal of advancing each Candidate to a pre-defined preclinical milestone. The Company has granted to Ono an option to obtain an exclusive license under certain intellectual property rights related to its iPSC product platform to develop and commercialize (a) Candidate 1 in Asia, with the Company retaining rights for development and commercialization in all other territories of the world and (b) Candidate 2 in all territories of the world, with the Company retaining the right to co-develop and co-

commercialize Candidate 2 in the United States and Europe under a joint arrangement whereby it is eligible to share at least 50% of the profits and losses (each, an Option). The Company has maintained worldwide rights of manufacture for both Candidates.

For each Candidate, the Option will expire upon the earliest of: (a) the achievement of the pre-defined preclinical milestone, (b) termination by Ono of research and development activities for the Candidate and (c) the date that is the later of (i) four years after the Effective Date and (ii) completion of all applicable activities contemplated under the joint development plan (the Option Period).

Under the terms of the Ono Agreement, Ono paid the Company a non-refundable, non-creditable upfront payment of $10.0 million in connection with entering into the Ono Agreement. Additionally, as consideration for the Company's conduct of research under a joint development plan, Ono shall pay the Company annual research and development fees set forth in the annual budget included in the joint development plan, which fees are estimated to be $20.0 million in aggregate over the course of the joint development plan. The Company received $5.0 million in October 2018 as a prepayment for the first year of research and development.

Further, under the terms of the Ono Agreement, Ono has agreed to pay the Company up to an additional $40.0 million during the Option Period for the preclinical development of Candidate 1 and Candidate 2 in the form of milestone and option exercise fees. Such fees are in addition to the upfront payment and research and development fees.

Subject to Ono's exercise of the Options and to the achievement of certain clinical, regulatory and commercial milestones (Milestones) with respect to each Candidate in specified territories, the Company is entitled to receive an aggregate of up to $285.0 million in milestone payments for Candidate 1 and an aggregate of up to $895.0 million in milestone payments for Candidate 2, with the applicable milestone payments for Candidate 2 for the United States and Europe subject to reduction by 50% if the Company elects to co-develop and co-commercialize Candidate 2 as described above. The Company is also eligible to receive tiered royalties (Royalties) ranging from the mid-single digits to the low-double digits based on annual net sales by Ono of each Candidate in specified territories, with such royalties subject to certain reductions.

The Ono Agreement will terminate with respect to a Candidate if Ono does not exercise its Option for a Candidate within the Option Period, or in its entirety if Ono does not exercise any of its Options for the Candidates within their respective Option Periods. In addition, either party may terminate the Ono Agreement in the event of breach, insolvency or patent challenges by the other party; provided, that Ono may terminate the Ono Agreement in its sole discretion (x) on a Candidate-by-Candidate basis at any time after the second anniversary of the effective date of the Ono Agreement or (y) on a Candidate-by-Candidate or country-by-country basis at any time after the expiration of the Option Period, subject to certain limitations. The Ono Agreement will expire on a Candidate-by-Candidate and country-by-country basis upon the expiration of the applicable royalty term, or in its entirety upon the expiration of all applicable payment obligations under the Ono Agreement.

The Company applied Accounting Standards Codification (ASC) 808, *Collaborative Arrangements* and determined that the Ono Agreement is applicable to such guidance. The Company concluded that Ono represented a customer and applied relevant guidance from ASC 606, *Revenue from Contracts with Customers* (ASC 606) to evaluate the appropriate accounting for the Ono Agreement. In accordance with this guidance, the Company identified its performance obligations, including its grant of a license to Ono to certain of its intellectual property subject to certain conditions, its conduct of research services, and its participation in a joint steering committee. The Company determined that its grant of a license to Ono to certain of its intellectual property subject to certain conditions 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 license is classified as symbolic intellectual property under ASC 606. Additionally, the Company determined that its conduct of research services was not distinct from other performance obligations since such conduct is dependent on the guidance of the joint steering committee. Accordingly, the Company determined that all performance obligations should be accounted for as one combined performance obligation, and that the combined performance obligation is transferred over the expected term of the conduct of the research services, which is estimated to be four years.

The Company also assessed, in connection with the non-refundable upfront payment of $10.0 million received in September 2018 and the $5.0 million prepayment of the first-year research and development fees in October 2018, whether a significant financing component exists under the Ono 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 Ono, and (iii) the timing of the transfer of the performance obligations is at the discretion of Ono. Based on its assessment, the Company concluded that there was not a significant financing component.

The Company also assessed the effects of any variable elements under the Ono Agreement. Such assessment evaluated, among other things, the likelihood of receiving (i) preclinical milestone and option fees, (ii) various clinical, regulatory and commercial milestone payments, and (iii) royalties on net sales of either product Candidate. Based on its assessment, the Company concluded that,

based on the likelihood of these variable components occurring, there was not a significant variable element included in the transaction price.

In accordance with ASC 606, the Company determined that the initial transaction price under the Ono Agreement equals $30.0 million, consisting of the non-refundable upfront payment of $10.0 million and the aggregate estimated research and development fees of $20.0 million. The non-refundable upfront payment of $10.0 million was recorded as deferred revenue as of September 30, 2018 and will be recognized as revenue over time in conjunction with the Company's conduct of research services over the estimated four-year period based on costs incurred. The Company recorded the $5.0 million prepayment of the first-year research and development fees as deferred revenue in October 2018, and such fees will be recognized as revenue as the research services are delivered.

The Company has not assigned a transaction price to any Milestones given the substantial uncertainty related to their achievement and has not assigned a transaction price to any Royalties.

As a direct result of the Company's entry into the Ono Agreement, the Company incurred an aggregate of $2.0 million in sublicense consideration to existing licensors of the Company. The $2.0 million in sublicense consideration is due during the fourth quarter of 2018, and represents an asset under ASC 340, *Other Assets and Deferred Costs.* As such, the $2.0 million asset will be amortized to research and development expense in conjunction with the Company's revenue recognition under the Ono Agreement.

The Company did not recognize any revenue under the Ono Agreement for the three and nine months ended September 30, 2018. As of September 30, 2018, aggregate deferred revenue related to the Ono Agreement was $10.0 million, of which $2.0 million is classified as current.

Juno Collaboration and License Agreement

On May 4, 2015, the Company entered into a strategic research collaboration and license agreement (the Juno 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 Juno 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 Juno Agreement will end on the date that no further payments are due under the Juno Agreement, unless terminated earlier pursuant to the terms of the Juno Agreement.

Pursuant to the terms of the Juno 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 Juno 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 ASC 606 to evaluate the appropriate accounting for the Juno 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 Juno 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 Juno 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 Juno 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 Juno 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 Juno 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 Juno 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 Juno 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 Juno 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 Juno Agreement for the three and nine months ended September 30, 2018 was $1.0 million and $3.1 million, respectively. Total revenue recognized under the Juno Agreement for the three and nine months ended September 30, 2017 was $1.0 million and $3.1 million, respectively. As of September 30, 2018, aggregate deferred revenue related to the Juno Agreement was $1.3 million, all of which is classified as current. As of September 30, 2018, aggregate accounts receivable related to the Juno Agreement were $0.5 million, with such amount received in October 2018.

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 Juno Agreement. The Juno 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 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 nine months ended September 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.

Gladstone License Agreement

On September 11, 2018, the Company entered into an exclusive license agreement (the Gladstone License Agreement) with the J. David Gladstone Institutes (Gladstone).

Pursuant to the Gladstone License Agreement, Gladstone granted to the Company exclusive licenses to certain patents and patent applications (the Patent Rights) for the research, development, manufacturing, and commercialization of human therapeutics derived from iPSCs. The Patent Rights cover the use of the clustered regularly interspaced short palindromic repeat (CRISPR) and engineered nuclease-deactivated CRISPR-associated protein-9 (dCas9) system, known as the CRISPR activation (CRISPRa) system, for cellular reprogramming and iPSC generation.

In consideration for the rights granted under the Gladstone License Agreement, the Company issued to Gladstone 100,000 shares of the Company's common stock (the Gladstone Shares). The Gladstone Shares were issued pursuant to an exemption from registration under the Securities Act, in reliance on Section 4(a)(2) of the Securities Act regarding transactions by an issuer not involving a public offering.

Additionally, the Company paid Gladstone an upfront fee of $0.1 million and is obligated to pay Gladstone milestone payments upon the achievement of specified clinical and regulatory milestones and a royalty on net sales of licensed products developed using the licensed intellectual property rights. The Company is also obligated to pay Gladstone a percentage of certain income received by the Company in connection with the sublicense of the licensed patent rights.

During the three and nine months ended September 30, 2018, the Company recognized an aggregate of $1.4 million of research and development expenses, consisting of the $0.1 million upfront cash payment to Gladstone and the issuance of the Gladstone Shares, valued at $1.3 million, associated with the Gladstone License Agreement.

3. California Institute for Regenerative Medicine Award

On April 5, 2018, the Company executed an award agreement with the California Institute for Regenerative Medicine (CIRM) pursuant to which CIRM awarded the Company $4.0 million to advance the Company's FT516 product candidate into a first-in-human clinical trial (the Award). Pursuant to the terms of the Award, the Company became eligible to 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, 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 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. In September 2018, the Company received an additional disbursement under the Award in the amount of $1.1 million. The aggregate amount received 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 September 30, 2018, and December 31, 2017 (in thousands):

	Maturity (in years)	Amortized Cost	Unrealized Losses	Unrealized Gains	Estimated Fair Value
September 30, 2018					
U.S. Treasury debt securities	1 or less	27,959	(14)	—	27,945
Total		$ 27,959	$ (14)	$ —	$ 27,945
December 31, 2017					
U.S. Treasury debt securities	1 or less	12,000	(3)	—	11,997
Total		$ 12,000	$ (3)	$ —	$ 11,997

The Company reviewed its investment holdings as of September 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 nine months ended September 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 September 30, 2018 and December 31, 2017 (in thousands):

		Fair Value Measurements at Reporting Date Using		
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
As of September 30, 2018:				
Cash equivalents	$ 183,247	$ 183,247	$ —	$ —
U.S. Treasury debt securities	27,945	27,945	—	—
Total assets	$ 211,192	$ 211,192	$ —	$ —
As of December 31, 2017:				
Cash equivalents	$ 88,952	$ 88,952	$ —	$ —
U.S. Treasury debt securities	11,997	11,997	—	—
Total assets	$ 100,949	$ 100,949	$ —	$ —

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 September 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):

	September 30, 2018	December 31, 2017
Accrued payroll and other employee benefits	$ 2,220	$ 1,761
Accrued clinical trial related costs	4,785	3,323
Accrued other	2,633	2,170
Current accrued expenses	$ 9,638	$ 7,254

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):

	September 30, 2018	December 31, 2017
Long-term debt	$ 15,000	$ 15,000
Less debt issuance costs and discount, net of current portion	(66)	(192)
Long-term debt, net of long-term portion of debt issuance costs and discount	14,934	14,808
Less current portion of long-term debt	(3,333)	—
Long-term debt, net	$ 11,601	$ 14,808
Current portion of long-term debt	$ 3,333	$ —
Less current portion of debt issuance costs and discount	(69)	—
Current portion of long-term debt, net	$ 3,264	$ —

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 September 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 would have expired 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. During September 2018, the 2017 Warrant was fully exercised in exchange for 67,952 shares of the Company's common stock in a cashless transaction.

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 nine months ended September 30, 2018, the Company recorded $0.4 million and $1.3 million, respectively, in aggregate interest expense related to the 2017 Term Loan.

For each of the three and nine months ended September 30, 2017, the Company recorded $0.4 million 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 September 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 nine months ended September 30, 2017, the Company recorded $0.1 million and $0.5 million, respectively, in aggregate interest expense related to the Term A and Term B Loans.

Warrants to purchase 36,074 shares of the Company's common stock at a weighted average exercise price of $7.21 per share issued in connection with a prior debt agreement between the Company and the Bank in 2009 remain outstanding as of September 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 September 30, 2018, the balance of the tenant improvement allowance remaining is $0.9 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 September 30, 2018, future minimum payments, assuming no early termination, under the operating lease are $40.5 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 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	2,964,260	7.55
Canceled	(620,489)	4.58
Exercised	(504,475)	3.80
Balance at September 30, 2018	7,297,339	$ 5.05

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 September 30, 2018	188,625	$ 4.89

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 September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Research and development	$ 939	$ 450	$ 2,598	$ 1,599
General and administrative	703	421	1,911	1,112
	$ 1,642	$ 871	$ 4,509	$ 2,711

As of September 30, 2018, the outstanding options included 36,800 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 September 30, 2018 was $0.1 million.

As of September 30, 2018, the unrecognized compensation cost related to outstanding options (excluding those with performance-based conditions determined not to be probable) was $15.4 million and is expected to be recognized as expense over a weighted average period of approximately 3.1 years.

As of September 30, 2018, the unrecognized compensation cost related to restricted stock units was $0.5 million which is expected to be recognized as expense over approximately 1.0 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:

	Nine Months Ended September 30,	
	2018	2017
Risk-free interest rate	2.5%	2.0%
Expected volatility	79.3%	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:

	Nine Months Ended September 30,	
	2018	2017
Risk-free interest rate	2.8%	2.0%
Expected volatility	80.1%	90.8%
Remaining contractual term (in years)	8.0	8.6
Expected dividend yield	0.0%	0.0%

Reconciliation of Stockholders' Equity Accounts

The following table summarizes the Company's changes in Stockholders' Equity accounts for the nine months ended September 30, 2018 (in thousands):

	Convertible Preferred Stock	Common Stock	Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
Balance at December 31, 2017	$ 3	$ 53	$ 295,934	$ (3)	$ (218,798)	$ 77,189
Exercise of stock options, net of issuance costs	—	—	606	—	—	606
Issuance costs from public offering of common stock	—	—	(37)	—	—	(37)
Stock-based compensation	—	—	1,382	—	—	1,382
Unrealized loss on short-term investments	—	—	—	(10)	—	(10)
Net loss	—	—	—	—	(14,135)	(14,135)
Balance at March 31, 2018	$ 3	$ 53	$ 297,885	$ (13)	$ (232,933)	$ 64,995
Exercise of stock options, net of issuance costs	—	—	175	—	—	175
Issuance costs for public offering of common stock	—	—	(19)	—	—	(19)
Stock-based compensation	—	—	1,485	—	—	1,485
Issuance of common stock for license agreement	—	—	4,845	—	—	4,845
Unrealized loss on short-term investments	—	—	—	(2)	—	(2)
Net loss	—	—	—	—	(19,654)	(19,654)
Balance at June 30, 2018	$ 3	$ 53	$ 304,371	$ (15)	$ (252,587)	$ 51,825
Exercise of stock options, net of issuance costs	—	1	1,132	—	—	1,133
Public offering of common stock, net of offering costs	—	11	134,844	—	—	134,855
Stock-based compensation	—	—	1,642	—	—	1,642
Issuance of common stock for license agreement	—	—	1,255	—	—	1,255
Unrealized gain on short-term investments	—	—	—	1	—	1
Net loss	—	—	—	—	(16,782)	(16,782)
Balance at September 30, 2018	$ 3	$ 65	$ 443,244	$ (14)	$ (269,369)	$ 173,929

The following table summarizes the Company's changes in Stockholders' Equity accounts for the nine months ended September 30, 2017 (in thousands):

	Convertible Preferred Stock	Common Stock	Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
Balance at December 31, 2016	$ 3	$ 41	$ 248,957	$ (1)	$ (175,846)	$ 73,154
Exercise of stock options, net of issuance costs	—	—	35	—	—	35
Stock-based compensation	—	—	867	—	—	867
Private placement issuance of common stock, net of offering costs	—	—	(13)	—	—	(13)
Private placement issuance of Class A convertible preferred stock, net of offering costs	—	—	(26)	—	—	(26)
Unrealized loss on short-term investments	—	—	—	(33)	—	(33)
Net loss	—	—	—	—	(10,126)	(10,126)
Balance at March 31, 2017	$ 3	$ 41	$ 249,820	$ (34)	$ (185,972)	$ 63,858
Exercise of stock options, net of issuance costs	—	—	32	—	—	32
Stock-based compensation	—	—	973	—	—	973
Unrealized loss on short-term investments	—	—	—	(5)	—	(5)
Net loss	—	—	—	—	(9,645)	(9,645)
Balance at June 30, 2017	$ 3	$ 41	$ 250,825	$ (39)	$ (195,617)	$ 55,213
Exercise of stock options, net of issuance costs	—	—	119	—	—	119
Issuance costs for public offering of common stock	—	—	(13)	—	—	(13)
Stock-based compensation	—	—	871	—	—	871
Issuance of warrants for common stock	—	—	217	—	—	217
Unrealized gain on short-term investments	—	—	—	26	—	26
Net loss	—	—	—	—	(10,684)	(10,684)
Balance at September 30, 2017	$ 3	$ 41	$ 252,019	$ (13)	$ (206,301)	$ 45,749

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) to 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 entered into a collaboration and option agreement with Ono Pharmaceutical Co. Ltd. for the joint development and commercialization of two off-the-shelf iPSC-derived chimeric antigen receptor (CAR) T-cell product candidates.

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 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.

Collaboration Revenue

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

Agreement with Ono Pharmaceutical Co., Ltd.

On September 14, 2018, we entered into a Collaboration and Option Agreement (the Ono Agreement) with Ono Pharmaceutical Co. Ltd. (Ono) for the joint development and commercialization of two off-the-shelf iPSC-derived chimeric antigen receptor (CAR) T-cell product candidates. Pursuant to the terms of the Ono Agreement, we received an upfront, non-refundable payment of $10.0 million. Additionally, we are entitled to receive fees for the conduct of research and development under a joint development plan, which fees are estimated to be $20.0 million in aggregate (of which $5.0 million was received in October 2018).

We concluded that Ono represented a customer and in accordance with Accounting Standards Codification (ASC) 606, *Revenue from Contracts with Customers*, we determined that the initial transaction price under the Ono Agreement equals $30.0 million, consisting of the non-refundable upfront payment of $10.0 million and the aggregate estimated research and development fees of $20.0 million. In addition, we identified our performance obligations under the Ono Agreement, including our grant of a license to Ono to certain of our intellectual property subject to certain conditions, our conduct of research services, and our participation in a joint steering committee. We 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 over the expected term of the conduct of the research services, which is estimated to be four years.

As of September 30, 2018, aggregate deferred revenue related to the Ono Agreement was $10.0 million. As of September 30, 2018, no revenue has been recognized under the Ono Agreement.

Agreement with Juno Therapeutics, Inc.

On May 4, 2015, we entered into a strategic research collaboration and license agreement (the Juno 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 Juno 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 Juno 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 ASC 606, the Company determined that the transaction price under the Juno 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 Juno 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 September 30, 2018, aggregate deferred revenue related to the Juno Agreement was $1.3 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, Ono 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, Ono 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 nine months ended September 30, 2018.

Revenue Recognition

During the first quarter of 2018, we 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 September 30, 2018 and 2017

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

	Three Months Ended September 30,		Increase/ (Decrease)
	2018	2017	
Collaboration revenue	$ 1,026	$ 1,026	$ —
Research and development expense	13,637	8,578	5,059
General and administrative expense	4,081	2,788	1,293
Total other expense, net	90	344	(254)

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

Research and development expenses. Research and development expenses were $13.6 million for the three months ended September 30, 2018, compared to $8.6 million for the three months ended September 30, 2017. The increase in research and development expenses primarily includes the following changes:

- $1.9 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;
- $1.3 million increase in intellectual property and licensing expenses primarily associated with entering into the Gladstone License in September 2018;
- $1.1 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 $4.1 million for the three months ended September 30, 2018, compared to $2.8 million for the three months ended September 30, 2017. The increase in general and administrative expenses primarily relates to:

- $0.6 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, accounting fees and intellectual property-related expenses.

Other expense, net. Other expense, net was $0.1 million for the three months ended September 30, 2018 and $0.3 million for the three months ended September 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).

Comparison of the Nine Months Ended September 30, 2018 and 2017

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

	Nine Months Ended September 30,		Increase/ (Decrease)
	2018	2017	
Collaboration revenue	$ 3,079	$ 3,079	$ —
Research and development expense	41,929	24,471	17,458
General and administrative expense	11,501	8,489	3,012
Total other expense, net	220	574	(354)

Revenue. During each of the nine months ended September 30, 2018 and 2017, we recognized revenue of $3.1 million under the Juno Agreement, which we entered into in May 2015.

Research and development expenses. Research and development expenses were $41.9 million for the nine months ended September 30, 2018, compared to $24.5 million for the nine months ended September 30, 2017. The increase in research and development expenses primarily includes the following changes:

- $6.6 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 and entering into the Gladstone License in September 2018;
- $5.9 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;
- $2.7 million increase in employee compensation and benefits expense, including employee stock-based compensation expense; and
- $1.9 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 $11.5 million for the nine months ended September 30, 2018, compared to $8.5 million for the nine months ended September 30, 2017. The increase in general and administrative expenses primarily includes the following changes:

- $1.5 million increase in employee compensation and benefits expense, including employee stock-based compensation expense; and
- $1.1 million increase in advisory expenses, including general legal fees, accounting fees and intellectual property-related expenses.

Other expense, net. Other expense, net was $0.2 million for the nine months ended September 30, 2018 and $0.6 million for the nine months ended September 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 September 30, 2018, we had an accumulated deficit of $269.4 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 $26.1 million for the nine months ended September 30, 2017 to $27.6 million for the nine months ended September 30, 2018. The primary driver of this change in cash used in operating activities was our increase in net loss, offset by deferred revenue and the issuance of common stock in license agreements.

Agreement with Ono Pharmaceutical Co., Ltd.

On September 14, 2018, we entered into the Ono Agreement with Ono for the joint development and commercialization of two off-the-shelf iPSC-derived CAR T-cell product candidates. Candidate 1 targets an antigen expressed on certain lymphoblastic leukemias, and Candidate 2 is intended to target a novel antigen identified by Ono expressed on certain solid tumors (each a Candidate and collectively the Candidates).

Under the terms of the Ono Agreement, Ono paid a non-refundable, non-creditable upfront payment of $10.0 million. Additionally, as consideration for our conduct of research under a joint development plan, Ono has agreed to pay us annual research and development fees set forth in the annual budget included in the joint development plan, which fees are estimated to be $20.0 million in aggregate over the course of the joint development plan. Ono may also pay us a research milestone fee, and option exercise fees, totaling up to an additional $40.0 million. During October 2018, we received $5.0 million as a prepayment for the first year of research and development. We have not received any milestone or option exercise fees.

We have granted to Ono an option to obtain an exclusive license under certain intellectual property rights related to our iPSC product platform to develop and commercialize (a) Candidate 1 in Asia, with us retaining rights for development and commercialization in all other territories of the world and (b) Candidate 2 in all territories of the world, with us retaining the right to co-develop and co-commercialize Candidate 2 in the United States and Europe under a joint arrangement whereby we are eligible to share at least 50% of the profits and losses (each, an Option). We have maintained worldwide rights of manufacture for both Candidates.

Subject to Ono's exercise of the Options and to the achievement of certain clinical, regulatory and commercial milestones with respect to each Candidate in specified territories, we are entitled to receive an aggregate of up to $285.0 million in milestone payments for Candidate 1 and an aggregate of up to $895.0 million in milestone payments for Candidate 2, with the applicable milestone payments for Candidate 2 for the United States and Europe subject to reduction by 50% if we elect to co-develop and co-commercialize Candidate 2 as described above. As of September 30, 2018, we have not received any such payments. We are also eligible to receive tiered royalties ranging from the mid-single digits to the low-double digits based on annual net sales by Ono of each Candidate in specified territories, with such royalties subject to certain reductions. As of September 30, 2018, no royalties have been paid to us.

As a direct result of our entry into the Ono Agreement, we incurred an aggregate of $2.0 million in sublicense consideration to existing licensors of ours. The $2.0 million in sublicense consideration is due during the fourth quarter of 2018, and represents an asset under ASC 340, *Other Assets and Deferred Costs.*

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 Juno 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 Juno 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 September 30, 2018, we have received a total of $6.3 million of such research payments. We received a $0.5 million research payment during October 2018.

We are eligible under the Juno 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 September 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 September 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 Juno 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.

J. David Gladstone Institutes License Agreement

On September 11, 2018, we entered into an exclusive license agreement (the Gladstone License Agreement) with the J. David Gladstone Institutes (Gladstone). Pursuant to the Gladstone License Agreement, we issued 100,000 shares of our common stock to Gladstone, which shares were valued at $1.3 million on the date of the Gladstone License Agreement. We also paid an upfront cash fee of $0.1 million and are obligated to pay a royalty to Gladstone on net sales of licensed products and milestone payments upon the achievement of specified clinical and regulatory milestones. We are also obligated to pay Gladstone a percentage of certain sublicense income received by us.

Investing Activities

During the nine months ended September 30, 2018 and 2017, investing activities used cash of $16.8 million and $23.4 million, respectively. During the nine months ended September 30, 2018, we purchased $55.7 million in U.S. Treasuries as short-term investments, offset by $40.0 million in maturities of these short-term investments. During the nine months ended September 30, 2017, we purchased $40.0 million in U.S. Treasuries as short-term investments, offset by $17.5 million in maturities of short-term investments. All other investing activities for the periods presented were attributable to the purchase of property and equipment.

Financing Activities

For the nine months ended September 30, 2018, financing activities provided cash of $138.9 million, which primarily consisted of the $134.8 million of net proceeds from our September 2018 public offering of common stock and $2.1 million of proceeds from the California Institute for Regenerative Medicine (CIRM) award.

For the nine months ended September 30, 2017, financing activities provided cash of $4.1 million, which primarily consisted of $15.0 million of proceeds from our July 14, 2017 loan agreement with Silicon Valley Bank, offset by $10.8 million of principal payments on our term loans outstanding with Silicon Valley Bank.

From our inception through September 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 September 30, 2018, we had aggregate cash and cash equivalents and short-term investments of $211.2 million.

Public Offering of Common Stock

In September 2018, we completed a public offering of common stock in which investors, certain of which are affiliated with our directors, purchased 10,648,149 shares of our common stock at a price of $13.50 per share under our shelf registration statement. Gross proceeds from the offering were $143.8 million. After giving effect to $8.9 million in underwriting discounts, commissions and expenses related to the offering, net proceeds were $134.9 million.

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, 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. All such warrants have been exercised as of September 30, 2018.

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 September 30, 2018, after giving effect to our September 2018 public offering, we are eligible to issue an aggregate of $6.2 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 September 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 April 5, 2018, we executed an award agreement with CIRM pursuant to which CIRM awarded us $4.0 million to advance our FT516 product candidate into a first-in-human clinical trial (the Award). Pursuant to the terms of the Award, we are eligible to 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 us, and we are required to provide progress and financial update reports to CIRM throughout the Project Period.

Following the conclusion of the Project Period, we, in our sole discretion, have the option to treat the Award either as a loan or as a grant. In the event we elect to treat the Award as a loan, we 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 our election. If we do 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 we 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 us under the Award.

Since we may, at our election, repay some or all of the Award, we account for the Award as a liability until the time of election. In April 2018, we received the first disbursement under the Award in the amount of $1.0 million. In September 2018, we received a second disbursement under the Award in the amount of $1.1 million. The aggregate amount received 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 and conduct additional research and development activities pursuant to our collaboration agreements with Juno and Ono. 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 September 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 to perform our research and development obligations under our collaboration agreements with Juno and Ono, 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 agreements with Juno and Ono, and the time to achievement of such milestones and our receipt of any associated milestone payments;
- 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 September 30, 2018, future minimum payments under the operating lease are $40.5 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 September 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 September 30, 2018.

Changes in Internal Control over Financial Reporting

During the nine months ended September 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 September 30, 2018, our cash and cash equivalents and short-term investments were $211.2 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 Ono Pharmaceutical Ltd., 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, including investigator-sponsored trials of our product candidates, 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 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.

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.

We expect to depend on strategic partnerships and collaboration arrangements, such as our collaboration arrangement with Ono under the Ono Agreement, 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 currently depend, and expect to continue 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. For example, under the Ono Agreement we have agreed to jointly develop and commercialize with Ono two iPSC-derived CAR T cell product candidates, and additionally we are relying on Ono for the conduct of certain activities relating to the development and commercialization of these products. As such, we will not have sole control over the course of development of these product candidates arising under the Ono Agreement, or any other product candidates that we may develop under a future strategic partnership or collaboration arrangement. This lack of control over the development and commercialization of certain of our product candidates could cause delays or other difficulties in the development and commercialization of such product candidates, which may prevent completion of research and development activities and intended IND filings in a timely fashion, if at all. Our reliance on strategic collaboration partners, including Ono, 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.

In addition, the termination of the Ono Agreement or any future strategic partnership or collaboration arrangement that we enter into may prevent us from receiving any milestone, royalty payments, sharing of profits, and other benefits under such agreement. Any of these events could have a material adverse effect on our ability to develop and commercialize our product candidates, including the two iPSC-derived CAR T cell product candidates being developed under the Ono Agreement, and may adversely impact 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 CAR and 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.

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.

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 ours 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 in-licensed by us, or that we or our licensors will not be involved in interference, opposition, reexamination, review, reissue, post grant review or invalidity proceedings before U.S. or non-U.S. patent offices. 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 and biologics 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 aimed at improving the availability, competitiveness, and adoption of biosimilars as affordable alternatives to branded biologics. Under the plan, the FDA is directed to issue guidance to address certain practices that aim to delay or block generic competition, while also issuing new policies to bring more biosimilars to market as alternatives to brand-name biologics. More recently, the Trump administration announced a complex proposal to reduce Medicare spending by substantially reducing the price of physician-administered drugs, including biologics such as cellular therapeutics, under Medicare Part B. Under this proposal, pharmacy-benefit managers would have an increased role in managing drugs and pricing in the Part B program, and the price paid by Medicare for drugs under Part B would be linked to the prices paid for such drugs in other industrialized countries as reflected in an International Pricing Index, and in most cases these prices are lower than in the U.S. However, if the International Pricing Index model were adopted as proposed, it would not take effect until 2020 at the earliest and would phase in over five years, and it is therefore difficult to predict the impact it will have on our business. The proposal also includes a new payment model for reimbursing physicians for administering drugs under Part B, and the consequences of this payment model on the prescribing practices of physicians are uncertain. 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 and biologic 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.

In addition, 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 September 30, 2018, we had an accumulated deficit of $269.4 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 October 31, 2018, our executive officers, directors and entities affiliated with our five percent stockholders beneficially own, in the aggregate, shares representing approximately 45.1% 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 54.7%. 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 $6.2 million in the aggregate of shares of our common stock, preferred stock, debt securities, warrants and/or units after giving effect to our September 2018 public offering, and pursuant to a shelf registration statement declared effective by the SEC in August 2017, we may sell up to a remaining $54.0 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.

Comprehensive tax reform legislation could adversely affect our business and financial condition.

On December 22, 2017, the U.S. government enacted the Tax Cuts and Jobs Act of 2017 (the Tax Act), that includes significant changes to the taxation of business entities. These changes include, among others, a permanent reduction to the corporate income tax rate, limiting interest deductions, limiting the deduction for net operating losses and eliminating net operating loss carrybacks (though any such tax losses may be carried forward indefinitely), in each case, for losses arising in our taxable years beginning after December 31, 2017, allowing for the expensing of capital expenditures and modifying or repealing many business deductions and credits (including reducing the business tax credit for certain clinical testing expenses incurred in the testing of certain drugs for rare diseases or conditions generally referred to as "orphan drugs"). We continue to examine the impact this tax reform legislation may have on our business. However, the effect of the Tax Act on our business, whether adverse or favorable, is uncertain, and may not become evident for some period of time. We urge you to consult with your own legal and tax advisors with respect to applicable tax laws, including this legislation, and the potential tax consequences of investing in 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.

As of December 31, 2017, we had federal and California net operating loss carryforwards of $121.2 million and $120.8 million, respectively, which begin to expire in various amounts in 2027. As of December 31, 2017, we also had federal and California research and development tax credit carryforwards of $5.7 million and $4.2 million, respectively. The federal research and development tax credit carryforwards will begin to expire in 2035 unless previously utilized, while the California carryforwards will carry forward indefinitely. These net operating loss and tax credit carryforwards could expire unused and be unavailable to offset future income tax liabilities. In addition, in general, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-change net operating losses or tax credits, or NOLs or credits, to offset future taxable income or taxes. Generally, a change of more than 50 percentage points 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. We have determined that we triggered an ownership change limitation in November 2009 and again in May 2015. We have determined that we do not believe there were any ownership changes from May 2015 through December 2017. We have not analyzed periods subsequent to December 2017. We may experience additional ownership changes as a result of shifts in our stock ownership in the future. Limits on our ability to use our pre-change NOLs or credits to offset U.S. federal taxable income could potentially result in increased future tax liability to us if we earn net taxable income in the future. In addition, under the Tax Act the amount of NOLs generated in taxable periods beginning after December 31, 2017, 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.

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†	Exclusive License Agreement by and between the Registrant and The J. David Gladstone Institutes, dated September 11, 2018	—	—	—	Filed herewith
10.2†	Collaboration and Option Agreement by and between the Registrant and Ono Pharmaceutical Co., Ltd., dated September 14, 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: November 1, 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)

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 24b-2 OF THE SECURITIES EXCHANGE ACT OF 1934.

EXCLUSIVE LICENSE AGREEMENT

This Exclusive License Agreement, effective on September 11, 2018 ("**Effective Date**"), by and between **FATE THERAPEUTICS, Inc.**, a Delaware corporation with offices located at 3535 General Atomics Court, Suite 200, San Diego, CA 92121 ("**Licensee**"), and **The J. David Gladstone Institutes**, a testamentary trust with offices located at 1650 Owens Street, San Francisco, California 94158 ("**Gladstone**"). Each of Gladstone and Licensee may be referred to herein individually as a "**Party**" and jointly as the "**Parties**." In consideration of the mutual promises and covenants contained herein, and intending to be legally bound hereby, the Parties hereby agree as follows:

1. Definitions. As used herein, the following terms shall have the following meanings:

1.1 "**Affiliate**" means an entity that controls, is controlled by, or is under common control with the Licensee. As used in this Section 1.1, the terms "control" means the ownership, directly or indirectly, of more than fifty percent (50%) of the voting securities or other ownership interest of an entity, or the possession, directly or indirectly, of the power to direct the management or policies of an entity, whether through the ownership of voting securities, by contract, or otherwise.

1.2 "**Customer**" means 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, an Affiliate, or a Sublicensee, 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.

1.3 "**Field**" means the research, development, manufacturing, and commercialization of human therapeutics comprising iPSCs or cells derived therefrom.

1.4 "**Licensed Patents**" means (a) the patent application listed on Exhibit A, attached hereto; and (b) any substitutions, divisions, and continuations thereof, and any continuations-in-part thereof (but only to the extent that claims in such continuations-in-part are described in the specification of the parent patent application), (c) any patents issued from the foregoing patent applications; (d) any reissues, renewals, registrations, confirmations, re-examinations and extensions of such patents; and (e) all foreign counterparts of the foregoing in the Territory.

1.5 **"Licensed Product**" means any device, composition, product, or service: (a) the making, using, performing, importing or selling of which, but for the license granted hereunder, would infringe one or more Valid Claims as defined below; or (b) that is developed, in whole or in part, by use of one or more inventions that are the subject of one or more Valid Claims of the Licensed Patents.

1.6 "**Net Sales**" [***]

1.7 "**Phase III Clinical Trial**" means a pivotal human clinical trial of a therapeutic that is designed to ascertain efficacy and safety of such therapeutic for the purpose of enabling the preparation and submission of a regulatory approval application to a competent regulatory authority, as further defined in 21 C.F.R. 312.21(c) for the United States, as amended from time to time, or the corresponding foreign regulations.

1.8 "**Sublicense Income**" means all upfront fees and other payments received by Licensee from all Sublicensees in consideration of a grant of rights to the Licensed Patents by Licensee to such Sublicensees. [***]

1.9 "**Sublicensee**" means any non-Affiliate person or business entity to which Licensee has granted a sublicense of the rights granted to Licensee under Article 2.

1.10 "**Territory**" means worldwide.

1.11 "**Valid Claim**" means (a) a claim of an issued and unexpired patent in the Licensed Patents that (i) has not been abandoned, held unenforceable, unpatentable or invalid by a decision of a court or other governmental agency of competent jurisdiction, and is not subject to appeal; (ii) has not been admitted to be invalid or unenforceable through reissue or disclaimer or otherwise; and (iii) has not been lost through an interference, reexamination or reissue proceeding; or (b) [***]

2. License.

2.1 Patent License. Subject to the terms and conditions set forth in this Agreement, effective solely during the Term, Gladstone grants to Licensee an exclusive (except as provided in Section 2.5 and Section 2.6), non-transferable (except as permitted under Section 8.2), sublicensable (subject to Section 2.4), royalty-bearing license under the Licensed Patents, to research, develop, make, have made, use, sell, have sold, offer for sale, lease, have leased, import and have imported Licensed Products in the Field in the Territory. Licensee's exercise of the "have sold," "have leased," and "have imported" rights is subject to compliance with Section 2.3 or Section 2.7, as appropriate.

2.2 Affiliates. The license granted to Licensee under Section 2.1 shall include the right to have some or all of Licensee's rights or obligations under this Agreement exercised or performed by one or more of Licensee's Affiliates (but only during the period that such entity remains an Affiliate); provided, however, that Licensee shall remain fully responsible for the performance of any obligations that it delegates to an Affiliate.

2.3 Sublicenses. Licensee shall have the right to grant sublicenses of its rights under Section 2.1, subject to the requirements set forth below. Licensee shall incorporate terms and conditions into its sublicense agreements sufficient to enable Licensee to comply with this Agreement, and Licensee shall ensure that all sublicense agreements are consistent with the terms and conditions of this Agreement. Licensee shall provide to Gladstone redacted copies of all proposed sublicense agreements for Gladstone's written consent (such consent not to be unreasonably withheld), with sufficient information to provide evidence of compliance with the terms of this agreement. Each sublicense and any information provided by Licensee to Gladstone under this Article 2 shall be deemed to be Confidential Information of Licensee. Upon termination of this

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

Agreement for any reason, all sublicenses shall automatically terminate, provided however, that in the case of any termination other than termination by Licensee pursuant to Section 6.2, any Sublicensee in good standing with regard to its obligations under its sublicense as of the effective date of termination 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 of termination, and at the request of such Sublicensee, such sublicense shall survive termination of this Agreement and be assigned to Gladstone and Gladstone shall accept such assignment. In such case, the obligations of Gladstone to Sublicensee shall not exceed the obligations of Gladstone to Licensee under this Agreement.

2.4 Retained Rights. Gladstone shall retain the non-exclusive right to practice under the Licensed Patents and to use the inventions claimed therein, and to grant other educational and not-for-profit research organizations the right to practice under the Licensed Patents and to use the inventions claimed therein, in each case for educational, research, and non-profit purposes.

2.5 Government Rights. Licensee acknowledges that the U.S. Federal Government may have certain rights in the Licensed Patents subject to 35 U.S.C. §§ 200 et seq and any related regulations. To the extent that these statutes and regulations apply, Licensee acknowledges that the United States government will retain certain non-exclusive rights to practice the Licensed Patents and that such statutes and regulations impose the obligation that Licensed Product sold or produced in the United States be manufactured substantially in the United States. Licensee will ensure all applicable obligations set forth in such statutes and regulations are satisfied.

2.6 No Other Licenses. Except as expressly provided herein, nothing in this Agreement shall be construed to confer any ownership interest, license or other rights upon Licensee by implication, estoppel or otherwise as to any technology, products, biological materials, patents (including patents that are dominant or subordinate to the Licensed Patents), or other intellectual property rights of Gladstone or any other entity.

2.7 Permitted Subcontracting. The license granted by Gladstone in Section 2.1 includes the right to engage in Permitted Subcontracting, as defined herein. "Permitted Subcontracting" shall include the grant by Licensee, its Affiliate, or Sublicensee of rights under this Agreement to (i) third parties contractually bound to Licensee, an Affiliate or Sublicensee for the sole purpose of marketing or promoting a Licensed Product, (ii) third party contract research organizations contractually bound to Licensee, an Affiliate or Sublicensee with no other rights under Licensed Patents other than to perform research and development on behalf of Licensee, an Affiliate or Sublicensee; and (iii) third party contract manufacturing organizations contractually bound to Licensee, an Affiliate or Sublicensee with no other rights under Licensed Patents than to manufacture on behalf of Licensee, an Affiliate or Sublicensee. For clarity, Permitted Subcontracting is not considered sublicensing of rights under this Agreement. Licensee shall (and shall cause its Affiliates and Sublicensees, as the case may be) to incorporate terms and conditions into its agreement for Permitted Subcontracting that are sufficient to enable Licensee to comply with this Agreement, and Licensee shall ensure that all such agreements do not conflict with the terms and conditions of this Agreement.

3. Research, Development and Commercialization.

3.1 Licensee Responsibilities. Licensee shall be solely responsible for all research, development, and commercialization activities that it undertakes within the scope of the licenses granted pursuant to Sections 2.1 and 2.2**.** The costs of all such activities shall be borne solely by

Licensee. Without limiting the foregoing, but subject to Section 4.5, Licensee shall be solely responsible for all amounts owed to Third Parties pursuant to any license or technology acquisition agreement under which Licensee obtains rights or licenses related to the development and commercialization of the Licensed Product by Licensee, its Affiliates, and its Sublicensees.

3.2 Diligence. Licensee shall use commercially reasonable efforts to meet the milestones shown in Exhibit B attached hereto, which exhibit is incorporated herein by reference, and notify Gladstone in writing as each milestone is met. The efforts of Affiliates and Sublicensees shall be treated as the efforts of Licensee when evaluating Licensee's compliance with the foregoing diligence obligations.

3.3 Reporting. Within [***] days after the end of each calendar year during the Term, Licensee shall furnish Gladstone with a written report summarizing its and its Affiliates' and Sublicensees' efforts during the prior year to develop and commercialize Licensed Products and a discussion of intended efforts for the then-current year.

4. Compensation

4.1 License Issuance Fee. Licensee shall (a) pay to Gladstone a non-refundable, non-creditable license issue fee of US$100,000, and (b) reimburse Gladstone for all reasonable historical costs incurred by the Gladstone for the filing and prosecution of the Licensed Patents (approximately $[***]), which fees shall be invoiceable on the Effective Date and payable within thirty (30) days of Licensee's receipt of such invoice. All invoices shall be sent to [***].

4.2 Equity. Licensee shall issue to Gladstone 100,000 shares of common stock of Licensee pursuant to that certain Stock Issuance Agreement of even date herewith (the "**Stock Issuance Agreement**"), a copy of which is attached hereto as Exhibit C. The Stock Issuance Agreement contains additional rights and obligations of the Parties with respect to such shares.

4.3 Maintenance Fee. During the Term, Licensee shall pay to Gladstone a yearly, non-refundable, non-creditable maintenance fee of US$[***] within [***] after each anniversary of the Effective Date, beginning on the second anniversary of the Effective Date ("**Maintenance Fee**"). In addition, upon the first commercial sale of a Licensed Product, the annual Maintenance Fee shall increase to $[***] annually and will become minimum annual royalties for the calendar year in which such payments come due. Specifically, royalties paid under Section 4.5 for a calendar year prior to payment of the minimum annual royalty for such calendar year shall be creditable against such minimum annual royalty, and any minimum annual royalty payments actually made shall be creditable against any royalties that later come due under Section 4.5 for such calendar year. The first minimum annual royalty payment that comes due after the first commercial sale of a Licensed Product shall be pro-rated to cover the period until January 30 of the following calendar year, and future minimum annual royalty payments shall be due on January 30 of each calendar year**.**

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

4.4 Milestone Payments. Licensee shall pay to Gladstone the milestone payments set forth in the table below with respect to the first Licensed Product to achieve such milestone event.

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

Each of the milestone payments set forth in this Section 4.4 shall be made only once. Licensee shall notify Gladstone in writing within thirty (30) days after the occurrence of each milestone event giving rise to a payment obligation under this Section 4.4. As used herein, the [***].

4.5 Royalties. Licensee shall pay to Gladstone incremental royalties on Net Sales at a royalty rate determined by annual Net Sales as follows:

Net Sales (US$) Per Calendar Year	**Royalty Rate**
[***]	[***]
[***]	[***]
[***]	[***

For example, if annual Net Sales of all Licensed Products in a calendar year are US$[***] in the aggregate and there are no royalty deductions, the royalty due will be US$[***], calculated as follows: [***]

If it is necessary for Licensee to pay royalty or similar payments to a Third Party in order to make, have made, use, have used, sell, have sold, offer for sale, have offered for sale, or import a Licensed Product in a country in the Territory during the applicable reporting period (the "**Third Party Royalties**"), then Licensee shall be entitled to deduct from the royalty payments otherwise due to Gladstone under this Section 4.5 for such Licensed Product and such country [***] of such Third Party Royalties; provided, however, that royalties due hereunder for any calendar quarter shall not be reduced to below [***] of what would otherwise be due under this Section 4.5 in the absence of any deduction. Any deductions that cannot be made as a result of the foregoing provision may be carried forward to subsequent quarters.

Licensee shall pay royalties on Net Sales of all Licensed Products that are either sold or produced under the license granted in Section 2, even if, for example, such Licensed Products are produced prior to the Effective Date or sold after the termination of this Agreement.

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

4.6 Sublicense Income. Licensee shall pay Gladstone a percentage of all Sublicense Income received by Licensee or Affiliates, which percentage will vary depending on the aggregate amount of Sublicense Income received during the Term:

Aggregate Sublicense Income (US$) During Term	Percentage
[***]	[***]
[***]	[***]
[***]	[***]

To the extent that rights other than the Licensed Patents are sublicensed, Licensee shall equitably apportion the consideration received between Licensed Patents and such other rights, and the amount apportioned to the Licensed Patents will be included in Sublicense Income.

4.7 Reports. Royalties with respect to Net Sales accrued during a calendar quarter, and payments due with respect to Sublicense Income received or milestone events achieved during a calendar quarter, shall be due no later than [***] following the end of such calendar quarter. Each such payment shall be accompanied by written statement including a complete and accurate summary of the sales or other disposition of Licensed Products during such calendar quarter, the amount of Net Sales during such calendar quarter, the amount of Sublicense Income received during such calendar quarter, and any milestone events achieved, and such other information as is necessary for Gladstone to verify the royalty and other payments due hereunder.

4.8 Records. Licensee shall maintain, and shall cause its Affiliates and Sublicensees to maintain, complete and accurate records relating to the rights and obligations under this Agreement and any amounts payable to Gladstone in relation to this Agreement, which records will contain sufficient information to permit Gladstone to confirm the accuracy of any reports delivered to Gladstone hereunder and compliance in other respects with this Agreement. Licensee and/or its Affiliates and Sublicensees shall retain such records for at least [***] following the end of the calendar year to which they pertain, during which time Gladstone shall have the right on an annual basis, [***], to cause an independent third party reasonably acceptable to Licensee to inspect such records during normal business hours to verify any reports and payments made or compliance in other respects under this Agreement. [***]

4.9 Late Payments. In the event that any payment due hereunder is not made when due, the payment shall accrue interest beginning on the first day following the due date as herein specified, calculated at an annual rate equal to [***], the interest being compounded on the last day of each calendar quarter, provided that in no event shall said annual rate exceed the maximum legal interest rate in California. The payment of such interest shall not foreclose Gladstone from exercising any other rights it may have as a consequence of the lateness of any payment.

4.10 Payment Method. Each payment due to Gladstone under this Agreement shall be paid in United States dollars by check or wire transfer of funds to Gladstone's account in accordance with written instructions provided by Gladstone. Such payments will be without deduction of exchange, collection, or other charges, and, specifically, without deduction of withholding or similar taxes or other government-imposed fees or taxes, except as permitted in the definition of Net Sales (if applicable).

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

5. Intellectual Property.

5.1 Patent Prosecution. During the Term, Licensee shall have the first right to prepare, file, prosecute and maintain the Licensed Patents at its sole expense, using patent counsel of its choice, provided that counsel shall be reasonably acceptable to Gladstone. Licensee agrees to (i) keep Gladstone reasonably informed as to the filing, prosecution and maintenance of the Licensed Patents, (ii) furnish to Gladstone copies of material documents relevant to such filing, prosecution and maintenance, and (iii) allow Gladstone a reasonable opportunity to comment on material documents filed with any patent office with respect to the Licensed Patents and consider in good faith Gladstone's comments. To enable Licensee's rights to prosecute and maintain the Licensed Patents and to aid Licensee in this process, Gladstone shall provide information, execute and deliver documents and do other acts as Licensee shall reasonably requests from time to time in connection with such filing, prosecution and maintenance of the Licensed Patents. Licensee will reimburse Gladstone for Gladstone's reasonable costs incurred in complying with such requests. If Licensee desires to abandon, cease prosecution or not maintain any Licensed Patent in any country in the Territory, then Licensee shall provide to Gladstone written notice of such determination at least thirty (30) days prior to the deadline for any filing that is required to avoid abandonment or lapse of such patent or patent application, in which case Gladstone shall have the sole right to continue to prosecute and maintain such patent or patent application in the applicable country at Gladstone's expense. Additionally, if Gladstone desires Licensee to file, in a particular jurisdiction in the Territory, a Licensed Patent that claims priority to (or is based on the subject matter of) another Licensed Patent, Gladstone may provide written notice to Licensee requesting that Licensee file such patent application in such jurisdiction. If Gladstone provides such written notice to Licensee, Licensee shall either (i) file and prosecute such patent application and maintain any patent issuing thereon in such jurisdiction at Licensee's sole expense, or (ii) notify Gladstone that Licensee does not desire to file such patent application and provide Gladstone with the opportunity to prepare, file and prosecute such patent application and maintain any patent issuing thereon at Gladstone's expense. If Gladstone assumes responsibility for preparing, filing, prosecuting, or maintaining any patents or patent application pursuant to this Section 5.1(a), then such patent or patent application shall thereafter cease to be within the Licensed Patents patent or patent application, and Licensee shall no longer have any rights with respect to such patent or patent application.

5.2 Enforcement of Licensed Patents.

(a) Notification. If either Party becomes aware of (i) any infringement by a third party of any of the Licensed Patents, or (ii) declaratory judgment action by a third party alleging the invalidity, unenforceability or non-infringement of a Licensed Patent (collectively (i) and (ii), an "**Infringement**"), such Party shall promptly notify the other Party in writing to that effect, including any available evidence of Infringement by such third party.

(b) Licensee Enforcement Rights. Subject to the rest of this Section 5.2, Licensee, to the extent permitted by law, shall have the first right, under its own control and at its own expense, to bring an action or proceeding under one or more Licensed Patents against any Infringement in the Field in the Territory. Prior to commencing any such action or proceeding, Licensee shall consult with Gladstone and shall consider the views of Gladstone regarding the advisability of the proposed action and its potential effect on the Licensed Patents and on the public interest. Neither Party will notify a third party (including the alleged infringer) of infringement or put such third party on notice of the existence of any Licensed Patent, without first obtaining the written permission of the other Party to this Agreement. Gladstone shall, in cooperation with Licensee use best efforts to terminate such infringement without litigation. If the efforts of the

parties are not successful in abating the dispute within [***] days following the initial notice thereof, Licensee shall have the first right, but not the obligation, to bring an appropriate suit or take other action against any person or entity engaged in, or to defend against, such Infringement, at Licensee's cost and expense. Gladstone shall have the right, at its own expense, to be represented in any such action or proceeding by counsel of its own choice. If Gladstone is involuntarily joined to any suit brought by Licensee under this Section 5.2(b), Licensee shall indemnify Gladstone against, and hold Gladstone harmless from, any costs, expenses, or liability that Gladstone incurs in connection with such action, including but not limited to, any legal fees of counsel that Gladstone selects and retains to represent it in the suit.

(c) Enforcement by Gladstone. If Licensee fails to bring an action or proceeding with respect to an Infringement in the Field, or take other action to terminate or defend against such Infringement, within [***] days after Licensee's receipt or delivery of notice as provided in Section 8, or such shorter period as necessary to prevent the loss of rights, Gladstone shall have the right, but not the obligation, to bring such action or proceeding or take other action to terminate or defend against such Infringement, under its own control and at its own expense. In such event, Licensee shall take appropriate actions in order to enable Gladstone to commence a suit or take the actions set forth in the preceding sentence.

(d) Settlement. Neither Party shall settle any suit or action against an Infringement in any manner that would (i) negatively impact the Licensed Patents or the other Party's rights thereunder, (ii) admit fault on behalf of, or negatively impact the reputation of, the other Party; or (iii) limit or restrict the ability of Licensee to sell Licensed Products anywhere in the Territory, in each case without the prior written consent of the other Party.

(e) Collaboration. Each Party shall provide to the enforcing or defending Party reasonable assistance in such enforcement, at such enforcing Party's request and expense. The enforcing Party shall keep the other Party regularly informed of the status and progress of such enforcement efforts and shall reasonably consider the other Party's comments on any such efforts. The non-enforcing Party shall be entitled to separate representation in such matter by counsel of its own choice and at its own expense, but such Party shall at all times cooperate fully with the enforcing Party.

(f) Expenses and Recoveries. The Party bringing or defending a claim, suit or action under this Section 5.2 shall be solely responsible for any expenses incurred by such Party as a result of such claim, suit or action. If such Party recovers monetary damages in such claim, suit or action, such recovery shall be allocated first to the reimbursement of any expenses incurred by the Parties in such litigation (including, for this purpose, a reasonable allocation of expenses of internal counsel), and any remaining amounts shall be allocated as follows: (i) if Licensee is the enforcing or defending Party, the remaining amounts will be retained by Licensee and included in Net Sales subject to the royalty payment to Gladstone under Sections 4.5 and 4.6, and (ii) if Gladstone is the enforcing or defending Party, the remaining amounts will be retained by Gladstone.

6. Term and Termination

6.1 Term. The term of this Agreement shall commence on the Effective Date and, unless earlier terminated as provided in this Article 6, shall remain in effect on a Licensed Product-by-

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

Licensed Product and country-by-country basis, until the expiration of the last Valid Claim in such country covering such Licensed Product (the "**Term**"). Upon the expiration of this Agreement with respect to a Licensed Product in a particular country, the license granted by Gladstone to Licensee under Sections 2.1 with respect to such Licensed Product and such country shall become fully-paid and royalty free.

6.2 Termination Without Cause. Licensee shall have the right to terminate this Agreement at any time upon [***] days written notice to Gladstone and upon payment of all amounts due Gladstone through the effective date of termination (along with a final report pursuant to Section 4.8).

6.3 Termination for Cause.

(a) In the event Licensee fails to pay any amounts due and payable to Gladstone hereunder, and fails to make such payments within [***] days after receiving written notice of such failure, Gladstone may terminate this Agreement immediately upon written notice to Licensee.

(b) In the event Licensee commits a material breach of its obligations under this Agreement, except for breach as described in Section 6.3(a), and fails to cure that breach within [***] days after receiving written notice thereof, Gladstone may terminate this Agreement immediately upon written notice to Licensee.

(c) Gladstone may terminate this Agreement immediately upon written notice to Licensee if a voluntary or involuntary bankruptcy or insolvency proceeding involving Licensee is filed, if Licensee makes an assignment for the benefit of creditors, if Licensee becomes subject to any other similar proceeding or action related to or resulting from the insolvency or bankruptcy of Licensee, or if Licensee ceases to carry on its business related to this Agreement.

6.4 Effect of Termination.

(a) Termination of Rights. Upon termination of this Agreement by either Party pursuant to any of the provisions of Sections 6.2 or 6.3, all rights and licenses granted to Licensee with respect to the Licensed Patents shall terminate, along with all sublicenses hereunder.

(b) Accruing Obligations. Termination or expiration of this Agreement shall not relieve the Parties of obligations accruing prior to such termination or expiration, including obligations to pay amounts accruing hereunder up to the date of termination or expiration.

(c) Survival. The Parties' respective rights, obligations and duties under Sections 4 and 6, and Section 7, as well as any rights, obligations and duties which by their nature extend beyond the expiration or termination of this Agreement, shall survive any expiration or termination of this Agreement.

7. Dispute Resolution

7.1 Any and all claims, disputes or controversies arising under, out of, or in connection with this Agreement, which have not been resolved by good faith negotiations between the parties, or

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by alternate dispute resolution mechanisms (other than arbitration) which may be mutually agreed to, shall be resolved by final and binding arbitration in San Francisco, California under the rules of the American Arbitration Association then in effect. The arbitration shall be conducted by a panel of three neutral arbitrators who are independent and disinterested with respect to Gladstone and Licensee, this Agreement and the outcome of the arbitration. The arbitrators shall have no power to add to, subtract from or modify any of the terms and conditions in this Agreement. Any award rendered in such arbitration may be enforced by either party in either the courts of the State of California or in the United States District Court for the Northern District of California at San Francisco, California, to whose jurisdiction for such purposes Gladstone and Licensee hereby irrevocably consent and submit. Punitive damages shall be excluded from any arbitration, judgment or settlement.

7.2 Notwithstanding the foregoing, (i) nothing in this Article shall be construed to waive any rights or timely performance of any obligations existing under this Agreement, and (ii) any disputes arising hereunder with respect to the inventorship, validity, enforceability or other aspect of intellectual property rights, shall be resolved by a court of competent jurisdiction and not by arbitration.

7.3 The expenses of the arbitration, including the arbitrators' fees, expert witness fees and attorney's fees, may be awarded to the prevailing party, in the discretion of the arbitrators, or may be apportioned between the parties in any manner deemed appropriate by the arbitrators. Unless and until the arbitrators decide that one party is to pay for all (or a share) of such expenses, both Parties shall share equally in the payment of the arbitrators' fees as and when billed by the arbitrators.

8. Miscellaneous

8.1 **Notice.** Any notice or other communication required or permitted under this Agreement shall be in writing and will be deemed received, if delivered by courier on a business day, on the day delivered to the respective addresses given below:

If to Gladstone:	The J. David Gladstone Institutes ATTN: President 1650 Owens Street San Francisco, CA 94158
With a copy to:	The J. David Gladstone Institutes ATTN: Vice President for Intellectual Property and Legal Affairs 1650 Owens Street San Francisco, CA 94158
If to Licensee:	Fate Therapeutics, Inc. ATTN: General Counsel 3535 General Atomics Court, Suite 200 San Diego, CA 92121

8.2 No Assignment. This Agreement is not assignable by Licensee without the prior written consent of Gladstone, except Licensee may make such an assignment or transfer without Gladstone's consent to a third-party successor to substantially all of the assets or business of Licensee relating to this Agreement, whether in a merger, acquisition, sale of stock, sale of assets or other transaction. In the event that Licensee assigns this Agreement (whether or not Gladstone's consent is required pursuant to the previous sentence), Licensee shall provide written notice of such assignment to Gladstone, and the assignee or other successor of any obligations hereunder shall expressly assume such obligations in writing. Any attempted assignment or transfer that does not comply with this Section 8.2 shall be of no force or effect.

8.3 No Warranties. GLADSTONE HEREBY DISCLAIMS ANY AND ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, CONCERNING THE LICENSED PATENTS OR THE LICENSES GRANTED HEREIN, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. GLADSTONE MAKES NO REPRESENTATION OR PROVIDES ANY WARRANTY THAT THE USE OF THE MATERIALS WILL NOT INFRINGE ANY PATENT OR OTHER PROPRIETARY RIGHT.

8.4 Indemnification by Licensee. Licensee agrees to indemnify, defend and hold harmless Gladstone and any third party sponsors of the research that gave rise to the Licensed Patents (if any), and their respective trustees, officers, staff, employees, representatives and agents (the "**Indemnified Parties**") against all damages, expenses (including without limitation legal expenses), claims, demands, suits, or other actions arising from (a) a material breach of this Agreement by Licensee; (b) the gross negligence or willful misconduct of Licensee or any of its Affiliates in connection with its obligations under this Agreement; (c) Licensee's acceptance, use or disposal of any materials or their progeny or derivatives; or (d) Licensee's exercise of license granted hereunder, including without limitation any cause of action relating to product liability concerning any product, process, or service made, used or sold by Licensee or its Affiliates pursuant to any right or license granted under this Agreement; except to the extent that such damages, expenses, claims demands, suits or other actions arise from (x) a material breach of this Agreement by the Indemnified Parties, or (y) the gross negligence or willful misconduct of the Indemnified Parties in connection with its obligations under this Agreement.

8.5 Insurance. Licensee shall procure and maintain insurance or self-insure, including product liability insurance, adequate to cover its obligations hereunder and which are consistent with normal business practices of prudent companies similarly situated. It is understood by the Parties that such insurance shall not be construed to create a limit of Licensee's liability with respect to its indemnification obligations under Section 8.4. Licensee shall provide Gladstone with written evidence of such insurance upon request. Licensee shall provide Gladstone with written notice at least [***] days prior to the cancellation, non-renewal, or material change in such insurance or self-insurance.

8.6 No Liability for Incidental or Consequential Damages. IN NO EVENT SHALL GLADSTONE OR ITS RESPECTIVE TRUSTEES, OFFICERS, STAFF, EMPLOYEES, REPRESENTATIVES, AND AGENTS BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ECONOMIC DAMAGES OR INJURY TO PROPERTY AND LOST PROFITS, REGARDLESS OF WHETHER SUCH PERSONS OR ENTITIES SHALL BE ADVISED, SHALL HAVE OTHER REASON TO KNOW, OR IN FACT SHALL KNOW OF THE POSSIBILITY OF THE FOREGOING.

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

8.7 No use of Names. Licensee shall not use the names of Gladstone or its respective related entities and employees, or any adaptations thereof, in any advertising, promotional, or sales literature without the prior written consent of Gladstone; provided however, that Licensee (a) may refer to publications by employees of Gladstone in the scientific literature or (b) may state that a license from Gladstone has been granted as herein provided.

8.8 Patent Marking. Licensee shall mark, if necessary, all products manufactured, used or sold under the licenses granted pursuant to this Agreement, or their containers, in accordance with the applicable patent marking laws, as required.

8.9 Entire Agreement. This instrument, together with all Exhibits hereto, contains the entire agreement between the Parties hereto. No verbal agreement, conversation or representation between any officers, agents or employees of the Parties hereto either before or after the execution of this Agreement shall affect or modify any of the terms or obligations herein contained.

8.10 No Alterations. No change, modification, extension, termination or waiver of this Agreement, or any of the provisions herein contained, shall be valid unless made in writing and signed by a duly authorized representative of each party.

8.11 Choice of Law. The validity and interpretation of this Agreement and the legal relations of the parties to it shall be governed by the laws of the State of California, without regard to any conflicts of law principles that would provide for the application of the laws of another jurisdiction.

8.12 No Relationship. Each Party shall act solely as an independent contractor, and nothing in this Agreement shall be construed to give either Party the power or authority to act for, bind or commit the other Party in any way. Nothing herein shall be construed to create the relationship of partnership, principal and agent, or joint venture between the Parties.

8.13 Entire Document. This Agreement may be executed in one or more counterparts, each of which shall be an original and all of which shall constitute together the same document.

[SIGNATURE PAGE FOLLOWS]

In Witness Whereof, the Parties hereto have duly executed this Agreement as of the Effective Date.

FATE THERAPEUTICS, INC.

By: /s/ J. Scott Wolchko
Name: Scott Wolchko
Title: President and CEO

THE J. DAVID GLADSTONE INSTITUTES

By: /s/ Deepak Srivasteva
Name: Deepak Srivastava, M.D.
Title: President, The J. David Gladstone Institutes

EXHIBIT A

Licensed Gladstone Patent Application

GL No.	U.S. SERIAL #	TITLE	FILING DATE	INVENTORS
[***]	[***]	[***]	[***]	[***]

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

EXHIBIT B

Diligence Milestones

1. [***]

2. [***]

3. [***]

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Exhibit C

Stock Issuance Agreement

THIS STOCK ISSUANCE AGREEMENT (this "Agreement") is entered into as of the 11 day of September, 2018, by and between Fate Therapeutics, Inc., a Delaware corporation (the "Corporation"), with its principal place of business located at 3535 General Atomics Court, Suite 200, San Diego, CA, and the The J. David Gladstone Institutes, a testamentary trust, having its principal place of business located at 1650 Owens Street, San Francisco, CA 94158 ("Gladstone").

WHEREAS, Gladstone and the Corporation desire to enter into an Exclusive License Agreement of even date herewith (the "License Agreement");

WHEREAS, to induce Gladstone to enter into the License Agreement, the Corporation has agreed to issue to Gladstone 100,000 shares (the "Shares") of common stock, par value $0.001 per share, of the Corporation (the "Common Stock") in accordance with the terms hereof;

WHEREAS, Gladstone has agreed to accept the Shares upon such terms;

NOW, THEREFORE, in consideration of the mutual covenants herein contained and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

1. The Closing. The closing for the transactions contemplated hereby (the "Closing") shall take place at the offices of Goodwin Procter LLP, San Francisco, California, or such other location upon which the parties may mutually agree, at any time on or before the date thirty (30) days after execution and delivery of the License Agreement, as the Corporation and Gladstone may mutually agree. The Corporation shall issue to Gladstone the Shares at the Closing in consideration for Gladstone's execution and delivery of the License Agreement, the value of which the parties acknowledge is equal to at least the aggregate par value of the Shares. Promptly after the Closing, the Corporation shall cause to be delivered to Gladstone a stock certificate or a statement of book entry ownership representing the Shares.

2. Representations and Warranties of the Corporation. The Corporation hereby represents and warrants to Gladstone at the Closing as follows:

2.1 Organization. The Corporation is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware and has all requisite corporate power and authority to carry out the transactions contemplated hereby.

2.2 Authorization of this Agreement. The execution, delivery and performance by the Corporation of this Agreement have been duly authorized by all requisite corporate action. This Agreement has been duly executed and delivered on behalf of the Corporation and constitutes the valid and binding obligations of the Corporation, enforceable in accordance with its terms. The execution, delivery and performance of this Agreement, and the issuance, sale and delivery of the Shares, and compliance with the provisions hereof by the Corporation, do not and will not (i) violate any provision of law, statute, ordinance, rule or regulation or any ruling, writ, injunction, order, judgment or decree of any court, administrative agency or other governmental body, or (ii) conflict with or result in any breach of any of the terms, conditions or provisions of, or constitute a default (or give rise to any right of termination, cancellation or acceleration) under, or

result in the creation of any lien, security interest, charge or encumbrance upon any of the properties or assets of the Corporation under, the Certificate of Incorporation or the Bylaws of the Corporation (as each may be amended and/or restated from time to time, the "Certificate of Incorporation" and "Bylaws", respectively).

2.3 Authorization of Shares. The issuance, sale and delivery of the Shares by the Corporation hereunder have been duly authorized by all requisite corporate action of the Corporation, and when so issued, sold and delivered in accordance with the terms of this Agreement, the Shares will be validly issued and outstanding, fully paid and nonassessable.

2.4 Exemptions from Securities Laws. Subject to the accuracy of the representations and warranties of Gladstone set forth in Section 3, the provisions of Section 5 of the Securities Act of 1933, as amended (the "Securities Act") are inapplicable to the offering, issuance, sale and delivery of the Shares by virtue of the exemption afforded by Section 4(a)(2) of the Securities Act, and no consent, approval, qualification or registration or filing under any state securities or "Blue Sky" laws is required in connection therewith, except for such filings which are required or permitted to be made after the Closing and which will be made on a timely basis by the Corporation.

3. Representations and Warranties of Gladstone. Gladstone hereby represents and warrants to the Corporation as of the Closing as follows.

(a) Gladstone is duly organized, validly existing and in good standing under the laws of its jurisdiction of organization, has all requisite power and authority and has taken all necessary action required for the due authorization, execution, delivery and performance of this Agreement. This Agreement has been duly executed and delivered on behalf of Gladstone and constitutes the valid and binding obligations of Gladstone enforceable in accordance with its terms.

(b) Gladstone has not been organized, reorganized or recapitalized specifically for the purposes of investing in the Corporation, and Gladstone is acquiring the Shares for investment and not for, with a view to, or in connection with the distribution thereof.

(c) Gladstone understands that the Shares have not been registered under the Securities Act or any state securities law by reason of their issuance in a transaction exempt from the registration requirements of the Securities Act and such laws, and that the Shares must be held indefinitely unless the Shares are subsequently registered under the Securities Act and such laws or a subsequent disposition thereof is exempt from registration. The certificates for the Shares shall bear a legend to such effect.

(d) Gladstone understands that the exemption from registration afforded by Rule 144 promulgated by the Securities and Exchange Commission under the Securities Act depends upon the satisfaction of various conditions and that, if applicable, Rule 144 affords the basis for sales only in limited amounts.

(e) Gladstone represents and warrants that it (i) has sufficient knowledge and experience in business and financial matters and with respect to investment in securities of privately held companies so as to enable it to analyze and evaluate the merits and risks of the investment contemplated hereby, (ii) is able to bear the economic risk of such investment, and (iii) qualifies as an "Accredited Investor" as defined in Rule 501(a) of Regulation D under the Securities Act. Further, Gladstone is aware of the Corporation's business affairs and condition and has acquired sufficient information about the Corporation to reach an informed and knowledgeable decision to acquire the Shares.

(f) All negotiations relating to this Agreement and the transactions contemplated hereby have been carried on without the intervention of any person acting on behalf of Gladstone in such manner as to give rise to any right, interest or valid claim for any brokerage or finder's commission, fee or similar compensation.

4. Miscellaneous.

4.1 Successors and Assigns. This Agreement shall be binding upon, and inure to the benefit of, each of the parties hereto and each other person or entity who shall become a registered holder named in any certificate evidencing shares of Common Stock transferred to such holder by Gladstone or its transferees, and their respective heirs, legal representatives, successors and assigns.

4.2 Entire Agreement; Effect on Prior Documents. This Agreement, the License Agreement and the other documents referred to herein or delivered pursuant hereto contain the entire agreement between the parties with respect to the financing transactions contemplated hereby and supersede all prior negotiations, commitments, agreements and understandings between them with respect thereto.

4.3 Notices. Any notice or communication given by one party to the other in connection with this Agreement shall be sufficiently given if given in accordance with the applicable provisions set forth in the License Agreement.

4.4 Amendments; Waivers. Except as otherwise provided herein, this Agreement may be amended, and compliance with any provision of this Agreement may be omitted or waived, only by the written agreement of the Corporation and Gladstone. A waiver or omission on one occasion shall not constitute a waiver or omission on any further occasion.

4.5 Counterparts, Facsimiles. This Agreement may be executed in any number of counterparts, each such counterpart shall be deemed to be an original instrument, and all such counterparts together shall constitute but one agreement. Facsimile or other electronic transmission of execution copies or signature pages for this Agreement shall be legal, valid and binding execution and delivery for all purposes.

4.6 Sections, Headings. Section references herein refer to sections of this Agreement unless expressly provided to the contrary. The headings of the various sections of this Agreement have been inserted for convenience of reference only and shall not be deemed to be a part of this Agreement.

4.7 Governing Law. This Agreement shall be governed by, and construed and enforced in accordance with, the substantive laws of the State of California, without regard to its principles of conflicts of laws.

4.8 Severability. Any provision of this Agreement that is prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof, and any such prohibition or unenforceability in any jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

[*remainder of this page intentionally left blank*]

IN WITNESS WHEREOF, the parties have executed this Stock Issuance Agreement under seal as of the day and year first above written.

FATE THERAPEUTICS, INC.

By: /s/ J. Scott Wolckho
Name: J. Scott Wolchko
Title: President and CEO

J. DAVID GLADSTONE INSTITUTES

By: /s/ Deepak Srivastava
Name: Deepak Srivastava, M.D.
Title: President

Exhibit 10.2

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 24b-2 OF THE SECURITIES EXCHANGE ACT OF 1934.

COLLABORATION AND OPTION AGREEMENT

BY AND BETWEEN

FATE THERAPEUTICS, INC.

AND

ONO PHARMACEUTICAL CO., LTD.

DATED

SEPTEMBER 14, 2018

TABLE OF CONTENTS

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COLLABORATION AND OPTION AGREEMENT

THIS COLLABORATION AND OPTION AGREEMENT (the "**Agreement**") is made and entered into as of September **14**, 2018 (the "**Effective Date**"), by and between **FATE Therapeutics, Inc.**, a Delaware corporation located at 3535 General Atomics Court, Suite 200, San Diego, California 92121, United States of America ("**FATE**"), and **Ono Pharmaceutical Co., Ltd.**, 8-2, Kyutaromachi 1-chome, Chuo-ku, Osaka, Osaka 541-8564, Japan ("**ONO**"). FATE and ONO are sometimes referred to herein individually as a "**Party**" and collectively as the "**Parties**".

RECITALS

WHEREAS, FATE has research, development and manufacturing expertise regarding hematopoietic cell therapeutics, including T-cell therapeutics derived from engineered master induced pluripotent stem cell (iPSC) lines;

WHEREAS, ONO possesses research, development, and commercialization expertise for research, development and commercialization of pharmaceutical products in the field of oncology, including monoclonal antibody therapy;

WHEREAS, ONO and FATE desire to conduct research, development and manufacturing activities to discover and develop chimeric antigen receptor (CAR)-targeted T-cell therapeutics, where such CAR-targeted T-cell therapeutics are derived from engineered master iPSC lines;

WHEREAS, ONO desires to have an option to obtain an exclusive license to develop and commercialize certain CAR-targeted T-cell therapeutics in the Field (as defined below) in specific territories and, upon exercise of such option by ONO, FATE is willing to grant to ONO such rights on the terms and conditions set forth herein; and

WHEREAS, FATE desires to retain the right to manufacture the CAR-targeted T-cell therapeutics for which ONO may obtain the rights as described above, and to have an option to obtain the right to (co-)develop and (co-)commercialize with ONO certain CAR-targeted T-cell therapeutics for which ONO may obtain the rights as described above in specific territories.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing and the mutual agreements set forth below, the Parties agree as follows:

ARTICLE 1
DEFINITIONS

The terms in this Agreement with initial letters capitalized, whether used in the singular or the plural, shall have the meaning set forth below or, if not listed below, the meaning designated in places throughout this Agreement.

1.1 "**Affiliate**" of a Party means any Person that directly or indirectly is controlled by, controls or is under common control with a Party. For the purposes of this definition, the term "control" (including, with correlative meanings, the terms "controlled by" and "under common

control with") as used with respect to a Person means (a) in the case of a corporate entity, (i) direct or indirect ownership of more than fifty percent (50%) of the voting securities or capital stock of such entity or (ii) possession, directly or indirectly, of the power to direct the management and policies of such entity, as applicable, whether through the ownership or control of voting securities, by contract or otherwise or (b) in the case of a non-corporate entity, (i) direct or indirect ownership of more than fifty percent (50%) of the equity interests of such entity or (ii) possession, directly or indirectly, of the power to direct the management and policies of such entity, whether through the ownership or control of voting securities, by contract or otherwise; provided that, if local Laws restrict foreign ownership, control shall be established by direct or indirect ownership of the maximum ownership percentage that may, under such local Laws, be owned by foreign interests.

1.2 "**Agreement**" has the meaning set forth in the **Preamble**.

1.3 "**Allocable Overhead**" means reasonable costs related to the Common Development Activity under the Joint Development Plan including all personnel, equipment, utilities, consumables, materials, reagents and all other expenses for support staff relating to performance of Common Development Activities by each Party pursuant to the Joint Development Plan to the extent reasonably attributable to supervision, occupancy costs and supporting services and that are allocated among company departments and projects based on an appropriate factor, such as space occupied, headcount or an activity-based method; provided, that "**Allocable Overhead**" shall not include Out-of-Pocket Expenses and any costs attributable to general corporate activities, such as executive management, investor relations, business development, legal affairs or finance.

1.4 "**Antigen Binding Domain**" means an extracellular target binding domain derived from a single-chain variable fragment (scFv) of a monoclonal antibody (or from other sources, such as Fab libraries or invariant human ligands).

1.5 "**Annual Net Sales**" means the Net Sales generated over any given Calendar Year.

1.6 "**Asia**" means Japan, Korea, Taiwan, People's Republic of China, Hong Kong, Singapore, Macao, Malaysia, Myanmar, Indonesia, Philippines, East Timor, Thailand, Vietnam, Laos, and Cambodia.

1.7 "**Biosimilar Product**" means, with respect to a Collaboration Product and on a country- by-country basis, a product that (a) is marketed for sale in such country by a Third Party (not licensed, supplied or otherwise authorized by a Party or its Affiliates or Sublicensees); (b) [***].

1.8 "**BLA**" means a Biologics License Application, or similar application that is submitted to the FDA, or a foreign equivalent of the FDA, for marketing approval of a Collaboration Product in a given jurisdiction.

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1.9 "**BLA Approval**" means the Marketing Approval of a BLA by the FDA for a Collaboration Product in the United States, or a foreign equivalent of the FDA for a Collaboration Product in the applicable jurisdiction.

1.10 "**Business Day**" means a day other than (a) Saturday, Sunday or any day on which commercial banks located in New York, New York are authorized or obligated by Laws to close in case of any obligations of FATE hereunder, and (b) Saturday, Sunday, other national holidays in Japan or ONO's corporate holidays in case of any obligations of ONO hereunder; provided, that ONO shall have appropriately provided FATE with any such relevant corporate holidays at least one (1) month in advance.

1.11 "**Calendar Quarter**" means the respective periods of three (3) consecutive calendar months ending on March 31, June 30, September 30 and December 31; provided, however, that (a) the first Calendar Quarter of any particular period shall extend from the commencement of such period to the end of the first complete Calendar Quarter thereafter; and (b) the last Calendar Quarter shall end upon the effective date of the expiration or termination of this Agreement.

1.12 "**Calendar Year**" means (a) for the first Calendar Year of the Term, the period beginning on the Effective Date and ending on December 31, 2018, (b) for each Calendar Year of the Term thereafter, each successive period beginning on January 1 and ending twelve (12) consecutive calendar months later on December 31, and (c) for the last Calendar Year of the Term, the period beginning on January 1 of the Calendar Year in which this Agreement expires or terminates and ending on the effective date of expiration or termination of this Agreement.

1.13 "**CDCC Term**" means, with respect to each of the U.S. or Europe and with respect to [***], the period of time commencing on FATE's exercise of the CDCC Option and ending on the earlier of [***].

1.14 [***] means [***]

(a) [***] or

(b) [***]

1.15 "**Chimeric Antigen Receptor**" or "**CAR**" means a recombinant synthetic modular fusion protein receptor that comprises an Antigen Binding Domain, a spacer domain, a transmembrane domain, and an intracellular signaling domain (such as a domain containing immunoreceptor tyrosine-based activation motifs (ITAMs)).

1.16 "**Clearance Date**" means the date on which the following conditions are met with respect to a Competition Law Filing under **Section 13.13 (Competition Law Filings)**: (a) the waiting period under the HSR Act or other applicable Competition Law shall have expired or earlier been terminated; (b) no injunction (whether temporary, preliminary or permanent) prohibiting effectiveness of exercise of the ONO Option or the Opt-Out, as applicable, shall be in effect; (c) no judicial or administrative proceeding opposing such effectiveness shall be pending; and (d) no requirements or conditions shall have been imposed by the DOJ, FTC or other applicable governmental authority in connection with such Competition Law Filing, other than requirements or conditions that are satisfactory to the Party on whom such requirements or conditions are imposed.

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1.17 "**Clinical Trials**" means Phase I Trials, Phase II Trials, Phase III Trials, Phase IV Trials, and/or variations of such trials (for example, phase II/III studies).

1.18 "**Co-Development and Co-Commercialization Option Period**" or "**CDCC Option Period**" means, with respect to [***], the period beginning on [***] with respect to [***] and ending [***].

1.19 "**Collaboration**" means the Research, Development and Commercialization activities conducted by the Parties pursuant to this Agreement.

1.20 "**Collaboration Candidate**" means, as applicable, either Collaboration Candidate 1, Collaboration Candidate 2, or where referred to collectively, both Collaboration Candidate 1 and Collaboration Candidate 2.

1.21 "**Collaboration Candidate 1**" means a CAR-targeted T-lymphocyte therapeutic derived from a master iPSC line and generated under the Joint Development Plan, where such master iPSC line is engineered to [***], for which FATE is conducting Research and Development under the Joint Development Plan and for which: (a) ONO has not exercised the ONO Option pursuant to **Section 2.4.3 (Option Exercise)**; and (b) the applicable ONO Option Period has not expired.

1.22 "**Collaboration Candidate 2**" means a CAR-targeted T-lymphocyte therapeutic derived from a master iPSC line and generated under the Joint Development Plan, where such master iPSC line is engineered to [***], for which FATE is conducting Research and Development under the Joint Development Plan and for which: (a) ONO has not exercised the ONO Option pursuant to **Section 2.4.3 (Option Exercise)**; and (b) the applicable ONO Option Period has not expired.

1.23 "**Collaboration Candidate Selection Criteria**" means the criteria necessary to support ONO's decision as to whether to exercise the ONO Option for each Collaboration Candidate, as set forth in **Exhibit 1.23 (Collaboration Candidate Selection Criteria)** and as may be updated from time to time pursuant to **Section 2.4.2(a) (Option Exercise Criteria)**. For the avoidance of doubt, **Exhibit 1.23 (Collaboration Candidate Selection Criteria)** provides the specific Collaboration Candidate Selection Criteria for Collaboration Candidate 1 and for Collaboration Candidate 2.

1.24 "**Collaboration Product**" means, as applicable, either Collaboration Product 1, Collaboration Product 2, or where referred to collectively, both Collaboration Product 1 and Collaboration Product 2.

1.25 "**Collaboration Product 1**" means a product, pharmaceutical preparation, or formulation containing, as its active ingredient, Collaboration Candidate 1 (including any Combination Product containing Collaboration Candidate 1), provided that ONO has exercised the ONO Option pursuant to **Section 2.4.3 (Option Exercise)** prior to the expiration of the ONO Option Period for Collaboration Candidate 1.

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1.26 "**Collaboration Product 2**" means a product, pharmaceutical preparation, or formulation containing, as its active ingredient, Collaboration Candidate 2 (including any Combination Product containing Collaboration Candidate 2), provided that ONO has exercised the ONO Option pursuant to **Section 2.4.3 (Option Exercise)** prior to the expiration of the ONO Option Period for Collaboration Candidate 2.

1.27 "**Combination Product**" means a Collaboration Product that includes (a) a Collaboration Candidate and (b) at least one (1) additional therapeutically active pharmaceutical ingredient other than a Collaboration Candidate incorporated in any Collaboration Product. To be a Combination Product, all ingredients (including without limitation the drug substance) shall be presented together in the same therapeutic formulation or as part of a co-packaged and/or label- directed combination therapy as a single product and invoiced as one (1) product. Except for those drug delivery vehicles, adjuvants or excipients that are recognized by the FDA or any foreign equivalent as active ingredients, drug delivery vehicles, adjuvants and excipients are hereby deemed not to be "therapeutically active pharmaceutical ingredients," and their presence shall not be deemed to create a Combination Product for purposes of this **Section 1.27 (Combination Product)**.

1.28 "**Commencement**" or "**Commence**" means, when used with respect to Clinical Trials, the dosing of the first human patient with the first dose in such Clinical Trials and, with respect to IND Enabling Studies, the start of the first of such studies.

1.29 "**Commercialization**" or "**Commercialize**" or "**Commercial**" means activities conducted by, or on behalf of, a Party (including by its Affiliates or its Sublicensees) that are directed to commercial manufacturing and supply, obtaining pricing and reimbursement approvals, marketing, promoting, distributing, importing, exporting, offering for sale or selling a Collaboration Product, and carrying out Phase IV Trials or other Clinical Trials conducted for the purpose of market expansion, each commenced after First Commercial Sale of a Collaboration Product anywhere in the world.

1.30 "**Commercialization Plan**" means, with respect to a Collaboration Product, a plan that details the Commercialization activities to be conducted (a) by ONO in the applicable ONO Territory for both Collaboration Product 1 and Collaboration Product 2, (b) by FATE in the FATE Territory for Collaboration Product 1 and (c) by both Parties in the [***] Territory with respect to [***] during the CDCC Term, in each case including a budget with respect to any activities for which the Parties will share costs and expenses incurred in connection therewith.

1.31 "**Commercially Reasonable Efforts**" means, as to (a) [***], or (b) [***], efforts consistent with the efforts and resources normally used by ONO or FATE, as applicable, in the exercise of its reasonable business discretion relating to the research, development or commercialization of a product that is [***].

1.32 "**Committee**" means each of the JSC and/or any subcommittees created by the JSC pursuant to **Section 4.1.5(d) (Role Following the Exercise of the ONO Option)**.

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1.33 "**Competitive Product**" means as applicable, either Competitive Product 1, Competitive Product 2, or where referred to collectively, both Competitive Product 1 and Competitive Product 2.

1.34 "**Complete**" means, when used with respect to a Clinical Trial, the date on which the Party conducting such Clinical Trial completes the statistical analysis and delivers a report to the JSC of such statistical analysis for such Clinical Trial.

1.35 "**Confidential Information**" means all trade secrets, processes, formulae, data, Know- How, improvements, inventions, chemical structures, CAR constructs, techniques, marketing plans, strategies, customer lists, or other information that has been created, discovered, or developed by a Party or its Affiliates, or has otherwise become known to a Party or its Affiliates, or to which rights have been assigned to a Party or its Affiliates, as well as any other information and Materials that are deemed confidential to or by a Party or its Affiliates (including without limitation all information and Materials embodying such information of a Party's or its Affiliates' customers and any other Third Party and their consultants), in each case that are disclosed or communicated by such Party or its Affiliates to the other Party or its Affiliates, and marked "confidential" or "proprietary", whether such disclosure or communication is in oral, written, graphic, or electronic form. If the Confidential Information is disclosed orally, visually or in other intangible form, it shall be identified as confidential at the time of disclosure and reduced to a written summary marked "confidential" or "proprietary" to be prepared by the Disclosing Party and delivered to the Receiving Party within thirty (30) days after such disclosure. Notwithstanding the foregoing, the following shall be deemed Confidential Information of the Disclosing Party regardless of whether such information is marked "confidential" or "proprietary" or reduced to writing if disclosed orally, visually or in other intangible form: information exchanged between the Parties, either from Committee discussions or through the Alliance Liaison, or **[***]**.

1.36 "**Controlled**" or "**Control**" means, when used in reference to Know-How, Patents, Confidential Information, or intellectual property rights, the legal authority or right (either by ownership or license) of a Party (or any of its Affiliates) to grant a license or sublicense of such Know-How, Patents, or intellectual property rights to the other Party, or to otherwise disclose such Know-How, Patents or Confidential Information to such other Party, without breaching the terms of any agreement with a Third Party, or misappropriating such Know-How, Patents or Confidential Information of a Third Party.

1.37 "**Development**" means all non-clinical, pre-clinical and clinical drug development activities conducted under the Joint Development Plan reasonably relating to advancing (a) Collaboration Candidate(s) during the Research Term, and (b) subject to the exercise by ONO of the ONO Option in accordance with **Section 2.4.3 (Option Exercise)**, Collaboration Product(s) during the Term. Development shall include, without limitation, [***]. Development excludes all Commercialization activities. When used as a verb, "**Develop**" means to engage in Development.

1.38 "**Dollar**" or "**$**" means the lawful currency of the United States.

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1.39 "**Effective Date**" has the meaning set forth in the **Preamble**.

1.40 "**EMA**" means the European Medicines Agency, or any successor agency thereto.

1.41 "**Europe**" or "**EU**" means (a) the countries that are members of the European Union as of the Effective Date of this Agreement or that become members of the European Union thereafter, (b) the United Kingdom, including England, Northern Ireland, Scotland, and Wales and (c) Switzerland.

1.42 "**Executive Officers**" means the Chief Executive Officer of FATE and the Executive Director of Discovery and Research of ONO.

1.43 "**FATE**" has the meaning set forth in the **Preamble**.

1.44 "**FATE CDCC Territory**" means the United States and Europe, but excluding any Opt- Out Territory.

1.45 "**FATE Cell Therapy**" means (a) any Collaboration Candidate and Collaboration Product for which this Agreement is terminated [***] and (b) all Collaboration Candidates and Collaboration Products if this Agreement is terminated in its entirety (i) [***].

1.46 "**FATE Intellectual Property**" means the FATE Patents, the FATE Know-How and FATE's interest in Joint Inventions and Joint Patents, subject to **Section 7.10.2 (FATE Platform Improvement)**.

1.47 "**FATE Know-How**" means (a) all Know-How Controlled by FATE or its Affiliates as of the Effective Date; (b) all Know-How Controlled by FATE or its Affiliates at any time during the Term [***] and (c) [***], that is primarily and directly related to and/or reasonably necessary or useful for the identification, research, manufacture, formulation, delivery, packaging, use, Development and/or Commercialization of any of the Collaboration Candidates and/or Collaboration Products by ONO, or its Affiliates or Sublicensees, or a Third Party doing any of the foregoing on ONO's behalf.

1.48 "**FATE Patents**" means any and all (a) Patents Controlled by FATE or its Affiliates as of the Effective Date which are set forth on **Exhibit 1.48 (FATE Patents)**; (b) Patents Controlled by FATE or its Affiliates at any time during the Term [***] and (c) [***] and/or (ii) would be infringed, without a license granted hereunder, by the identification, research, manufacture, formulation, delivery, packaging, use, Development and/or Commercialization of any of the Collaboration Candidates or Collaboration Products by ONO, or its Affiliates or Sublicensees, or a Third Party doing any of the foregoing on ONO's behalf.

1.49 "**FATE Platform Technology**" means FATE's proprietary technology related to: [***].

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1.50 "**FATE Territory**" means (a) [***], all Territories other than Asia; and (b) [***], the FATE CDCC Territory during the CDCC Term or, subject to ONO's election in **Section 2.3.5 (Alternative Antigen Binding Domain)** of Asia, all Territories other than Asia.

1.51 "**FDA**" means the U.S. Food and Drug Administration, or any successor agency thereto.

1.52 "**Field**" means all applications for diagnostic, therapeutic, prognostic and prophylactic uses in humans, including the Oncology Field.

1.53 "**First Commercial Sale**" means, with respect to any Collaboration Product, the first sale to a Third Party of such Collaboration Product in any country in the ONO Territory for ONO or in the FATE Territory for FATE, as the case may be, after Regulatory Approval of such Collaboration Product has been granted, or such marketing and sale is otherwise permitted, by the Regulatory Authority of such country, excluding registration samples, compassionate use, and use in Phase IV Trials or Investigator Sponsored Clinical Study for which no payment has been received.

1.54 [***].

1.55 "**Full Time Equivalent**" or "**FTE**" means the equivalent of the work of one employee full time during one (1) full year of work for the Common Development Activities in accordance with the Joint Development Plan.

1.56 "**FTE Costs**" means the amount calculated by multiplying the FTE Rate by the number of FTEs to be put on the conduct of any study or Clinical Trial of Common Development Activities.

1.57 "**FTE Rate**" means the price of the work per FTE per year, and shall cover all Allocable Overhead relating to performance of Common Development Activities by each Party pursuant to the Joint Development Plan.

1.58 "**GAAP**" means generally accepted accounting principles in the United States, consistently applied.

1.59 "**Good Clinical Practices**" or "**GCP**" means the standards, practices and procedures set forth in the guidelines entitled in "Good Clinical Practice: Consolidated Guideline," including without limitation related regulatory requirements imposed by the FDA or (as applicable) any equivalent or similar standards in jurisdictions outside the United States, to the extent that such standards are applicable in the jurisdiction in which the relevant Clinical Trial is conducted or required to be followed in the jurisdiction in which Regulatory Approval of a Collaboration Product will be sought and "ICH HARMONISED TRIPARTITE GUIDELINE".

1.60 "**Good Laboratory Practices**" or "**GLP**" means the regulations set forth in 21 C.F.R. Part 58 and the requirements expressed or implied thereunder imposed by the FDA or (as applicable) any equivalent or similar standards in jurisdictions outside the United States.

1.61 "**Good Manufacturing Practices**" or "**GMP**" means (a) the regulations set forth in 21 C.F.R. Parts 210–211, 820 and 21 C.F.R. Subchapter C (Drugs), Quality System Regulations and

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the requirements thereunder imposed by the FDA, (b) EC Directive 2003/94/EC and applicable EMA guidance documents, (c) any similar or equivalent regulations and requirements in Japan and (d) any similar or equivalent regulations or requirements in other jurisdictions that the Parties agree in writing to include.

1.62 "**IFRS**" means the International Financial Reporting Standards.

1.63 "**IND**" means any Investigational New Drug application, as defined in the United States Federal Food, Drug and Cosmetics Act, as amended from time to time, and the regulations promulgated thereunder, filed with the FDA pursuant to Part 312 of Title 21 of the U.S. Code of Federal Regulations, including any amendments thereto. References herein to IND shall include, to the extent applicable, any comparable filing(s) outside the United States (such as a CTA in the European Union) necessary to Commence Clinical Trials.

1.64 "**IND Enabling Studies**" means studies comprising pre-clinical studies on Collaboration Candidates and Collaboration Products, conducted under GLP, the protocol and results of which are intended to be used to support an IND, including, but not limited to PK/ADME studies, potency studies, pharmacodynamics, safety, toxicology, pharmacology, pre-formulation, and formulation development.

1.65 "**Indication**" means any disease or condition classified as a three-character category in International Statistical Classification of Diseases and Related Health Problems (or "**ICD**") 10- CM published by the World Health Organization, that a Collaboration Product is intended to be used to diagnose, treat or prevent, which use is the subject of a separate Regulatory Filing to support a Regulatory Approval for such use. [***].

1.66 "**Issuance of BLA Filing Letter**" means acceptance of the complete BLA filing by FDA or a foreign equivalent of the FDA for review of a Regulatory Filing for Regulatory Approval or Marketing Approval, or any action or inaction having the equivalent effect in the future as a result of any changes in the regulations governing the process of such filing and acceptance.

1.67 "**Investigator Sponsored Clinical Study**" means a clinical study or research of a Collaboration Product that is sponsored and conducted by a physician, physician group or other Third Party not acting on behalf of a Party, its Affiliates or Sublicensee and who does not have a license from a Party or its Affiliates or Sublicensee to Commercialize such Collaboration Product, pursuant to an IND owned by such Third Party in the case of a Clinical Trial, and with respect to which a Party or its Affiliates or Sublicensee provides clinical supplies of the Collaboration Product, funding or other support for such clinical study or research.

1.68 "**Joint Development Plan**" means a plan that details all Research and Development activities to be conducted pursuant to this Agreement with respect to (a) Collaboration Candidate(s) during the respective Research Term, and (b) subject to the exercise by ONO of the ONO Option in accordance with **Section 2.4.3 (Option Exercise)**, Collaboration Product(s) in the ONO Territory and the FATE Territory during the Term. The Joint Development Plan shall include any Common Development Activities in and outside the ONO Territory, in each case including a budget with respect to any activities for which the Parties will share costs and expenses incurred in connection therewith. The Joint Development Plan for the activities to be conducted during the first twelve (12) months of the Research Term is set forth on **Exhibit 1.68 (Joint Development Plan)** and will be amended to include the activities of subsequent periods

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from time to time, such amendment of which will be approved pursuant to **Section 2.3.2 (Approval of Joint Development Plan)**. The Joint Development Plan does not include activities to be conducted by ONO in connection with its research and development of the [***] prior to ONO's delivery of such [***].

1.69 "**Know-How**" means technical information and know-how, including without limitation biological, chemical, pharmacological, toxicological, clinical, assay, trade secrets, and manufacturing data, nonclinical, preclinical and clinical data, the specifications of ingredients, manufacturing processes, formulation, specifications, sourcing information, quality control and testing procedures, and related know-how and trade secrets.

1.70 "**Knowledge**" means [***].

1.71 "**Laws**" means all laws, statutes, rules, regulations, ordinances and other pronouncements having the effect of law of any federal, national, multinational, state, provincial, county, city or other political subdivision, domestic or foreign, in each case that are applicable to the activity in question and the jurisdiction in which it is conducted.

1.72 "**Major Patent Territory**" means [***].

1.73 "**Materials**" means any tangible biological, chemical or physical materials, including, for example, compounds, tissues, fluids, cells, cell lines, plasmids, gene constructs, and laboratory animals, and parts or components thereof.

1.74 "**Multi-national Clinical Trial**" means any Clinical Trial that is conducted in at least one country in the ONO Territory and at least one country in the FATE Territory, in accordance with one common protocol and conducted by both Parties.

1.75 "**Net Sales**" means, with respect to a particular time period, the total amounts invoiced to Third Parties by ONO, its Affiliates or Sublicensees for sale or other distribution of Collaboration Products during such time period to Third Parties, less the following deductions to the extent actually allowed or incurred with respect to such sales:

(a) [***]

(b) [***]

(c) [***]

(d) [***]

(e) [***]

(f) [***]

(g) [***]

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Notwithstanding the foregoing, amounts billed by ONO, or its Affiliates or Sublicensees, for the sale of Collaboration Products among ONO, its Affiliates and its Sublicensees for resale to Third Parties shall not be included in the computation of Net Sales hereunder. Net Sales shall be accounted for in accordance with GAAP or IFRS, as applicable. Net Sales shall exclude any samples of Collaboration Product transferred or disposed of at no cost for Clinical Trials including compassionate use, Investigator Sponsored Clinical Study, promotional or educational purposes.

Notwithstanding the foregoing, in the event a Collaboration Product is sold in a country in the Territory as a Combination Product, Net Sales of the Combination Product will be calculated as follows:

(i) [***]

(ii) [***]

(iii) [***]

(iv) [***]

[***]

1.76 "**Oncology Field**" means: (a) with respect to Collaboration Product 1, [***]; and (b) with respect to Collaboration Product 2, [***].

1.77 "**ONO**" has the meaning set forth in the **Preamble**.

1.78 "**ONO Antigen Binding Domain**" means the Antigen Binding Domain provided by ONO to FATE for Research and Development [***] under this Agreement, where such Antigen Binding Domain (a) is proprietary to or, subject to **Section 7.10.3 (Necessary License)** is Controlled by, ONO and (b) binds one of the target antigens listed on **Exhibit 1.78 (Target Antigens for** [***]**)** when such target antigen [***] and such binding is the intended primary mechanism of action [***].

1.79 "**ONO Intellectual Property**" means the ONO Know-How, the ONO Patents and the ONO's interest in Joint Invention and Joint Patent.

1.80 "**ONO Know-How**" means (a) all Know-How Controlled by ONO or its Affiliates as of the Effective Date; (b) all Know-How Controlled by ONO or its Affiliates at any time during the Term [***] and (c) [***] that is primarily and directly related to and/or reasonably necessary or useful for the identification, research, manufacture, formulation, delivery, packaging, use, Development and/or Commercialization of any of the Collaboration Candidates, Collaboration Products or FATE Cell Therapy, including the ONO Antigen Binding Domain, by FATE, or its Affiliates or Sublicensees, or a Third Party doing any of the foregoing on FATE's behalf.

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1.81 "**ONO Option Period**" means, for each Collaboration Candidate, the time period beginning on the Effective Date and expiring upon the date that is [***], subject to **Section 2.4.3 (Option Exercise)**.

1.82 "**ONO Patents**" means any and all (a) Patents Controlled by ONO or its Affiliates as of the Effective Date; (b) all Patents Controlled by ONO or its Affiliates at any time during the Term [***] and (c) [***] and/or (ii) would be infringed, without a license granted hereunder, by the identification, research, manufacture, formulation, delivery, packaging, use, Development and/or Commercialization of any of the Collaboration Candidates, Collaboration Products or FATE Cell Therapy, including the ONO Antigen Binding Domain, by FATE, or its Affiliates or Sublicensees, or a Third Party doing any of the foregoing on FATE's behalf.

1.83 "**ONO Territory**" means (a) for [***], the territory of Asia, and (b) for [***], worldwide or, subject to [***], the territory of Asia.

1.84 "**Out-of-Pocket Expenses**" means payments invoiced by a Third Party in relation to the Research and Development activities that a Party is required to pay and that pertain to work performed by such Third Party after the Effective Date that is directly and solely attributable to the Research and Development activities under the Joint Development Plan, where such payments shall be evidenced by invoices or receipts issued by such Third Party.

1.85 "**Patents**" means patents and patent applications and (a) any foreign counterparts thereof, (b) all divisionals, continuations, continuations in-part thereof or any other patent application claiming priority directly or indirectly to (i) any such specified patents or patent applications or (ii) any patent or patent application from which such specified patents or patent applications claim direct or indirect priority, and (c) all patents issuing on any of the foregoing, and any foreign counterparts thereof, together with all registrations, reissues, re-examinations, renewals, supplemental protection certificates, or extensions of any of the foregoing, and any foreign counterparts thereof.

1.86 "**Payment Quarter**" means the respective periods of three (3) consecutive months ending on a day before the same date of the Effective Date forthcoming every three consecutive (3) months following the Effective Date during the Research Term; provided, however, that the last Payment Quarter shall end upon the last date of the Research Term.

1.87 "**Person**" means any individual, firm, corporation, partnership, limited liability company, trust, business trust, joint venture, governmental authority, association or other entity.

1.88 "**Phase I Trial**" means the first human clinical trial of a Collaboration Product in any country, the principal purpose of which is a preliminary determination of safety in healthy individuals or patients, as more fully defined in 21 C.F.R. § 312.21(a), or its successor regulation, or the equivalent in any foreign country.

1.89 "**Phase II Trial**" means a human clinical trial of a Collaboration Product in any country that is intended to explore a variety of doses, dose response, and duration of effect, and to generate initial evidence of clinical safety and activity in one or more target patient populations,

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as more fully described in 21 C.F.R. § 312.21(b), or its successor regulation, or the equivalent in any foreign country.

1.90 "**Phase III Trial**" means a human clinical trial of a Collaboration Product in any country that is (a) conducted after evidence suggesting effectiveness of the Collaboration Product has been obtained pursuant to one or more previous human clinical trials, and (b) conducted to gather additional information about effectiveness and safety as needed to evaluate the benefit-risk relationship of the drug and to provide an adequate basis for submission of a BLA to (i) the FDA, as more fully defined in 21 C.F.R. § 312.21(c), or its successor regulation or (ii) equivalent Regulatory Filings with similar requirements in a country other than the United States.

1.91 "**Phase IV Trial**" means a human clinical trial for a Collaboration Product Commenced after receipt of Regulatory Approval in the country for which such trial is being conducted and that is conducted within the parameters of the Regulatory Approval for the Collaboration Product. Phase IV Trials may include, without limitation, epidemiological studies, modeling and pharmacoeconomic studies of Collaboration Product and post-marketing surveillance studies.

1.92 "**Prior CDAs**" means the Mutual Nondisclosure Agreements between FATE and ONO having [***].

1.93 "**Regulatory Approvals**" or "**Marketing Approval**" means, with respect to any Collaboration Product in any jurisdiction, all approvals from any Regulatory Authority necessary, legally or practically, for the Commencement of Clinical Trials or the sale of the Collaboration Product in such jurisdiction in accordance with Laws, including without limitation any approvals for importation, manufacture, pricing, and/or reimbursement.

1.94 "**Regulatory Authority**" means any national or supranational governmental authority, including without limitation the FDA, EMA or Kourousho (i.e., the Japanese Ministry of Health, Labour and Welfare ("**JMHW**")), or any successor agency thereto, that has responsibility in countries in the Territory over the Development and/or Commercialization of a Collaboration Candidate and/or a Collaboration Product.

1.95 "**Regulatory Filings**" means any and all regulatory applications, filings, approvals and associated correspondence required to commence Development, manufacture, marketing, sale and importation of Collaboration Products in, or into, each country or jurisdiction in the Territory.

1.96 "**Research**" means all scientific investigation activities conducted under the Joint Development Plan reasonably relating to advancing (a) Collaboration Candidate(s) during the Research Term, and (b) subject to the exercise by ONO of the ONO Option in accordance with **Section 2.4.3 (Option Exercise)**, Collaboration Product(s) during the Term. When used as a verb, "**Research**" means to engage in Research.

1.97 "**Research Term**" means, with respect to each Collaboration Candidate, the period commencing on the Effective Date and ending on the earliest of (a) the date the JSC determines that such Collaboration Candidate has met the Collaboration Candidate Selection Criteria, (b) termination by ONO of the Research of such Collaboration Candidate and (c) the date that is the later of (i) [***] after the Effective Date, which may be extended by mutual agreement of the

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Parties and (ii) completion of all activities set forth in the Joint Development Plan for such Collaboration Candidate that are to be completed in order to evaluate whether such Collaboration Candidate has met the Collaboration Candidate Selection Criteria.

1.98 "**Royalty Term**" means, on a country-by-country and Collaboration Product-by- Collaboration Product basis, the period commencing on the First Commercial Sale of a Collaboration Product in a country and ending on the date that is the later to occur of (a) expiration of the last Valid Claim covering [***].

1.99 "**Sublicense**" means a license or sublicense granted by written agreement pursuant to which a Third Party became a Sublicensee.

1.100 "**Sublicensee**" means (a) any Third Party granted a license or sublicense by a Party of any of the rights Controlled by such Party under FATE Intellectual Property or ONO Intellectual Property, as the case may be, to use, sell, offer to sell, promote, distribute, import, export, label, package and otherwise Develop and/or Commercialize a Collaboration Product within a particular country of its respective Territory, and/or (b) a Third Party granted a further Sublicense, in each case of subsection (a) and (b) in this **Section 1.100** as set forth in **Section 5.2 (Sublicensing by ONO)** or **Section 5.4 (License or Sublicense** [***] **in the FATE Territory)**.

1.101 "**Target 1**" means [***].

1.102 "**Target 2**" means [***].

1.103 "**T Cell Biology**" means [***].

1.104 "**T Cell Biology Activities**" means those Research and Development activities that are specifically related to T-Cell Biology and which are set forth under the Joint Development Plan and identified as T Cell Biology Activities in the Joint Development Plan.

1.105 "**Territory**" means the world, including both of the ONO Territory and the FATE Territory, or either of the ONO Territory or the FATE Territory, as the case may be.

1.106 "**Third Party**" means any Person other than ONO, FATE, and their respective Affiliates.

1.107 "**United States**" or "**U.S.**" means the United States of America and all its territories and possessions.

1.108 "**Valid Claim**" means a claim within the FATE Patents or Joint Patents filed or issued in the ONO Territory, [***] that has not been abandoned or allowed to lapse or a claim within an issued United States or international patent that has not expired, lapsed, or been cancelled or abandoned, and that has not been dedicated to the public, disclaimed, or held unenforceable, invalid, or been cancelled by a court or administrative agency of competent jurisdiction in an order or decision from which no appeal has been or can be taken, including without limitation through opposition, re-examination, reissue or disclaimer. For any Royalty Term of FATE Cell Therapy, "**Valid Claim**" means a claim within the ONO Patents or Joint Patents filed and/or issued in the Territory, [***] that has not been abandoned or allowed to lapse or a claim within an issued United States or international patent that has not expired, lapsed, or been

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cancelled or abandoned, and that has not been dedicated to the public, disclaimed, or held unenforceable, invalid, or been cancelled by a court or administrative agency of competent jurisdiction in an order or decision from which no appeal has been or can be taken, including without limitation through opposition, re-examination, reissue or disclaimer.

1.109 Additional Definitions. Each of the following definitions is set forth in the Section of this Agreement indicated below:

Definition	Section
[***]	[***]
Additional Development	2.3.7
Alliance Liaison	4.2
[***]	[***]
Annual R&D Fees	6.2.2
Bankruptcy Code	11.4
Breaching Party	11.2.1
CAR Sequence	1.48
CDCC Option	2.4.4(a)
Clinical Supply Agreement	3.2.1(a)
Collaboration Report	2.2.2
Commercial Supply Agreement	3.2.1(b)
Common Brand Name	2.5.3(a)
Common Development Activities	2.5.2(b)
Competition Law Filing	2.4.3(b)
Competition Laws	2.4.3(b)
[***]	[***]
[***]	[***]
Competitive Product Infringement	7.5.1
[***]	[***]
Cure Period	11.2.1
Development Milestone Payment	6.3.4
Disclosing Party	8.1
Disputes	12.1
Exercise Date	2.4.3(a)
Existing Agreements	7.10.1
FATE Indemnitees	10.1
FATE In-Licensed Platform Improvement	7.10.2
FATE Logo	5.6
[***]	[***]
Force Majeure	13.3
HSR Act	2.4.3(b)
ICC Rules	12.3.1
ICD	1.65

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Indemnification Claim	10.3
Indemnitee	10.3
Indemnitor	10.3
Indirect Taxes	6.10.4
Inventions	7.1.1
JMHW	1.94
Joint Inventions	7.1.2(c)
Joint IP Prosecuting Party	7.4
Joint Patents	7.4
Joint Patent Costs	7.4
Joint Steering Committee or JSC	4.1.1
JSC Chairperson	4.1.6
Licensed Party	11.5
Losses and Claims	10.1
Necessary License	7.10.3(a)
Non-breaching Party	11.2.1
Non-redomiciling Party	6.10.2
[***]	6.3.1
[***]	2.3.3
ONO Indemnitees	10.2
ONO Option	2.4.1
Option Exercise Payments	6.3.3
Opt-Out	2.4.4(e)
Opt-Out Effective Date	2.4.4(e)
Opt-Out Territory	2.4.4(e)
Owning Party	11.5
Party or Parties	Preamble
Pharmacovigilance Agreement	2.5.8
Potential Necessary License	7.10.3(a)
Project Management Team or PMT	4.1.7(a)
Project Manager	4.1.7(a)
Receiving Party	8.1
Redomiciling Party	6.10.2
[***]	6.4.6
Sales Milestone Payments	6.3.5
Supply Agreements	3.2.1(b)
Successor	1.14(a)
Term	11.1
[***]	[***]
[***]	7.10.4
Unexpected Cost Increase	2.3.7
Withholding Amount	6.10.1

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ARTICLE 2
COLLABORATION

2.1 General Collaboration Overview.

2.1.1 ONO Obligations.

(a) During the Research Term.

(i) Under the Joint Development Plan. During the Research Term, ONO shall undertake Research and Development activities assigned to it in accordance with the Joint Development Plan, with the objective of advancing each Collaboration Candidate to meet the Collaboration Candidate Selection Criteria, including [***] so that FATE may undertake further Research and Development activities in accordance with the Joint Development Plan with the objective of advancing Collaboration Candidate 2 to meet the Collaboration Candidate Selection Criteria, [***].

(ii) Independent of the Joint Development Plan. During the Research Term and pursuant to terms and conditions of this Agreement and [***] in particular, ONO shall use Commercially Reasonable Efforts to research and develop, at its sole discretion and expense and independent of the Joint Development Plan, [***] with the objective of delivering to FATE such [***].

(b) After the Research Term. After the Research Term, ONO shall use Commercially Reasonable Efforts to Develop and Commercialize all Collaboration Products for which it has exercised the ONO Option in accordance with **Section 2.4.3 (Option Exercise)** in the applicable Oncology Field in the applicable ONO Territory at its sole expense, subject to **Section 2.5.7 (Responsibilities for the Conduct of Development, and General Costs of, Collaboration Products)** with respect to the cost sharing of the Common Development Activities, and in accordance with the terms and conditions of this Agreement and the Joint Development Plan and Commercialization Plan, provided, that (i) with respect to [***], ONO shall use Commercially Reasonable Efforts to Develop and Commercialize it in the Oncology Field applicable to [***], in the ONO Territory, including to conduct any Common Development Activities assigned to it in accordance with **Section 2.5.2 (Development Plan)**, and the allocation of costs between FATE and ONO, and subsequently specified in the Joint Development Plan; and (ii) in the event FATE exercises the CDCC Option with respect to [***], then with respect to the FATE CDCC Territory during the CDCC Term, ONO shall use Commercially Reasonable Efforts to Develop and Commercialize it in the Oncology Field applicable to [***] in the ONO Territory, including to undertake the Common Development Activities and other activities allocated to ONO in the FATE CDCC Territory in accordance with **Sections 2.4.4 (CDCC Option)** and **2.5.2 (Development Plan)** and subsequently specified in the Joint Development Plan and cost sharing pursuant to **Section 2.4.4 (CDCC Option)** during the CDCC Term, and co-Commercialization activities in accordance with **Section 2.4.4 (CDCC Option)** and subsequently specified in the Commercialization Plan.

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2.1.2 FATE Obligations.

(a) During the Research Term. During the Research Term, FATE shall undertake Research and Development activities assigned to it in accordance with the Joint Development Plan, with the objective of advancing each Collaboration Candidate to meet the Collaboration Candidate Selection Criteria for the relevant Collaboration Product so that ONO may determine whether to exercise the ONO Option with respect thereto. As part of its activities under the Joint Development Plan, pursuant to terms and conditions of this Agreement, FATE shall use Commercially Reasonable Efforts to: (i) [***] (ii) [***] and (iii) [***].

(b) After the Research Term.

(i) [***] After the Research Term, FATE shall use Commercially Reasonable Efforts to Develop and Commercialize [***], in the Oncology Field applicable to [***], in the FATE Territory at its sole expense, subject to **Section 2.5.7 (Responsibilities for the Conduct of Development, and General Costs of, Collaboration Products)** with respect to the cost sharing of the Common Development Activities, and in accordance with the terms and conditions of this Agreement and the Joint Development Plan, including to conduct any Common Development Activities assigned to it in accordance with **Section 2.5.2 (Development Plan)** and the allocation of costs between FATE and ONO, and subsequently specified in the Joint Development Plan.

(ii) [***] After the Research Term, with respect to [***], subject to the exercise of the CDCC Option by FATE, FATE shall use Commercially Reasonable Efforts to Develop and Commercialize [***] in the Oncology Field applicable to [***] in the [***] Territory during the CDCC Term, including to undertake during the CDCC Term the Common Development Activities and other activities allocated to FATE in the [***] Territory in accordance with **Sections 2.4.4 (CDCC Option)** and **2.5.2 (Development Plan)** subsequently specified in the Joint Development Plan and cost sharing pursuant to **Section 2.4.4 (CDCC Option)** during the CDCC Term, and co-Commercialization activities in accordance with **Section 2.4.4 (CDCC Option)** and subsequently specified in the Commercialization Plan.

2.2 Standards of Conduct; Records and Reports.

2.2.1 Standard of Conduct. Each Party shall conduct all such Research, Development and Commercialization activities in compliance with Laws, including without limitation all legal and regulatory requirements pertaining to the design and conduct of Clinical Trials.

2.2.2 Collaboration Reports. As agreed in each JSC meeting or as otherwise agreed between the Parties, each Party will provide the JSC with written development reports or presentations ("Collaboration Reports"). Collaboration Reports shall include [***]. Collaboration Reports will also include **[***].**

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2.2.3 Subcontracting. Subject to and without limiting **Section 5.2 (Sublicensing by ONO) and Section 5.4 (License or Sublicense [***] in the FATE Territory),** each Party may fulfill its Research, Development and Commercialization obligations under this Agreement through subcontracting to a Third Party contractor or contract service organization; provided that: (a) such subcontracting by a Party shall not adversely affect its ability to fulfill its obligations under this Agreement or the rights of the other Party under this Agreement; (b) any such Third Party contractor to whom such Party discloses Confidential Information shall enter into an appropriate written agreement obligating such Third Party contractor to be bound by obligations of confidentiality and restrictions on use of such Confidential Information that are no less restrictive than the obligations in Article 8 (Confidentiality); (c) such Party will obligate such Third Party contractor to agree in writing to assign or license (with the right to grant sublicenses) to such Party any inventions (and Patents covering such inventions) made by such Third Party contractor in performing such services for such Party that are necessary for the Research, Development and Commercialization of Collaboration Candidates or Collaboration Products, as applicable, and (d) such Party shall at all times be responsible for the performance of such Third Party contractor and shall remain primarily responsible to the other Party for the fulfillment of its obligations under this Agreement even after such obligations are subcontracted to such Third Party contractor.

2.2.4 Records. Each Party shall, and shall require its Affiliates, Sublicensees and Third Party contractors to, maintain complete and accurate hard and/or electronic copies of records of all work conducted in furtherance of the Research, Development and Commercialization of Collaboration Candidates and Collaboration Products, as the case may be, and all results, data, and developments made in conducting such activities. Such records shall be complete and accurate and shall fully and properly reflect all such work done and results achieved in sufficient detail and in good scientific manner appropriate for patent and regulatory purposes. Each Party shall provide to the other Party copies of such records promptly upon any reasonable request.

2.2.5 Cooperation. Each Party will provide reasonable consultation to the other Party, as reasonably requested by the other Party, in connection with such other Party's Research, Development and Commercialization activities under this Agreement.

2.3 Research and Development During the Research Term.

2.3.1 General. During the Research Term, FATE shall have primary responsibility for conducting all Research and Development activities in accordance with the Joint Development Plan. Except as otherwise expressly provided in this Agreement or in the Joint Development Plan, the Parties shall [*******].

2.3.2 Approval of Joint Development Plan. Within ten (10) Business Days after the Effective Date, the JSC shall formally approve the Joint Development Plan set forth on Exhibit 1.68 (Joint Development Plan) submitted by FATE which covers Research and Development activities for the first year of the Research Term. For each subsequent year of the Research Term, FATE shall, [***], submit the draft Joint Development Plan for the subsequent year (covering the Research and Development activities [***] of the year thereafter) of the Research Term to the

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JSC for review. The Parties shall mutually discuss and the JSC shall approve such updated Joint Development Plan [***]. Any addition, revision or amendment to the Joint Development Plan during the Research Term shall be subject to the unanimous decision by the JSC, with neither Party having final decision-making authority with respect thereto.

2.3.3 [***]

2.3.4 [***]. During the Research Term, ONO shall establish the criteria for incorporating the [***]. ONO shall provide updates to the JSC with respect to its research and development of the ONO Antigen Binding Domain. ONO shall consider, in good faith, any comments from the JSC with respect to the identity and the research and development of the ONO Antigen Binding Domain. Upon determination by ONO that an ONO Antigen Binding Domain has met the criteria for [***]. As soon as reasonably practical, ONO shall deliver to FATE [***] and all ONO Know-How directly relevant to such ONO Antigen Binding Domain then Controlled by ONO, and FATE (and ONO, to the extent any such activities are assigned to ONO under the Joint Development Plan) shall undertake further Research and Development to incorporate such ONO Antigen Binding Domain [***] in accordance with the Joint Development Plan. FATE (and ONO, to the extent any activities are assigned to ONO under the Joint Development Plan) shall use Commercially Reasonable Efforts to complete all activities as set forth in the Joint Development Plan to enable ONO to exercise ONO Option during the Research Term, provided, however, in the case FATE finds it is difficult to complete all activities as set forth in the Joint Development Plan during the Research Term, FATE shall promptly notify ONO of such fact and Parties shall discuss in good faith to extend the Research Term to complete such activities.

2.3.5 Alternative Antigen Binding Domain. [***]

2.3.6 [***]

[***]

[***]

2.3.7 Additional Development. If, due to unexpected technical, scientific, medical, and/or market condition factors, either Party determines that it is advisable to perform Research and Development not anticipated in the then-current Joint Development Plan ("Additional Development"), the costs of which, together with the costs of previous Research and Development activities performed by FATE under the then-current Joint Development Plan, exceed the amounts set forth in the annual budget included in such Joint Development Plan prior to such date (the foregoing, an "**Unexpected Cost Increase**"), the Party shall promptly notify such determination to the JSC. Then, the Parties shall meet to discuss the circumstances giving rise to the Unexpected Cost Increase and to evaluate possible ways of avoiding such Unexpected Cost Increase, or of updating the Joint Development Plan and allocating the cost of conducting any such Additional Development between the Parties. In this instance, the JSC shall be responsible for approving such updated Joint Development Plan including cost and deciding whether [*******].

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2.4 ONO Option; CDCC Option.

2.4.1 Exclusive Option Right. Subject to the terms and conditions of this Agreement, FATE hereby grants to ONO the exclusive right to elect, at its sole discretion, to obtain a license for Collaboration Candidate 1 and Collaboration Candidate 2 under Section 5.1 (Licenses to ONO) to Develop and Commercialize such Collaboration Candidate as a Collaboration Product under the terms and conditions set forth in this Agreement (the "ONO Option"), which license shall be (a) [***] (b) [***] if FATE does not exercise the CDCC Option in accordance with Section 2.4.4 (CDCC Option), and (c) semi-exclusive for [***] as set forth in **Section 5.3.3 (License upon Exercise of CDCC Option [***]**) if FATE exercises the CDCC Option in accordance with **Section 2.4.4 (CDCC Option)**, as the case may be. The ONO Option for each Collaboration Candidate shall expire at the end of the ONO Option Period corresponding to a given Collaboration Candidate.

2.4.2 Option Exercise Criteria.

(a) The Parties have agreed upon the initial Collaboration Candidate Selection Criteria as of the Effective Date for each of Collaboration Candidate 1 and Collaboration Candidate 2, attached as **Exhibit 1.23 (Collaboration Candidate Selection Criteria)**, to enable ONO to determine whether it wishes to exercise the ONO Option. The JSC shall review the Collaboration Candidate Selection Criteria at every JSC meeting and add additional Collaboration Candidate Selection Criteria for a Collaboration Candidate or modify the Collaboration Candidate Selection Criteria for a Collaboration Candidate as necessary from time to time during the Research Term pursuant to **Section 4.1.4 (Specific Responsibilities Prior to the Exercise of the ONO Option)**, and shall update the Collaboration Candidate Selection Criteria [***].

(b) During the Research Term, each Party, or the Parties, as appropriate, will notify the JSC upon the potential achievement of the Collaboration Candidate Selection Criteria and will provide the JSC with data and information supporting such Party's or the Parties' determination that the Collaboration Candidate Selection Criteria are met with respect to such Collaboration Candidate. The JSC shall discuss in good faith whether the data resulting from the Research and Development of each Collaboration Candidate establishes that the Collaboration Candidate Selection Criteria for such Collaboration Candidate are met, or is otherwise reasonably sufficient for ONO to determine whether to exercise the ONO Option for such Collaboration Candidate. The JSC shall have a period of [***] days following the receipt of such notice and data and information from the notifying Party to determine whether the Collaboration Candidate Selection Criteria have been met. If the JSC determines that the Collaboration Candidate Selection Criteria have been met, the JSC shall notify each of ONO and FATE of such determination in writing. If the JSC determines that the Collaboration Candidate Selection Criteria has not been met, or that further data should be obtained or additional studies should be performed before ONO will have obtained data reasonably sufficient to determine whether to exercise the ONO Option, for a Collaboration Candidate, the JSC shall (i) [***].

(c) Notwithstanding the foregoing, ONO shall have the discretion to exercise the ONO Option with respect to a particular Collaboration Candidate, if the Collaboration Candidate Selection Criteria have not been met for such Collaboration Candidate during the ONO Option Period.

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2.4.3 Option Exercise.

(a) For each Collaboration Candidate, during the ONO Option Period applicable to such Collaboration Candidate, ONO may exercise the ONO Option for the Collaboration Candidate by written notice to FATE within the applicable ONO Option Period (the "**Exercise Date**"); provided, however, that if a Competition Law Filing (as defined below) is required in compliance with applicable Law, the effectiveness of such exercise will automatically be extended until the Clearance Date, and instead of being the date on which the ONO Option is exercised, the Exercise Date will be deemed to be the date that is the Clearance Date. Upon the Exercise Date for the Collaboration Candidate, the Collaboration Candidate for which the ONO Option has been exercised shall be designated a Collaboration Product for further Research, Development and Commercialization, unless and until this Agreement is terminated with respect to such Collaboration Product. For the avoidance of doubt, if FATE undergoes a Change of Control, ONO shall nonetheless be entitled to exercise the ONO Option as provided in this **Section 2.4.3 (Option Exercise)**. If ONO does not exercise the ONO Option for a particular Collaboration Candidate during the applicable ONO Option Period, this Agreement will terminate with respect to such Collaboration Candidate pursuant to [***]**.**

(b) If a filing or submission with respect to the exercise of such ONO Option under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (the "**HSR Act**") or any antitrust, competition or merger control Law applicable to such exercise (collectively, "**Competition Laws**" and such filing or submission "**Competition Law Filings**") are required, ONO shall provide, prior to its exercise of the ONO Option, a written notice to FATE that ONO has determined in good faith based on consultations with its counsel that the exercise of the ONO Option will be subject to any Competition Laws Filings, and then the provisions of **Section 13.13 (Competition Law Filings)** shall apply. FATE shall provide to ONO any information reasonably requested by ONO in its assessment of potential notifications under applicable Competition Laws pursuant to this **Section 2.4.3(b) (Option Exercise)**.

2.4.4 CDCC Option.

(a) **Grant**. [***] FATE has the right to elect, at its sole discretion, to co-Develop and co-Commercialize [***] with ONO or its Affiliates or Sublicensee(s) [***] (the "**CDCC Option**"), pursuant to the license from ONO to FATE in **Section 5.3.3 (License upon Exercise of CDCC Option** [***]**)**, under the terms and conditions set forth in this Agreement. The CDCC Option for [***] shall expire at the end of the CDCC Option Period.

(b) **Exercise; Allocation of Responsibilities**. FATE may exercise the CDCC Option for [***] by written notice to ONO within the CDCC Option Period. Upon FATE's exercise of such option, FATE shall have the right to co-Develop and co- Commercialize [***] with ONO [***] Territory. If FATE exercises its CDCC Option under this **Section 2.4.4 (CDCC Option)**, the JSC will update the Joint Development Plan to include and allocate between the Parties all activities for the Research and Development of [***], as well as a budget and timeline for such activities, within [***] days after FATE exercises the CDCC Option. In addition, prior to the Commencement of the first [***] the JSC will prepare a Commercialization Plan for [***] Territory, which plan will allocate commercial activities between the Parties and will include a budget and timeline for such activities. The JSC will

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allocate such Research, Development and Commercialization activities taking into account the Parties' respective experience with the research and development of cell therapy products and the Parties' then-existing commercial infrastructure, or desire and intent to develop a commercial infrastructure, in [***] Territory. Furthermore, the Parties will negotiate in good faith and enter into, in accordance with the provisions of this **Section 2.4.4(b) (CDCC Option)**, a sales and co-promotion agreement governing the terms and conditions regarding the decision-making mechanism of the JSC with respect to co-Commercialization of [***] in [***] Territory, [***], and detailed procedures of the matters set forth in **Section 2.4.4(c) (CDCC Option)** below if necessary.

(c) Cost and Profit Sharing. Subject to the exercise by FATE of the CDCC Option for [***] and each Party [***]. In connection with the preparation of the Joint Development Plan, the Parties shall establish a mechanism for reconciliation and reimbursement of development and manufacturing costs, and related definitions. In connection with the preparation of the Commercialization Plan, the Parties shall establish detailed procedures for sharing such costs and profits, including procedures for cost and revenue reporting, reconciliation and payments, efforts in sales promotion to be used by each Party, and definitions of the costs to be shared and included in the profit calculation. Each Party shall comply with all procedures and payment obligations established by the Parties. [***]. For the purpose of this **Section 2.4.4(c)**, subject to **Section 7.10.1 (Existing Agreements)**, profits and losses means [***]. Notwithstanding anything to the contrary in this **Section 2.4.4(c)**, the Parties shall discuss in good faith and reach an agreement on the further details of the method of profit and loss sharing between FATE and ONO as set forth in **Section 2.4.4(b) (CDCC Option)** above.

(d) Sublicensees. If, subject to the exercise by FATE of the CDCC Option, the Parties agree to seek a Third Party licensee to exclusively Develop and/or Commercialize [***] in [***] Territory under a Sublicense, the Parties shall [***], in accordance with the procedures and definitions established by the Parties pursuant to sub-section (c) above. [***]

(e) Opt-Out. After FATE exercises the CDCC Option, FATE shall have the right to terminate its rights and obligations to co-Develop and co-Commercialize [***] in its entirety (each, an "**Opt-Out**" and the applicable country (in the case of the U.S.) or region (in the case of Europe) in (A), (B) or (C), the "**Opt-Out Territory**") on at least [***] days written notice to ONO; provided that such Opt-Out will be effective upon [***] (the "**Opt-Out Effective Date**"). Upon the Opt-Out Effective Date, the Parties will conduct all activities necessary to transition all responsibilities of FATE with respect to the Development and Commercialization (but not manufacture) of [***] in the Opt-Out Territory to ONO, which may include [***]. Following the Opt-Out Effective Date, (i) the license granted by FATE to ONO shall become exclusive in the Opt-Out Territory pursuant to **Section 5.1.3 (License upon Exercise of ONO Option** [***]**)**, and (ii) all the obligations of FATE, and all the rights and obligations of ONO, in the Opt-Out Territory shall be exercised or performed by FATE or ONO, as applicable, as if they are in the ONO Territory where an exclusive license is granted pursuant to **Section 5.1.3 (License upon Exercise of ONO Option** [***]**)** hereof. Without limiting the foregoing, following the Opt-Out Effective Date, (1) the Parties will no longer share applicable costs and profits and losses for the Opt-Out Territory, and ONO shall be solely responsible, at

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ONO's sole cost and expense, for conducting all Development and [***] in the Opt-Out Territory, (2) FATE shall continue to manufacture [***] as set forth herein, and (3) the royalty rates under **Section 6.4.3 (**[***] **Outside Asia)** will apply as if FATE had not exercised its CDCC Option. In the event that FATE elects, pursuant to this **Section 2.4.4(e) (CDCC Option)**, to Opt-Out, and that Competition Law Filings are required, ONO shall provide, on or before the later of clauses (x) and (y) in the definition of Opt-Out Effective Date, a written notice to FATE that ONO has determined in good faith based on consultations with its counsel that the Opt-Out will be subject to Competition Law Filings and that the provisions of **Section 13.13 (Competition Law Filings)** shall apply. FATE shall provide to ONO any information reasonably requested by ONO in its assessment of potential notifications under applicable Competition Laws pursuant to this **Section 2.4.4(e) (CDCC Option)**.

2.5 Development and Commercialization of Collaboration Products.

2.5.1 General. Following the exercise by ONO of the ONO Option with respect to a given Collaboration Candidate, such Collaboration Candidate will be designated as a Collaboration Product (subject **to Section 2.4.1 (Exclusive Option Right)**) and ONO and FATE shall use Commercially Reasonable Efforts to Research, Develop and Commercialize such Collaboration Product in its applicable Territory in the applicable Oncology Field.

2.5.2 Development Plan.

(a) Within [***] days following the Exercise Date with respect to a given Collaboration Candidate, ONO will prepare and provide to the JSC an update to its proposed activities under the Joint Development Plan pursuant to which ONO will conduct Research and Development in the ONO Territory, and FATE will prepare and provide to the JSC (i) an update to its proposed activities under the Joint Development Plan pursuant to which FATE will conduct Research and Development in the FATE Territory, for such Collaboration Product on an Indication-by-Indication basis, as applicable and (ii) a process development and manufacturing plan for all non-clinical and clinical Materials of Collaboration Products for use both by ONO in the ONO Territory and by FATE in the FATE Territory. Each Party will prepare and provide a budget and estimated timeline with respect to its proposed activities under the Joint Development Plan.

(b) ONO and FATE will discuss in good faith through the JSC, and use Commercially Reasonable Efforts to reach an agreement on, the Joint Development Plan, including but not limited to: (i) [***], (ii) and (iii) [***].

(c) During each Calendar Year, each Party shall provide its updates on the Joint Development Plan for the upcoming year covering activities [***] so that the Parties may agree on such update by [***] that year, and each Party shall continue to provide to the other Party, through the JSC, regular updates from time to time to its proposed activities under the Joint Development Plan, as applicable. Each Party will consider in good faith the other Party's comments on such proposed activities and any updates thereto.

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(d) If the JSC fails to agree, after the use of Commercially Reasonable Efforts in an attempt to reach an agreement between the Parties regarding the Joint Development Plan, notwithstanding the provisions of **Article 12 (Dispute Resolution)**, the decision shall be made in accordance with **Section 4.1.8 (Decision-Making; Limitations on JSC)**, provided however, [***].

2.5.3 Global Brand Strategy for Collaboration Products.

(a) **General**. Both Parties generally acknowledge that Commercialization of each Collaboration Product under a common brand name in the world would be beneficial for both Parties to maximize the value of such Collaboration Product. Subject to the exercise by ONO of the ONO Option for a Collaboration Candidate, and in the case of [***] subject to FATE's exercise of the [***] Option during the CDCC Option Period, both Parties shall discuss in good faith with the other and use Commercially Reasonable Efforts to reach an agreement on one of the proposed candidates for brand names, or similar variations or derivatives thereof including translations or transliterations, as the common brand name, as well as packaging and logos, for use in the Commercialization of the applicable Collaboration Product by ONO in the ONO Territory, by FATE in the FATE Territory and by both Parties in the [***] Territory ("**Common Brand Name**") Notwithstanding anything in this **Section 2.5.3**, in the event a Party has reasonable ground, such Party shall not be required to agree or remain in agreement with the common branding strategy for [***] after good faith discussion with other Party. For clarity, in the case where the CDCC Option is not exercised by FATE during the CDCC Option Period or FATE Opts-Out in the [***] Territory in its entirety, this **Section 2.5.3** shall not be applicable to [***].

(b) **Procedures**. Either Party may make a proposal, at the appropriate time before the first BLA filing in the world, of one or more candidates for Common Brand Name. Both Parties shall discuss in good faith to reach agreement on the Common Brand Name from such candidates within [***] days following its receipt of the latter Party's proposal. For [***] for each Major Patent Territory and any other countries outside of Major Patent Territory reasonably requested by ONO, FATE shall conduct a trademark search of the Common Brand Name [***] FATE shall file the application for registration of the trademark rights for the Common Brand Name [***] for each Major Patent Territory, ONO shall conduct a trademark search of the Common Brand Name [***] ONO shall file the application for registration of the trademark rights for the Common Brand Name [***]. If the Parties are unable to agree on a Common Brand Name for which to seek trademark registration and any applicable Regulatory Approvals, then FATE shall select the brand name(s) for the Collaboration Product in the FATE Territory and ONO shall select the brand name(s) for the Collaboration Product in the ONO Territory, provided that the Parties shall jointly determine the brand name(s) for [***] in [***] Territory during the CDCC Term.

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(c) **Intellectual Property**. After registration of Common Brand Name for [***], FATE will grant ONO licenses to such Common Brand Name for [***] for use in the ONO Territory [***]. FATE shall be responsible for the prosecution, registration and maintenance of such trademark rights [***]. After registration of Common Brand Name for [***], ONO shall be responsible for the prosecution, registration and maintenance of such trademark rights in the ONO Territory [***] and ONO shall be responsible for the prosecution, registration and maintenance of such trademark rights in the [***] Territory [***]. ONO will grant FATE licenses to the Common Brand Names for [***] for use in the [***] Territory [***].

2.5.4 Regulatory Filings.

(a) In its applicable Territory where a Party has exclusive rights of Development and Commercialization of a Collaboration Product, [***]

(b) Each Party shall cooperate in good faith with the other Party in regulatory affairs with respect to Collaboration Products in the other Party's Territory [***]. Each Party shall provide the other Party with reasonable advance notice of all substantive meetings with the Regulatory Authorities in its Territory pertaining to each Collaboration Product, or with as much advance notice as practicable under the circumstances. The other Party may, at its own cost, attend such meetings with Regulatory Authorities as an observer upon reasonable advance notice to a Party having such meeting, subject to such Party's prior written consent which shall not be unreasonably withheld, conditioned or delayed and receipt of any required permissions of such Regulatory Authorities.

(c) Each Party shall have the right to [***].

2.5.5 Commercialization Plan. As soon as practicable, but not later than [***] each Party will prepare and provide to the JSC a Commercialization Plan for which such Party will conduct Commercialization in the respective Territory for such Collaboration Product. If FATE has exercised the FATE CDCC Option, a Commercialization Plan for which the Parties will conduct Commercialization in the FATE CDCC Territory will be prepared pursuant to **Section 2.4.4(b) (CDCC Option)**. The applicable Party(ies) will prepare and provide a budget with respect to the activities covered by such Commercialization Plan. The applicable Party(ies) shall continue to provide to the other Party, through the JSC, regular updates from time to time to its Commercialization Plan, as applicable. The applicable Party(ies) will consider in good faith the other Party's comments on such Commercialization Plan and any updates thereto.

2.5.6 Development and Commercialization Information. At each JSC meeting, or as otherwise agreed to between the Parties during the Term, each Party will provide the JSC with information regarding the Development and Commercialization activities performed by such Party, including without limitation [***] in each case relating to each Collaboration Product for which such Party is conducting Development and Commercialization activities in such Party's applicable Territory, as well as [***] Collaboration Product in its Territory. Each Party shall consider in good faith any comments of the other Party with respect to Development and

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Commercialization activities. Such data and information received by the other Party may be used to exercise the licenses and rights granted to such other Party in this Agreement.

2.5.7 Responsibilities for the Conduct of Development, and General Costs, of Collaboration Products. Except as otherwise expressly provided in this Agreement, (a) ONO (with the assistance of FATE as set forth in the Joint Development Plan or Commercialization Plan) shall be primarily responsible for, and shall bear the costs and expenses incurred in connection with the conduct of [***] all Research, Development and Commercialization activities with respect to each Collaboration Product in the applicable ONO Territory during the Term; and (b) FATE (with the assistance of ONO as set forth in the Joint Development Plan or Commercialization Plan) shall be primarily responsible for, and shall bear the costs and expenses incurred in connection with the conduct of [***] all Research, Development and Commercialization activities with respect to each Collaboration Product in the applicable FATE Territory during the Term. Notwithstanding the foregoing, with respect to Collaboration Product 1 and with respect to Collaboration Product 2 during the CDCC Term, ONO and FATE shall discuss in good faith through the JSC, and use Commercially Reasonable Efforts to reach an agreement with respect to, the allocation of responsibilities between the Parties to conduct any studies of Common Development Activities, in a time efficient manner. ONO and FATE shall share the costs and expenses incurred in connection with the conduct of such Common Development Activities, regardless of the Party which conducts such activities, with [*******]. For clarity, the costs and expenses shall include [***]. Any costs and expenses incurred by each Party in each calendar quarter that are to be shared between the Parties pursuant to this **Section 2.5.7** shall be settled on a quarterly basis. A Party shall provide the other Party with the invoice specifying such itemized costs and expenses, and their allocations between the Parties pursuant to this **Section 2.5.7**, promptly following the last day of each Calendar Quarter, which shall be paid by the other Party pursuant to **Section 6.6 (Manner of Payment)**.

2.5.8 Pharmacovigilance. Prior to the first IND in the world by either Party with respect to Collaboration Product 1 and with respect to Collaboration Product 2 during the CDCC Term, the Parties shall negotiate in good faith and enter into a safety data exchange agreement (the "Pharmacovigilance Agreement"), which shall be applicable to such pre-marketing safety information that will be available from Clinical Trials with a Collaboration Product, and shall set forth standard operating procedures governing the collection, investigation, reporting, and exchange of information concerning adverse drug reactions/adverse events sufficient to permit each Party to comply with its Laws. In the event the first BLA for a Collaboration Product is filed by either Party in any country of the world, the Parties shall initiate negotiation with an aim to amend the Pharmacovigilance Agreement as soon as practicable to include post-marketing safety information that will be available from post-marketing experiences with a Collaboration Product to permit each Party to comply with all Laws regarding the management of safety data by providing for the exchange of relevant information in appropriate format. Subject to the foregoing, each Party shall be responsible for monitoring all clinical experiences with respect to a Collaboration Product in the course of its own Research, Development and Commercialization and promotional activities, and filing all required reports with respect thereto, in its respective Territory.

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2.5.9 Investigator Sponsored Clinical Study. Each Party shall have the right to authorize the conduct of Investigator Sponsored Clinical Study(ies) in its Territory and support such Investigator Sponsored Clinical Study(ies) at its own discretion; provided, however, that (a) each Investigator Sponsored Clinical Study in the FATE CDCC Territory during the CDCC Term shall be authorized only with both Parties' written approval of the protocol therefor, and (b) each Party agrees to inform the other Party of each Investigator Sponsored Clinical Study(ies) in a timely manner and to provide the other Party an opportunity to review and comment on the protocol of each Investigator Sponsored Clinical Study(ies) prior to the commencement of such Investigator Sponsored Clinical Study(ies).

ARTICLE 3
MANUFACTURE AND SUPPLY

3.1 Antigen Binding Domain. In the event an ONO Antigen Binding Domain has met the criteria for incorporating the ONO Antigen Binding Domain into Collaboration Candidate 2 pursuant to [*******] ONO shall be solely responsible at its expense for making or having made all requirements of any ONO Antigen Binding Domain during the Research Term. ONO shall manufacture, handle, store and ship all such ONO Antigen Binding Domain in compliance with all Laws, with all Regulatory Filings, and with its applicable internal specifications and quality control procedures during the Research Term.

3.2 Manufacture and Supply of Collaboration Products. As between FATE and ONO, FATE will be exclusively responsible for the conduct of, and shall use Commercially Reasonable Efforts to conduct process development, manufacturing, fill and finish, testing and supply of all pre-clinical, clinical and commercial Materials of Collaboration Products in quantities required for Research, Development and Commercialization by ONO in the ONO Territory and in the final dosage form of unlabeled (other than tracking labelled required for manufacturing and shipping) and unpackaged pharmaceutical preparation, by itself or through Third Party contract manufacturers during the Term. For clarity, FATE shall fulfill the responsibilities mentioned above with respect to [***] in the pre-clinical, clinical and commercial Materials of [***] after the Exercise Date for [***].

3.2.1 Supply Agreement.

(a) Clinical Supply. Within [***] days after the Exercise Date with respect to a Collaboration Candidate, the Parties will negotiate in good faith and enter into, in accordance with the provisions of this **Section 3.2**, a (i) master process development, manufacturing and supply agreement governing the terms and conditions under which FATE will manufacture and supply to ONO the Collaboration Products for preclinical and clinical use ("**Clinical Supply Agreement**"), and (ii) quality agreement for quality control and quality assurance in connection with manufacturing of a Collaboration Product conducted by FATE or its Third Party contract manufacturers, including the cGMP responsibilities of the Parties. During such [***] day period, ONO shall transfer to FATE, in consultation with FATE's process development personnel (or equivalent), all ONO Know-How necessary for FATE to

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manufacture Collaboration Products, including ONO Know-How for the manufacture, handling, storing and shipping of the ONO Antigen Binding Domain.

(b) Commercial Supply. Within [***] days after the commencement of the first Phase III Trial in any country of the world, the Parties will negotiate in good faith and enter into, in accordance with the provisions of this **Section 3.2**, a manufacturing and supply agreement governing the terms and conditions under which FATE will manufacture and supply to ONO the Collaboration Products for commercial use ("**Commercial Supply Agreement**" during the Term, and the Clinical Supply Agreement and Commercial Supply Agreement are collectively referred to as "**Supply Agreements**").

(c) Basic Terms of the Supply Agreements. The Supply Agreements shall provide: (i) that FATE shall manufacture, during the Term, handle, store, and ship all Collaboration Products in compliance with all Laws including all current governmental regulatory requirements concerning cGMP and cGMP requirements concerning documentation, reports and record keeping, with all Regulatory Filings, and with its applicable internal specifications and quality control procedures; (ii) customary definitions and terms and conditions for such agreements, including, without limitation, delivery, technology transfer, quality controls, quality assurance, termination, procedures for non-conformance with specifications and non- compliance with Laws, audit and inspection (including of books of accounts and records by ONO for the determination [***] Collaboration Product or otherwise) and indemnification related to supply of Collaboration Products; (iii) addendums for each Collaboration Product that contain provisions specific to such Collaboration Product, including, without limitation, manufacturing plans, supply chain logistics, and transfer pricing; (iv) that FATE shall allocate quantities of Collaboration Product between FATE and ONO in an equitable manner and not treat itself in favor in the Supply Agreement, including delivery of amounts of any Collaboration Product between FATE and ONO taking into account the market demand and forecast in the Territory of each Party; (v) in the case of the Commercial Supply Agreement, [***].

3.2.2 Transfer Pricing. ONO shall pay to FATE (a) in connection with non- Commercial supply of Collaboration Products, fees equal to [***] and (b) in connection with the Commercial supply of Collaboration Products, fees equal to [***]. For clarity, such manufacturing cost shall include [*******]. For further clarity, [***]

3.3 Third Party Information. Notwithstanding anything to the contrary in this Agreement, ONO acknowledges that it may be required to enter into appropriate confidentiality agreements with or with respect to specific Third Party contract manufacturers or other independent contractors engaged by FATE before FATE can share with ONO information relating to its agreement with such Third Party(ies) or such Third Party(ies)' confidential information as required under this Agreement. In such case, FATE shall notify ONO promptly of such requirement, and the Parties shall cooperate to take such actions as are necessary to enable FATE to comply with such confidentiality requirements of FATE's agreements with any such Third Party(ies).

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ARTICLE 4
GOVERNANCE

4.1 Joint Steering Committee.

4.1.1 Purpose. As soon as practicable after the Effective Date, the Parties shall establish a joint steering committee (the "Joint Steering Committee" or "JSC") to oversee the Collaboration and to make certain decisions regarding the Research, manufacturing, Development, and Commercialization activities of Collaboration Candidates and Collaboration Products during the Term as set forth in this **Section 4.1 (Joint Steering Committee)**.

4.1.2 Responsibilities. Subject to the provisions of Article 4 (Governance), the JSC shall have review and oversight responsibilities (a) prior to the Exercise Date for a Collaboration Candidate, for all Research and Development activities performed by FATE and ONO with respect to such Collaboration Candidate; and (b) following the Exercise Date for a Collaboration Candidate, all Research, Development and Commercialization activities performed by FATE and ONO with respect to such Collaboration Product. The JSC shall provide a forum for sharing advice, progress and results relating to, and for coordinating the conduct of, such activities and shall attempt to facilitate the resolution of any disputes between the Parties, as described in **Section 4.1.8 (Decision-Making; Limitations on JSC)**. The JSC shall also serve as a forum for information exchange with respect to (i) ONO's research and development activities with respect to the ONO Antigen Binding Domain and/or (ii) ONO's and FATE's research and development activities with respect to the Alternative Antigen Binding Domain, provided that subject to [***], such activities regarding above (i) shall not be subject to the oversight or decision making of the JSC.

4.1.3 Information Access. The JSC shall have access to each Party's plans for Development and Commercialization of Collaboration Candidates and Collaboration Products during the Term, including budgets and timelines related thereto, and shall be briefed by the Parties regarding the content, execution, progress and results achieved by the respective Parties thereunder, as well as regarding the ONO Antigen Binding Domain pursuant to **[***]** by ONO and regarding potential Alternative Antigen Binding Domains pursuant to **Section 2.3.5 (Alternative Antigen Binding Domain)** by FATE and ONO. Each Party, through its representatives on the JSC, shall be permitted to provide advice and commentary with respect to the other Party's plans for Development and Commercialization and related budgets and timelines. As provided in **Section 2.5.2 (Development Plan)** and **Section 2.5.5 (Commercialization Plan)**, as applicable, each Party shall take such advice and commentary into good faith consideration.

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4.1.4 Specific Responsibilities Prior to the Exercise of the ONO Option. More specifically, the JSC shall, during the ONO Option Period for a Collaboration Candidate:

(a) [***]

(b) [***]

(c) [***]

(d) [***]

(e) [***]

(f) [***]; and

(g) [***]

4.1.5 Role Following the Exercise of the ONO Option. If ONO exercises the ONO Option with respect to a Collaboration Candidate, the JSC shall continue as a forum for discussion and decision making between the Parties regarding the Research, Development and Commercialization of such Collaboration Product. In such case, the Parties may appoint additional members to the JSC that have specialized knowledge regarding the research, development and commercialization of human therapeutic products, and the JSC shall continue to conduct meetings as provided in **Section 4.1.6 (Membership; Meetings)**. The JSC will thereafter discuss key activities and matters related to the Research, Development and Commercialization of such Collaboration Product including those set forth in **Section 2.5.2 (Development Plan)**, and each Party, through the JSC, will consider any suggestions the other Party may have regarding the Research, Development and Commercialization of such Collaboration Product by such Party in the applicable Territory where such Party has exclusive rights of Research, Development and Commercialization of such Collaboration Product. More specifically, and without limiting the foregoing, the JSC shall, following the Exercise Date for the Collaboration Candidate:

(a) [***]

(b) [***]

(c) [***]

(d) [***]; and

(e) [***]

4.1.6 Membership; Meetings. The JSC shall be composed of three (3) employees each from ONO and FATE (or such other number as the Parties may agree in writing), and shall meet [***], or more often if the JSC so agrees or on ad hoc basis, in person, by teleconference or

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video-teleconference. In-person meetings shall alternate between FATE and ONO locations whenever possible unless otherwise agreed by the Parties. The first such meeting shall be within [***] after the Effective Date. Any member of the JSC may designate a substitute to attend with prior written notice to the other Party. There will be an annually rotating chairperson (the "JSC Chairperson") with the first JSC Chairperson to be designated by FATE. Ad hoc guests, including without limitation FATE's Chief Executive Officer and ONO's Executive Director of Oncology R&D Center, who are bound by obligations of confidentiality and restrictions on use of such Confidential Information that are no less restrictive than the obligations in Article 8 (Confidentiality) may be invited to the JSC meetings. Each Party may replace its JSC members with other of its employees, at any time, upon written notice to the other Party.

4.1.7 Project Management Team.

(a) Composition. Promptly after the establishment of the JSC, the Parties shall establish a project management team (the "**Project Management Team**" or the "**PMT**") consisting of key employees of both Parties performing or involved in the Research and Development activities during the Research Term. PMT shall be responsible for the daily Research and Development activities during the Research Term and be expected to make recommendations on issues therein. One of the Project Team members of each Party shall be appointed as a project manager (a "**Project Manager**") to coordinate its part of the Research and Development activities under Joint Development Plan during the Research Term. Either Party may change its Program Manager upon written notice to the other Party. A Program Manager may be a member of the JSC.

(b) Meetings and Reports. The PMT shall have a meeting [***] via telephone or video conference to discuss the ongoing Research and Development activities during the Research Term. Each Party may invite its other employees having the relevant expertise, knowledge or capability to participate in such conference. Following each meeting, the Project Manager of FATE shall prepare and provide the Project Manager of ONO with a summary report of the meeting. In the event Project Managers of the Parties have discussed any material matter, a Project Manager of each Party shall report the outcome of such discussions to the JSC members of the Party that such Project Manager belongs to.

4.1.8 Decision-Making; Limitations on JSC. Except as otherwise expressly provided herein, any decision of the JSC shall be made by consensus, [***]. The JSC shall have only such powers as are specifically delegated to it in this Agreement, and such powers shall be subject to the terms and conditions set forth herein. Without limiting the generality of the foregoing, the JSC shall have no power to amend, modify or waive any provision of this Agreement. In the event that the JSC is unable to reach a consensus decision on a matter that is within its decision-making authority within [***] after such matter is submitted to it or identified for resolution, then either Party may, by written notice to the other, submit the matter for dispute resolution pursuant to Article 12 (Dispute Resolution). Notwithstanding the foregoing, if the JSC is unable to reach a consensus decision on the following matters, then the matter shall first be submitted to dispute resolution by the Executive Officers under **Section 12.2 (Resolution by Executive Officers)**, and any dispute that is not resolved by such Executive Officers during

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[***] shall not be resolved as set forth in **Section 12.3 (Arbitration)** or litigation, but shall instead be resolved as follows: [***]. Each Party hereby expressly waives its right to seek resolution of such dispute to be resolved in accordance with this **Section 4.1.8** in a court of competent jurisdiction.

4.1.9 Secretary; Minutes. The JSC Chairperson shall designate a secretary of the JSC who will be responsible for calling meetings, preparing and circulating an agenda and presentation materials in advance of each meeting, and preparing and circulating minutes within [***] after each meeting of the JSC setting forth, among other things, a description, in reasonable detail, of the discussions at the meeting and a list of any actions, decisions or determinations approved by the JSC. Such minutes shall be effective only after being approved by both Parties. Definitive minutes of all JSC meetings shall be finalized [*******] after the meeting to which the minutes pertain.

4.1.10 Discontinuation of Committees. The activities to be performed by each Committee shall solely relate to governance and information sharing under this Agreement, and are not intended to be, or involve the delivery of, services. Each Committee shall continue to exist until the first to occur of: (a) the Parties mutually agreeing to disband the Committee; or (b) neither Party being required to provide information or other materials to such Committee. Once a Committee is disbanded, any matters previously delegated to the Committee shall be resolved in accordance with Article 12 (Dispute Resolution) but skipping the initial attempt of resolution through the JSC. In the case the Committee is disbanded in accordance with Section 4.1.10(a), thereafter all information or other materials shall be shared between the Parties through Alliance Liaisons.

4.2 Alliance Liaisons. Promptly after the Effective Date, each Party shall appoint an individual (other than an existing member of the JSC) to act as the alliance liaison for such Party (each, an "Alliance Liaison"). Each Alliance Liaison shall thereafter be permitted to attend meetings of the JSC as a nonvoting observer, subject to obligations of confidentiality and restrictions on use of such Confidential Information that are no less restrictive than the obligations in Article 8 (Confidentiality). The Alliance Liaisons shall be the primary point of contact for the Parties regarding the Collaboration activities contemplated by this Agreement and shall facilitate communication regarding all activities hereunder. The Alliance Liaisons shall lead the communications between the Parties and shall be responsible for following-up on decisions made by the JSC. The name and contact information for such Alliance Liaison, as well as any replacement(s) chosen by FATE or ONO, in their sole discretion, from time to time, shall be promptly provided to the other Party in accordance with **Section 13.2 (Notices)**.

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ARTICLE 5
LICENSES

5.1 Licenses to ONO.

5.1.1 Enabling License to ONO During the ONO Option Period. Subject to the terms and conditions of this Agreement, FATE hereby grants to ONO a non-exclusive, royalty- free, non-transferable (except as provided in **Section 13.4 (Assignment)**) license in the Territory, without the right to grant sublicenses, under FATE Intellectual Property solely as and to the extent necessary to enable ONO to perform ONO's obligation with respect to the Collaboration Candidates in accordance with the Joint Development Plan during the ONO Option Period, including through the use of Third Party contractors in accordance with **Section 2.2.3 (Subcontracting)**, which enabling license for a Collaboration Candidate shall expire at the end of the ONO Option Period with respect to such Collaboration Candidate.

5.1.2 License upon Exercise of ONO Option [***]. Subject to the terms and conditions of this Agreement, upon and as of the Exercise Date for [***] (subject to **Section 2.4.3 (Option Exercise)**), FATE hereby grants to ONO an exclusive (even as to FATE and its Affiliates, except to the extent necessary for FATE or its Affiliates to perform its obligations under the Collaboration), non-transferable (except as provided in **Section 13.4 (Assignment**)), royalty bearing license (or sublicense, as applicable), with the right to grant sublicenses solely in accordance with **Section 5.2 (Sublicensing by ONO)**, under the FATE Intellectual Property, to use, sell, offer to sell, promote, distribute, import, export, label, package and otherwise Develop and/or Commercialize, but not the right to make or have made, [***] in the [***] Territory, during the Term, in the Field, including through the use of Third Party contractors in accordance with **Section 2.2.3 (Subcontracting)**.

5.1.3 License upon Exercise of ONO Option [***]. Subject to the terms and conditions of this Agreement, upon and as of the Exercise Date for [***] (subject to Section 2.4.3 (Option Exercise)), FATE hereby grants to ONO a non-transferable (except as provided in Section 13.4 (Assignment)) license (or sublicense, as applicable) under the FATE Intellectual Property, to use, sell, offer to sell, promote, distribute, import, export, label, package and otherwise Develop and/or Commercialize, but not the right to make or have made, [***] in the [***] Territory, during the Term, in the Field, including through the use of Third Party contractors in accordance with Section 2.2.3 (Subcontracting). Such license shall be: (i) during the CDCC Term and in the [*******] Territory, semi-exclusive [***] and royalty-free (subject to the sharing of profits and losses by the Parties), with the right to grant sublicenses solely in accordance with Section 2.4.4(d) (Sublicensees), or (ii) exclusive (even as to [***] except to the extent necessary for [***] to perform its obligations under the Collaboration) and royalty-bearing, with the right to grant sublicenses solely in accordance with Section 5.2 (Sublicensing by ONO), (A) during the Term and outside the [***] Territory, if [***] exercises the CDCC Option pursuant to Section 2.4.4 (CDCC Option) hereof, (B) during the Term and worldwide, if [***] does not exercise the CDCC Option pursuant to Section 2.4.4 (CDCC Option) hereof, or (C) during any remaining period of the Term and in the Opt-Out Territory, if [***] Opts-Out pursuant to Section 2.4.4(e) (Opt-Out) hereof.

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5.2 Sublicensing by ONO. ONO shall have the right to grant sublicenses to Third Parties at ONO's sole discretion through multiple tiers with respect to the rights licensed to ONO under Sections 5.1.2 (License upon Exercise of ONO Option for [***]) and 5.1.3 (License upon Exercise of ONO Option for [***]) solely in accordance with this Section 5.2 (Sublicensing by ONO); provided that:

5.2.1 such Sublicense shall refer to this Agreement and shall be subordinate to and consistent with the terms and conditions of this Agreement, and shall not limit the ability of ONO (individually or through the activities of its Sublicensee) to fully perform all of its obligations under this Agreement or FATE's rights under this Agreement;

5.2.2 in such Sublicense agreement, the Sublicensee shall agree in writing to be bound to ONO by terms and conditions substantially similar to the corresponding terms and conditions of this Agreement and specifically with respect to [*******]

5.2.3 promptly after execution of the Sublicense agreement, ONO shall provide a summary of such Sublicense agreement to FATE, provided, that in no event shall ONO have any obligation to disclose to FATE the financial terms and conditions of the Sublicense;

5.2.4 ONO shall remain responsible for the performance of this Agreement and the performance of its Sublicensees hereunder, and shall cause such Sublicensee to enable ONO to comply with all applicable terms and conditions of this Agreement;

5.2.5 each Sublicense shall terminate immediately upon the termination of this Agreement (in whole or only with respect to the rights that are subject to such Sublicense) [***] or by FATE pursuant to **Section 11.2 (Termination for Cause), 11.4 (Termination for Insolvency)** or **11.5 (Termination for Patent Challenge)**, or by ONO pursuant to **Section 11.2 (Termination for Cause)**, **11.4 (Termination for Insolvency)** or **11.5 (Termination for Patent Challenge)** if ONO makes the election under [***] on a Collaboration Product-by- Collaboration Product basis; and

5.2.6 If a Sublicensee of ONO does not agree to any or all of Section 5.2.2, then ONO shall not grant to such Sublicensee the applicable reciprocal rights [***]

5.2.7 Notwithstanding anything herein to the contrary, to the extent that (a) [***] or (b) [***].

5.3 Licenses to FATE.

5.3.1 Enabling License to FATE. Subject to the terms and conditions of this Agreement, (i) ONO hereby grants to FATE a non-exclusive, royalty-free, non-transferable (except as provided in Section 13.4 (Assignment)) license in the Territory, without the right to grant sublicenses, under ONO Intellectual Property solely as and to the extent necessary to enable FATE to perform FATE's obligations with respect to the Collaboration Candidates in

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accordance with the Joint Development Plan during the Research Term, including through the use of Third Party contractors in accordance with Section 2.2.3 (Subcontracting), (including, for the avoidance of doubt, to manufacture Collaboration Candidates pursuant to Article 3 (Manufacture and Supply)), which enabling license for a Collaboration Candidate shall expire at the end of the Research Term with respect to such Collaboration Candidate; and (ii) upon and as of the Exercise Date for a Collaboration Candidate (subject to Section 2.4.3 (Option Exercise)), ONO hereby grants to FATE a non-exclusive, royalty-free, non-transferable (except as provided in Section 13.4 (Assignment)) license in the Territory, without the right to grant sublicenses, under ONO Intellectual Property solely as and to the extent necessary to enable FATE to perform FATE's obligations with respect to the Collaboration Products in accordance with the Agreement, including through the use of Third Party contractors in accordance with Section 2.2.3 (Subcontracting), (including, for the avoidance of doubt, to manufacture the Collaboration Product pursuant to Article 3 (Manufacture and Supply)).

5.3.2 License for Collaboration Candidates and Products.

(a) Subject to the terms and conditions of this Agreement, ONO hereby grants to FATE (i) an exclusive (even as to ONO and its Affiliates, except to the extent necessary for ONO or its Affiliates to perform its obligations under the Collaboration), non-transferable (except as provided in **Section 13.4 (Assignment)**), fully-paid and royalty-free license (or sublicense, as applicable), with the right to grant sublicenses solely in accordance with **Section 5.4 (License or Sublicense** [***] **in the FATE Territory)**, under the ONO Intellectual Property, to make, have made, use, sell, offer to sell, promote, distribute, import, export, label, package and otherwise Develop and/or Commercialize [***] (which is not the FATE Cell Therapy) in the FATE Territory, including through the use of Third Party contractors in accordance with **Section 2.2.3**, during the Term, in the Field, and (ii) a non-exclusive, non-transferable (except as provided in **Section 13.4 (Assignment)**), royalty-bearing license (or sublicense, as applicable), with the right to grant sublicenses under the ONO Intellectual Property, to make, have made, use, sell, offer to sell, promote, distribute, import, export, label, package and otherwise Develop and/or Commercialize the applicable FATE Cell Therapy in any country of the world on country-by-country basis where this Agreement is terminated (x) [***] or (y) by FATE pursuant to either **Section 11.2 (Termination for Cause)**, **Section 11.4 (Termination for Insolvency)**, or **Section 11.5 (Termination for Patent Challenge)**, including through the use of Third Party contractors in accordance with **Section 2.2.3 (Subcontracting)**, in the Field pursuant to [***] in the event that this Agreement is terminated [***] or by FATE pursuant to either **Section 11.2** (**Termination for Cause**), **Section 11.4** (**Termination for Insolvency**), or **Section 11.5** (**Termination for Patent Challenge)**.

(b) [***]

5.3.3 License upon Exercise of CDCC Option [***]. Subject to the terms and conditions of this Agreement, upon and as of FATE's exercise of the CDCC Option pursuant to Section 2.4.4 (CDCC Option) for [***] and during the CDCC Term, ONO hereby grants to FATE a semi-exclusive [***], non-transferable (except as provided in Section 13.4 (Assignment)), royalty-free license (or sublicense, as applicable) with the right to grant

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sublicenses solely in accordance with Section 2.4.4(d) (Sublicenses), under ONO Intellectual Property, to make, have made, use, sell, offer to sell, promote, distribute, import, export, label, package and otherwise Develop and Commercialize [***] CDCC Territory, in the Field, including through the use of Third Party contractors in accordance with Section 2.2.3 (Subcontracting).

5.4 License or Sublicense [***] in the FATE Territory. FATE shall have the right to grant one or more Sublicense through multiple tiers for the Development, manufacturing and Commercialization of [***] in the [***] Territory, at FATE's sole discretion, with respect to the FATE Intellectual Property and rights licensed to FATE by ONO under Section 5.3 (Licenses to FATE), subject to the following:

5.4.1 If FATE enters into a Sublicense agreement to develop or commercialize [***] in the [***] Territory, then the JSC's involvement in the Research, Development, and Commercialization of [***] in the territory of such Sublicense agreement will be subject to and subordinate to such Sublicense agreement, provided that (a) both FATE and ONO shall remain obligated to provide safety information pursuant to any safety or Pharmacovigilance Agreement entered into by the Parties with respect to [***] in each Party's respective Territory, regardless of any Sublicense agreement; and (b) upon ONO's request, FATE shall use Commercially Reasonable Efforts to arrange and establish a committee constituted by representatives of FATE, such Sublicensee and ONO to oversee and monitor Development and/or Commercialization of [***] on global basis.

5.4.2 With respect to the [***] shall obligate any of its Sublicensees to [*******].

5.4.3 FATE shall not grant any Sublicense under FATE Intellectual Property that would materially conflict with this Agreement. FATE shall notify ONO in writing whether a Sublicensee has agreed to the terms of this Section 5.4 promptly after execution of the applicable Sublicense agreement.

5.4.4 If a Sublicensee of FATE does not agree to any or all of this Section 5.4, then FATE shall not grant to such Sublicensee the applicable reciprocal rights [***].

5.4.5 Notwithstanding anything herein to the contrary, to the extent that (a) [***] or (b) [***].

5.5 [***]

5.5.1 [***]

5.5.2 [***]

5.5.3 [***]

5.6 Use of Names; Logo; Patent Marking. The packaging for each Collaboration Product Commercialized by ONO under this Agreement shall be marked (to the extent required by

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Laws): (a) with a notice that such Collaboration Product is sold under a license from FATE and (b) with applicable patent notices relating to the FATE Patents in such a manner as may be permitted or required by Laws. To the extent permitted under Laws, the packaging and labeling for such Collaboration Product will bear both the ONO name and logo and the FATE name and FATE logo as set forth on Exhibit 5.6 ("Fate Logo"), and such names and logos will be presented with substantially equivalent prominence in any product presentations, exhibit booths, conferences, or promotion materials or activities. FATE will be responsible for registering and policing the FATE Logo in order to enable ONO to appropriately mark any packaging with the FATE Logo, to the extent permitted or required by Laws. Except as set forth in this Section 5.6 (Use of Names; Logo; Patent Marking) and Section 2.5.3 (Global Brand Strategy for Collaboration Products), no right or license, express or implied, is granted to ONO to use any trademark, trade name, trade dress, or service mark Controlled by FATE or any of its Affiliates. Likewise, no right or license, express or implied, is granted to FATE to use any trademark, trade name, trade dress or service mark Controlled by ONO or any of its Affiliates except as provided in Section 2.5.3 (Global Brand Strategy for Collaboration Products).

5.7 Third Party In-Licenses. All licenses granted under this Article 5 (Licenses), to the extent they constitute sublicenses under this Article 5 (Licenses), are subject to the relevant terms and conditions of the granting Party's agreement with the Third Party that owns or otherwise Controls such intellectual property rights, subject further to Sections 7.5.6 (Upstream Limitations), 7.10.1 (Existing Agreements) and 9.2 (Additional Representations and Warranties of FATE). Any exclusive licenses that are granted under this Article 5 (Licenses) that constitute sublicenses are exclusive only to the extent of the exclusive nature of the license granted to the granting Party.

5.8 No Implied Licenses; Retained Rights; Government Rights.

5.8.1 No Implied Licenses, Retained Rights. No license or other right is or shall be created or granted hereunder by implication, estoppel, or otherwise. All licenses and rights are or shall be granted only as expressly provided in this Agreement. All rights not expressly granted by either Party under this Agreement are reserved by such Party and may not be used by the other Party for any purpose.

5.8.2 Government Rights. This Agreement is expressly subject to the reservation on behalf of the U.S. government under 35 U.S.C. § 200–212 and regulations promulgated thereunder. ONO shall take all action necessary on its part to enable FATE to satisfy its obligation to substantially manufacture in the United States to the extent required under 35 U.S.C. § 200–212 and regulations promulgated thereunder.

5.9 [***]

5.9.1 [***]

[***]

[***]

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5.9.2 [***]

[***]

[***]

5.10 [***]

ARTICLE 6
FINANCIAL TERMS

6.1 Upfront Option Fee. In consideration for the rights granted to ONO under this Agreement, ONO shall pay to FATE a one-time-only, non-refundable, non-creditable payment of Ten Million Dollars ($10,000,000) within [***] Business Days after the Effective Date in accordance with Section 6.6 (Manner of Payment).

6.2 Research and Development Costs.

6.2.1 ONO Research and Development. ONO shall bear, and shall be fully and individually responsible for, all costs related to research and development of the [***]. No such costs will be included in any budgets under this Agreement or Annual R&D Fees below.

6.2.2 FATE Research and Development. As consideration for FATE's conduct of the Joint Development Plan, ONO shall pay to FATE, in accordance with Section 6.6 (Manner of Payment), annual research and development fees ("Annual R&D Fees") [***]. As of the Effective Date, the Parties agree that such annual budget for the Joint Development Plan shall be equal to the amounts as set forth below, subject to any increase for an Unexpected Cost Increase as set forth in Section 2.3.7 (Additional Development). [***], ONO will pay a prorated amount for such Payment Quarter, calculated by multiplying the quarterly amount based on the Annual R&D Fees by a fraction equal to the total number of days in such Payment Quarter divided by ninety (90) days. [***]

Research Term Year	Estimated Annual Collaboration Budget	Annual R&D Fees
1	[***]	$5,000,000
[***]	[***]	[***]
[***]	[***]	[***]
[***]	[***]	[***]

6.3 Milestone Payments. In consideration for the rights and licenses granted to ONO under this Agreement, ONO shall make milestone payments, in accordance with Section 6.6 (Manner of Payment), to FATE described in Sections 6.3.1 [***] through 6.3.5 (Sales Milestones). The milestone payments, including [***] AABD Research Milestone Fee and Option Exercise

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Payments set forth in this Section 6.3 shall all be non-refundable and non-creditable and, except as expressly set forth in Sections 6.3.4 (Development Milestones) and 6.3.5 (Sales Milestones) for the milestone payments applying to each Collaboration Product [***].

6.3.1 [***]. ONO shall pay to FATE [***] Dollars ($[***]) upon delivery by ONO to FATE of the ONO Antigen Binding Domain ("[***]").

6.3.2 AABD Research Milestone Fee. In the case ONO has not delivered to FATE the ONO Antigen Binding Domain [***] (or the end of any extended period that is mutually agreed by the Parties) and thereafter [***] ONO shall pay to FATE [***] Dollars ($[***])[***], in which ONO will be granted the license for [***] or (b) [***] Dollars ([***]) [***] in which ONO will be granted the license for [***]. For clarity, in such case ONO shall not be required to pay the [***] pursuant to Section 6.3.1 [***] above.

6.3.3 Option Exercise Payments. Upon exercise of an ONO Option, ONO shall pay FATE the option exercise payments described below (the "Option Exercise Payments").

(a) [***]. ONO shall pay to **FATE [***] Dollars ([***])** upon the Exercise Date for [***] for further Research, Development and Commercialization of [***].

(b) [***]. If ONO exercises the ONO Option for [***] and (i) FATE does not exercise the [***] with respect to [***] then ONO shall pay to FATE **[***] Dollars ([***])** upon the earlier of (A) expiration of the CDCC Option Period and (B) the receipt by ONO of the notice from FATE with respect to such non-exercise of the CDCC Option, but in no case earlier than the Exercise Date; or (ii) FATE exercises the CDCC Option with respect to [***] then ONO shall pay to FATE **[***] Dollars ($[***])** upon the receipt by ONO of the notice from FATE with respect to exercising such CDCC Option for [***] but in no case earlier than the Exercise Date; provided, however, that in the case [***], ONO shall pay to FATE **[***] Dollars ([***])** upon the Exercise Date of the ONO Option, instead of paying [***] Dollars ($[***]) or [***] ($[***]), as applicable, pursuant to this **Section 6.3.3(b)**.

6.3.4 Development Milestones. ONO shall make the milestone payments set forth below to FATE in accordance with Section 6.6 (Manner of Payment) upon the achievement of each of the corresponding milestone events for each Indication set forth in the relevant table (the "Development Milestone Payments"). ONO shall notify FATE within [***] Business Days after the achievement of each milestone event in this Section 6.3.4 by or on behalf of ONO or its Affiliates or Sublicensees. Such payments shall be due to FATE for each Collaboration Product and Indication within the description in the table. If a subsequent milestone event is achieved with respect to a particular Collaboration Product before a prior milestone event for such Collaboration Product, then all such prior milestone events for the applicable Collaboration Product shall be deemed achieved upon achievement of the subsequent milestone event and shall become payable (if not previously paid). As an example, a milestone event related to [***] shall be considered achieved upon [***]. For further clarity, the development milestone events for [***] as applicable, will be deemed achieved by the [***] as applicable.

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

(a) [***] in ONO Territory.

Development Milestone Event	Milestone Payment		
	[***]	[***]	[***]
[***]	[***]		
[***]	[***]		
[***]	[***]		
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	**[***]**	[***]	[***]
[***]			[***]

(b) [***] in the United States.

Development Milestone Event *	Milestone Payment		
	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]			[***]

* [***]

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(c) [***] in Europe.

Development Milestone Event *	Milestone Payment		
	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	**[***]**	**[***]**	**[***]**
[***]			**[***]**

* [***]

(d) [***] in Asia.

Development Milestone Event	Milestone Payment		
	[***]	[***]	[***]
[***]	[***]		
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	**[***]**	**[***]**	**[***]**
[***]			**[***]**

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6.3.5 Sales Milestones. ONO shall pay to FATE the applicable Annual Net Sales threshold milestone payments set forth below in accordance with Section 6.6 (Manner of Payment) the first time that the Annual Net Sales by ONO, and its Affiliates and its Sublicensees, of the described Collaboration Products in the ONO Territory, or specified portion of the FATE CDCC Territory, reach or exceed the relevant amounts set forth in the table below (the "Sales Milestone Payments"). ONO shall notify FATE within [***] days after the end of the Calendar Year in which the applicable milestone event(s) is(are) achieved. For the avoidance of doubt, if more than one Annual Net Sales threshold is first achieved by a Collaboration Product in a particular Calendar Year, then all applicable milestone payments will be payable.

(a) [***] in the ONO Territory.

Sales Milestone Event	Milestone Payment
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	**[***]**

(b) [***] in the United States.

Sales Milestone Event *	Milestone Payment
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	**[***]**

* [***]

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(c) [***] in Europe.

Sales Milestone Event *	Milestone Payment
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	**[***]**

* [***]

(d) [***] in Asia.

Sales Milestone Event	Milestone Payment
[***] *	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]
[***]	**[***]**

6.4 Royalty Payments. As further consideration for the rights and licenses granted to ONO under this Agreement, subject to Sections 6.4.4 (Necessary License), 6.4.5 (Royalty Deduction), [***] and 6.5 (Payments if CDCC Option is Exercised), ONO will pay FATE tiered royalties on the Annual Net Sales by ONO, its Affiliates and its Sublicensees of all Collaboration Products in the ONO Territory (other than the FATE CDCC Territory during the CDCC Term) as described in the tables below, on a country-by-country basis and on a Collaboration Product–by–Collaboration Product basis, for the applicable country in the specified ONO Territory, at the applicable royalty rates set forth in the tables below. Only one royalty payment shall be due with respect to the same sales unit of the Collaboration Product.

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6.4.1 [***] in the ONO Territory.

Aggregate Annual Net Sales in the ONO Territory*	Royalty
On the portion of Annual Net Sales up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***] and up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***] and up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***]	[***]

* [***]

6.4.2 [***] in Asia.

Aggregate Annual Net Sales in Asia*	Royalty
On the portion of Annual Net Sales up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***] and up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***] and up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***]	[***]

* [***]

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6.4.3 [***] Outside Asia. If FATE does not exercise the CDCC Option under Section 2.4.4 (CDCC Option), or if there is an Opt-Out for the U.S. and/or Europe following FATE's exercise of the CDCC Option, then the royalty rates below shall apply. During the CDCC Term for the U.S., there will be no royalties due on Annual Net Sales of [***] in the United States, and during the CDCC Term for Europe, there will be no royalties due on Annual Net Sales of [***] in Europe, and instead, in each case, the Parties will share profits and losses in the applicable FATE CDCC Territory pursuant to Section 6.5 (Payments if CDCC Option is Exercised) hereof.

Aggregate Annual Net Sales in the U.S.*	**Royalty**
On the portion of Annual Net Sales up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***] and up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***] and up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***]	[***]

* [***]

Aggregate Annual Net Sales in Europe*	**Royalty**
On the portion of Annual Net Sales up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***] and up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***] and up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***]	[***]

* [***]

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Aggregate Annual Net Sales in the Rest of the ONO Territory outside of U.S., Europe and Asia *	Royalty
On the portion of Annual Net Sales up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***] and up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***] and up to (and including) [***]	[***]
On the portion of Annual Net Sales exceeding [***]	[***]

* [***]

6.4.4 Necessary License. ONO shall have the right to deduct, on a country-by-country basis and on a Collaboration Product–by–Collaboration Product basis, from the royalty payment due to FATE pursuant to Sections 6.4.1 ([***] in the ONO Territory), 6.4.2 ([***] in Asia) and 6.4.3 ([***] Outside Asia) with respect to Net Sales of a Collaboration Product in the ONO Territory (other than the FATE CDCC Territory during the CDCC Term) during any Calendar Quarter, [***] percent ([***]) of the royalties paid by ONO pursuant to a Necessary License agreement on account of the sale of such Collaboration Product in such country during such Calendar Quarter, [***].

6.4.5 Royalty Deduction. All royalties payable under this Section 6.4 (Royalty Payments) shall be payable on a Calendar Quarterly basis during the Royalty Term for such Collaboration Product in each country in the relevant Territory (or portion thereof). [***]

6.4.6 [***]

6.4.7 Royalty Payment Reports. After the First Commercial Sale of a Collaboration Product and for the Royalty Term for such Collaboration Product, ONO shall furnish to FATE a written report, within [***] days after the end of each Calendar Quarter (or portion thereof if this Agreement terminates during a Calendar Quarter), showing the amount of royalty due for such Collaboration Product for such Calendar Quarter (or portion thereof). Royalty payments for each Calendar Quarter shall be due at the same time as such written report for the Calendar Quarter. With each quarterly payment, ONO shall deliver to FATE a full and accurate accounting to include at least the following information: (a) [***] (b) [***] (c) [***] (d) [***] and (e) [***]. ONO shall calculate Net Sales by assigning each individual deduction permitted under Section 1.74 (Net Sales) to one of the categories of permitted deductions set forth in Section 1.74(a) through (g).

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6.5 Payments if CDCC Option is Exercised. If FATE exercises the CDCC Option, then during the CDCC Term the Parties shall share profits and losses [*******] in the [***] Territory according to the terms agreed to by the Parties pursuant to Section 2.4.4 (CDCC Option).

6.6 Manner of Payment. All payments to be made by a Party hereunder shall be made in Dollars by wire transfer of immediately available funds to the bank account as shall be designated by the other Party [***] and shall be made within the specified days (or Business Days as the case maybe) set forth in the applicable Section hereof, or if such timing is not specified, within [***] days, subject to the provision set forth in Section 6.10 (Taxes), in each case following the receipt by a Party of the relevant taxation documents, if applicable, and an invoice referring to this Agreement and the Section number relating to such payment and specifying the invoice date, the amount payable by such Party, the triggering event (in case of milestone payments) and such designated bank account. Late payments shall bear interest at the rate provided for in Section 6.11 (Interest Due).

6.7 Records Retention. Commencing with the First Commercial Sale of a Collaboration Product by ONO, ONO shall keep, and shall cause each of its respective Affiliates, and Sublicensees, if any, to keep, full and accurate books of accounting in accordance with IFRS or GAAP, as applicable, containing all particulars that may be necessary for the purpose of calculating all royalties and sales milestones payable to FATE under this Article 6 (Financial Terms), for a period of [***]after the Calendar Year in which such sales occurred, in sufficient detail to permit FATE to confirm the accuracy of royalties paid hereunder.

6.8 Audits. Commencing with the First Commercial Sale of a Collaboration Product, during the Term and for a period of [***] thereafter, [***] ONO shall permit an independent, certified public accountant of nationally recognized standing appointed by FATE, and reasonably acceptable to ONO, during the business hours of ONO upon [***] to examine such records which ONO is obligated to retain pursuant to Section 6.7 (Records Retention) as may be necessary for the sole purpose of verifying the calculation and reporting of Annual Net Sales and the correctness of any royalty payment and sales milestone payment made under this Agreement. FATE shall cause such an independent, certified public accountant to enter into an appropriate confidentiality and non-use agreement with ONO setting forth the customary terms and conditions of such agreement and provisions relating to subsections (a) and (b) as well as the following sentences below. Results of any such examination shall be made available to both ONO and FATE. The independent, certified public accountant shall disclose to (a) FATE only the royalty amounts which the independent auditor believes to be due and payable hereunder to FATE, and shall disclose no other information revealed in such audit, and (b) ONO such amount and grounds for the discrepancy from the amount paid and the amount due specifying the records that such discrepancy occurs as an evidence. Any and all records examined by such independent accountant shall be deemed ONO's Confidential Information and trade secret which may not be disclosed by said independent, certified public accountant to FATE or any Third Party except the information permitted to be disclosed to FATE pursuant to subsection (a) above. If, as a result of any inspection of the books and records of ONO, it is shown that ONO's payments under this Agreement were less than the amount which should have been paid, then ONO shall make all payments required to be made to eliminate any

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discrepancy revealed by said inspection [***]. If the audit reveals any overpayment, the amount overpaid by ONO [***]. For clarity, FATE shall have no rights to audit the records to which ONO's obligation to retain pursuant to Section 6.7 (Records Retention) has expired, or that have once been audited pursuant to this Section 6.8. The royalty payment of ONO on the Annual Net Sales based on such records for which FATE's audit rights have expired under this Agreement shall be fixed, and in no event shall a claim by FATE relating to such royalty payment be disputable and deemed a Dispute or any other dispute under this Agreement.

6.9 Currency Exchange. All payments under this Agreement shall be payable, in full, in Dollars, regardless of the country(ies) in which sales are made. For the purposes of computing Net Sales of Collaboration Products Commercialized by a Party that are sold in a currency other than Dollars, such currency shall be converted into Dollars [***].

6.10 Taxes

6.10.1 Where any sum due to be paid to any Party hereunder is subject to any withholding or similar tax, the Parties will use their Commercially Reasonable Efforts to do all such acts and things and to sign all such documents as will enable them to take advantage of any applicable double taxation agreement or treaty or other exemption from such tax. In the event there is no applicable double taxation agreement or treaty or other exemption, or if an applicable double taxation agreement or treaty reduces but does not eliminate such withholding or similar tax or is not available, the payor will remit such withholding or similar tax to the appropriate government authority, deduct the amount paid from the amount due to the payee and secure and send to the payee the best available evidence of the payment of such withholding or similar tax. In the event that a government authority retroactively determines that a payment made by a Party pursuant to this Agreement should have been subject to withholding or similar (or to additional withholding or similar) taxes, and such Party remits such withholding or similar taxes to the government authority, including any interest and penalties that may be imposed thereon (together with the tax paid, the "**Withholding Amount**"), such Party will have the right: (a) to offset the Withholding Amount against future payment obligations of such Party under this Agreement; or (b) to invoice the other Party for the Withholding Amount (which will be payable by the other Party within sixty (60) days of its receipt of such invoice). The Parties shall cooperate in accordance with applicable Laws to minimize taxes in connection with this Agreement.

6.10.2 Notwithstanding the foregoing in **Section 6.10.1**, [***].

6.10.3 Each Party agrees to cooperate with the other Party in claiming exemptions or reductions from such deductions or withholdings to the fullest extent permitted by any Law, agreement or treaty from time to time in effect, including the submission of Form 3 and Form 17 (application form for the relief from Japanese Income Tax on Royalties) duly signed by FATE and Certificate of Residence of FATE issued and signed by the tax authority in the United States, and a properly completed and duly executed IRS Form W-8 from ONO, and any other document that may be required for the similar purpose from time to time during the Term, for such claim prior to the wire transfer of such payments by a Party. The Parties acknowledge that such exemptions or reductions may be applicable only prior to the actual transfer of the payment.

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6.10.4 All payments are exclusive of value added taxes, sales taxes, consumption taxes and other similar taxes (the "**Indirect Taxes**"). If any Indirect Taxes are chargeable in respect of any payments, the payor Party will pay such Indirect Taxes at the applicable rate in respect of such payments following receipt, where applicable, of an Indirect Taxes invoice in the appropriate form issued by the payee Party in respect of those payments, and the amount due to the payee Party shall be paid without offset. The payee Party will issue invoices for all amounts payable under this Agreement consistent with Indirect Tax requirements and irrespective of whether the sums may be netted for settlement purposes. If either Party, or a governmental authority, determines that a payment made by a Party pursuant to this Agreement should have been subject to Indirect Taxes, and the payee Party remits such Indirect Taxes, the payor Party shall indemnify the payee Party with respect to, and shall promptly reimburse the payee Party for, such Indirect Taxes (including any interest and penalties that may be imposed thereon). If the Indirect Taxes originally paid or otherwise borne by the payor Party are in whole or in part subsequently determined not to have been chargeable, then at the request of the payor Party, all commercially reasonable steps will be taken by the payee Party to receive a refund of these undue Indirect Taxes from the applicable governmental authority or other fiscal authority and any amount of undue Indirect Taxes repaid by such authority to the payee Party (net of the payee Party's reasonable out-of-pocket costs and expenses associated with such refund) will be transferred to the payor Party within [***].

6.11 Interest Due. Without limiting any other rights or remedies available to the other Party, a paying Party shall pay the other Party interest on any payments that are not paid on or before the date such payments are due under this Agreement at a rate of [*******]per month or the maximum applicable legal rate, if less, calculated on the total number of days payment is delinquent.

ARTICLE 7
INTELLECTUAL PROPERTY

7.1 Ownership of Inventions.

7.1.1 Inventorship. Inventorship of inventions conceived, developed or reduced to practice in the course of activities performed under or contemplated by this Agreement ("Inventions") shall be determined by application of U.S. patent Laws pertaining to inventorship. In no event shall either Party be liable for compensation to any inventors for Inventions conceived, developed or reduced to practice by director(s), officer(s) or employee(s) of the other Party regardless of which Party has ownership rights to such Inventions pursuant to this Section 7.1; provided, however, [***] regardless of which Party has ownership rights to such Inventions pursuant to this Section 7.1.

7.1.2 Ownership of Inventions.

(a) General Rules of Ownership. Subject to **Section 7.1.2(b) (Ownership by Subject Matter)**, all Inventions conceived, developed or reduced to practice solely by or on behalf of ONO shall be solely owned by ONO, all Inventions conceived, developed or reduced to practice solely by or on behalf of FATE shall be solely owned by FATE, and all Inventions

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conceived, developed or reduced to practice jointly by or on behalf of ONO and FATE shall be jointly owned by ONO and FATE. In this case, each Party owns an equal and undivided interest in such jointly-owned Inventions, with the right to practice, license and exploit such Inventions without the duty or accounting or seeking consent from the other Party, subject to any exclusive licenses granted herein and in a way not inconsistent with this Agreement.

(b) Ownership by Subject Matter. Notwithstanding **Section 7.1.2(a) (General Rules of Ownership)**, the ownership of the following Inventions shall be as follows, regardless of the inventorship of such Inventions between the Parties:

(i) FATE shall solely own all Inventions directed to: (A) [***] (B) [***] and (C) [***].

(ii) ONO shall solely own all Inventions directed to [***].

(iii) ONO and FATE shall jointly own all Inventions directed to: [***]. Each Party shall own an equal and undivided interest in such jointly-owned Inventions, with the right to practice, license and exploit such Inventions without the duty of accounting or seeking consent from the other Party, subject to any exclusive licenses granted herein and in a way not inconsistent with this Agreement.

(c) All Inventions jointly owned by ONO and FATE in accordance with **Sections 7.1.2(a)** or **(b)** above shall be deemed "**Joint Inventions**". All Inventions solely owned by FATE, as well as FATE's interest in all of the Joint Inventions, shall be included in the FATE Know-How, and all Patents claiming such Inventions shall be included in FATE Patents. All Inventions solely owned by ONO, as well as ONO's interest in all of the Joint Inventions, shall be included in the ONO Know-How, and all Patents claiming such Inventions shall be included in ONO Patents.

(d) Notwithstanding the second sentence of each of **Sections 7.1.2(a)** and **7.1.2(b)(iii)**, in the case that, due to the patent strategy agreed to between the Parties, [***] provided, however, that each Party shall have the right to practice and exploit such Joint Invention and Joint Patent solely in accordance with this Agreement. Notwithstanding anything in this Agreement to the contrary, each Party's rights with respect to prosecution, enforcement, and defense for infringement of such Joint Patent shall be discussed in good faith by the patent subcommittee and determined by the Parties and, as applicable, [***].

7.1.3 Disclosure. Each Party shall promptly disclose to the other Party in writing, and shall cause its Affiliates, to so disclose, the conception, development or reduction to practice of any Invention during the Term of this Agreement. Each Party shall cause its Affiliates, employees, directors, and officers to so assign to such Party, such person's or entity's right, title and interest in and to any such Inventions, and intellectual property rights therein, as is necessary to enable such Party to fully effect the ownership of such Inventions, and intellectual property rights therein, as provided for in Section 7.1.2 (Ownership of Inventions). Each Party shall include provisions in its relevant agreements with Third Party contractors performing obligations

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on its behalf pursuant to this Agreement, that effect the intent of this Article 7 (Intellectual Property). Furthermore, each Party shall use Commercially Reasonable Efforts to include provisions in its relevant agreements with Third Party independent researchers or Sublicensees performing obligations on its behalf pursuant to this Agreement, that effect the intent of this Article 7 (Intellectual Property); provided, however, that [*******]. Each Party shall, and shall cause its Affiliates, employees, directors, and officers, and to the extent applicable its Sublicensees, Third Party independent researchers and Third Party contractors, in each case to cooperate with such other Party and take all reasonable additional actions and execute such agreements, instruments and documents as may be reasonably required to perfect such other Party's right, title and interest in and to Inventions, and intellectual property rights therein, as set forth in this Section 7.1 (Ownership of Inventions).

7.2 Prosecution of FATE Patents.

7.2.1 Filing, Prosecution, and Maintenance of FATE Patents. FATE shall, at its sole costs and expense, be responsible, using patent counsel selected by FATE (for clarity, all references in this Article 7 (Intellectual Property) to "patent counsel" shall include inside patent counsel as well as outside patent counsel), for the preparation, filing, prosecution (including without limitation any interferences, reissue proceedings and reexaminations) and maintenance of FATE Patents solely owned by FATE, including, without limitation, those claiming Inventions to be owned by FATE under this Agreement. For any FATE Patent for which ONO has been granted a license under Section 5.1.2 (License upon Exercise of ONO Option [***]) or Section 5.1.3 (License upon Exercise of ONO Option [***]. FATE shall provide to ONO copies of any filings and correspondence of such FATE Patents solely owned by FATE promptly upon their being filed or received in the ONO Territory and shall promptly notify ONO in writing of any developments in filing, prosecution and maintenance in the Territory with respect to any FATE Patents in-licensed by FATE. The Parties acknowledge and agree that FATE has the final decision making authority with respect to any dispute on such preparation, filing, prosecution and maintenance of such FATE Patents and any inadvertent failure of FATE to comply with this Section 7.2.1 with respect to thereto, [***].

7.2.2 Opt Out by FATE. For any FATE Patent for which ONO has been granted a license under Section 5.1.2 (License upon Exercise of ONO Option for [***]) or Section 5.1.3 (License upon Exercise of ONO Option for [***] FATE shall notify ONO of such decisions at least [***] days prior to any pending lapse or abandonment of the applicable FATE Patent. ONO shall notify FATE promptly whether or not ONO wishes FATE to file, prosecute or maintain such FATE Patent or such new patent application. [***]. In these events, FATE shall notify ONO if it elects to continue to prosecute or maintain or to file the applicable FATE Patent within [***] days from its receipt of ONO' notice. If FATE does not so elect, then (a) ONO may (but is not obliged to) prepare, file, prosecute, and maintain, as applicable, such FATE Patent or such new patent application, [***] (b) FATE shall fully cooperate with ONO in providing ONO with information in its possession necessary for such preparation, filing, prosecution and maintenance, and (c) FATE shall sign, or use Commercially Reasonable Efforts to have signed, all legal documents necessary for ONO to file and prosecute such patent

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applications or to obtain or maintain such Patents. [***]. In the case of each FATE Patent filed, prosecuted and maintained by ONO, such FATE Patent shall cease being a FATE Patent for the purpose of determining the royalty rate and Royalty Term with respect to the relevant Collaboration Product pursuant to Section 6.4 (Royalty Payment) hereof in such country of filing, prosecution and maintenance. With respect to any FATE Patent in-licensed by FATE and for which ONO has been granted a sublicense under Section 5.1.2 (License upon Exercise of [***]) or Section 5.1.3 (License upon Exercise of [***] provided, however, that if FATE desires to abandon such FATE Patent, FATE shall promptly notify ONO of such desire and both Parties shall discuss the implications of such abandonment in good faith.

7.3 Prosecution of ONO Patents

7.3.1 Filing, Prosecution, and Maintenance of ONO Patents. ONO shall, at its sole costs and expenses, be responsible, using patent counsel selected by ONO, for the preparation, filing, prosecution (including without limitation any interferences, reissue proceedings and reexaminations) and maintenance of ONO Patents solely owned by ONO. ONO shall reasonably consult with FATE, and shall take any FATE comments into good faith consideration, with respect to the preparation, filing, prosecution and maintenance of those ONO Patents in the FATE Territory [***] that are solely owned by ONO and that [***]. ONO shall provide to FATE copies of filings and correspondence of such ONO Patents solely owned by ONO promptly upon their being filed or received in such ONO Territory and in the FATE Territory and shall promptly notify FATE in writing of any developments in filing, prosecution and maintenance in such ONO Territory and in the FATE Territory with respect to any ONO Patents in-licensed by ONO. The Parties acknowledge and agree that ONO has the final decision making authority with respect to any dispute on such preparation, filing, prosecution and maintenance of such ONO Patents and [***].

7.3.2 Opt Out by ONO. For any ONO Patent for which FATE has been granted a license under Section 5.3.2 (License for Collaboration Candidates and Products) or Section 5.3.3 (License upon Exercise of CDCC Option for [***]. In these events, ONO shall notify FATE if it elects to continue to prosecute or maintain or to file the applicable ONO Patent within [***] days from its receipt of FATE's notice. If ONO does not so elect, then (a) FATE may (but is not obliged to) prepare, file, prosecute, and maintain, as applicable, such ONO Patent or such new patent application, [***], (b) ONO shall fully cooperate with FATE in providing FATE with information in its possession necessary for such preparation, filing, prosecution and maintenance, and (c) ONO shall sign or use Commercially Reasonable Efforts to have signed all legal documents necessary for FATE to file and prosecute such patent applications or to obtain or maintain such Patents. [***]. In the case of each ONO Patent filed, prosecuted and maintained by FATE, such ONO Patent shall cease being an ONO Patent for the purpose of determining the royalty rate and Royalty Term with respect to FATE Cell Therapy pursuant to [***] hereof in such country of filing, prosecution and maintenance. With respect to ONO Patent in-licensed by ONO and for which FATE has been granted a sublicense under Section 5.3.2 (License for Collaboration Candidates and Products) or Section 5.3.3 (License upon Exercise of CDCC Option for [***].

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7.4 Filing, Prosecution, and Maintenance of Joint Patent. Upon receiving notice of the creation of Joint Inventions, [*******] shall have the first right, but not the obligation, to be responsible for obtaining and maintaining any Patents that claim or disclose such Joint Inventions ("Joint Patents"). If [***] elects to be responsible for such activities, [***] shall file, prosecute, and maintain all Joint Patents throughout the world, in the names of [***]. [***] shall provide [***] an opportunity to review and comment on material documents related to such filing, prosecution and maintenance in accordance with this Section 7.4, which comments [***] shall consider in good faith. If [***] decides not to be responsible for obtaining or maintaining any particular Joint Patent in a country, [***] shall notify [***] in writing and [***] shall have the right, but not the obligation, to be responsible for such activities in such country. In this case, [***] may file, prosecute, and maintain such Joint Patents in such country in the names of both [***] and [***], and [***] shall provide [***] an opportunity to review and comment on material documents related to such filing, prosecution and maintenance in accordance with this Section 7.4, which comments [***] shall consider in good faith. Each Party shall at its own cost, sign, or use Commercially Reasonable Efforts to have signed, all legal documents necessary to file and prosecute Joint Patent applications or to obtain or maintain Joint Patents. Each Party shall fully cooperate with the other Party in providing the other Party with necessary information in its possession for such filing, prosecution and maintenance. The Parties shall share [***]; provided, however, that any of such costs for [***] (collectively, "Joint Patent Costs"). The Party who is responsible for the filing, prosecution and maintenance of the Joint Patent ("Joint IP Prosecuting Party") shall, through its patent counsel, if applicable, invoice the other Party for such Joint Patent Costs within [***] days after such Joint Patent Costs were incurred and the other Party shall pay such Joint Patent Costs to the applicable Party or its patent counsel within [***] days after receipt of such invoice. Notwithstanding this Section 7.4, if a Party does not wish to bear Joint Patent Costs with respect to a Joint Patent in a country, such Party may, by providing [***] days prior written notice to the other Party, terminate its obligation to pay such Joint Patent Costs. Such Party shall promptly assign all of its right, title and interest in and to such Joint Patent in such country to the other Party upon such other Party's written request at such other Party's cost; provided, however, that such Joint Patent shall cease being a Joint Patent and shall be deemed either a FATE Patent solely owned by FATE if ONO is the assigning Party or an ONO Patent solely owned by ONO if FATE is the assigning Party.

7.5 Enforcement of FATE Patents, ONO Patents or Joint Patent Against Infringers.

7.5.1 Notice. In the event that, following the Exercise Date with respect to the applicable Collaboration Candidate, FATE or ONO becomes aware of [***], such Party shall notify the other Party promptly, and following such notification, the Parties shall confer.

7.5.2 Enforcement of FATE Patents.

(a) FATE shall bring any action or proceeding to enforce or defend, as applicable, at its own expense, including without limitation, attorney's fees and in its own name and entirely under its own direction and control, subject to **Section 7.5.2(c)**, any FATE Patent [***]. ONO shall reasonably assist FATE [***] in any such action or proceeding if so requested, execute any

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instruments and documents as may be reasonably required for FATE to take any such actions, and shall lend its name to such actions or proceedings if requested by FATE or required by Laws. FATE shall keep ONO informed of the progress of any such action or proceeding. ONO shall have the right to participate and be represented in any such action or proceeding by its own counsel at its own expense including without limitation such attorneys' fees. No settlement of any such action or proceeding nor court order or decision to the extent appealable which restricts or adversely affects the scope of the licenses granted by FATE to ONO under the terms of this Agreement, or which may adversely affect the Commercialization of a Collaboration Product by ONO in the ONO Territory, will be entered into, or accepted, by FATE without the prior written consent of ONO, which consent shall not be unreasonably withheld, delayed or conditioned. FATE will consult with ONO and will take any ONO comments into good faith consideration with respect to the infringement, claim construction, or defense of the validity or enforceability of any claim in any such FATE Patent [***] in any such action or proceeding. FATE shall provide to ONO copies of any papers relating to the infringement and/or invalidity litigation of any such involved FATE Patents [***] promptly upon their being filed or received. ONO shall not have any right to independently settle any such action or proceeding without FATE's prior written consent, [***].

(b) If FATE elects not to bring any action or proceeding with respect to a Competitive Product Infringement in the ONO Territory (other than the FATE CDCC Territory during the CDCC Term) in accordance with the second sentence of **Section 7.5.2(a)** within [***] after first notifying ONO or being notified by ONO with respect thereto, then the Parties will promptly confer and attempt to agree on a course of action. [***]

(c) Notwithstanding anything to the contrary in this **Section 7.5.2**, FATE shall have the sole right (but not obligation) and discretion for the enforcement of FATE Patents [***] in the FATE Territory other than the FATE CDCC Territory during the CDCC Term.

7.5.3 Enforcement of ONO Patents.

(a) ONO shall bring any action or proceeding to enforce or defend, as applicable, at its own expense, including without limitation, attorney's fees and in its own name and entirely under its own direction and control, subject to **Section 7.5.3(c)**, any ONO Patent [***]. FATE shall reasonably assist ONO [***] in any such action or proceeding if so requested, execute any instruments and documents as may be reasonably required for ONO to take any such actions, and shall lend its name to such actions or proceedings if requested by ONO or required by Laws. ONO shall keep FATE informed of the progress of any such action or proceeding. FATE shall have the right to participate and be represented in such action or proceeding separately by counsel of its own choice and at its own expense including without limitation such attorneys' fees. No settlement of any such action or proceeding nor court order or decision to the extent appealable which restricts or adversely affects the scope of the licenses granted by ONO to FATE under the terms of this Agreement, or which may adversely affect the Commercialization of a Collaboration Product by ONO in the ONO Territory or by FATE in the FATE Territory, will be entered into, or accepted, by ONO without the prior written consent of FATE, which consent shall not be unreasonably withheld, delayed or conditioned.

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ONO will consult with FATE and will take any FATE comments into good faith consideration with respect to the infringement, claim construction, or defense of the validity or enforceability of any claim in any such ONO Patent, as applicable, in any such action or proceeding. ONO shall provide to FATE copies of any papers relating to the infringement and/or invalidity litigation of any such involved ONO Patents promptly upon their being filed or received. FATE shall not have the right to independently settle any such action or proceeding without ONO's prior written consent, [***].

(b) If ONO elects not to bring any action or proceeding with respect to a Competitive Product Infringement in the FATE Territory or the ONO Territory (other than the FATE CDCC Territory during the CDCC Term) in accordance with the second sentence of **Section 7.5.3(a)** within [***] after first notifying FATE or being notified by FATE with respect thereto, then the Parties will promptly confer and attempt to agree on a course of action. [***].

7.5.4 Joint Enforcement in FATE CDCC Territory During CDCC Term. In the case of any Competitive Product Infringement of any FATE Patent, ONO Patent or Joint Patent in the FATE CDCC Territory during the CDCC Term, the Parties shall promptly confer to consider such Competitive Product Infringement and the appropriate course of action in good faith.

7.5.5 Damages. In the event that either Party exercises the rights conferred in this Section 7.5 and recovers any damages or other sums in such action, suit or proceeding or in settlement thereof, such damages or other sums recovered shall first be applied to all out-of- pocket costs and expenses incurred by the Parties in connection therewith, including without limitation attorneys' fees. If such recovery is insufficient to cover all such costs and expenses of both Parties, it shall be shared in proportion to the total of such costs and expenses incurred by each Party. If after such reimbursement any funds remain from such damages or other sums recovered, it shall be shared [***].

7.5.6 Upstream Limitations. Each Party's rights to enforce a FATE Patent or ONO Patent pursuant to this Section 7.5, or to defend against a Competitive Product Infringement in any action or proceeding described in Section 7.5.1 (Notice), shall be subject to the applicable provisions of any agreements between the Party Controlling such Patents and its licensor. In the case that (a) the provisions of any agreement between a Party Controlling a Patent and its licensor prevail over this Agreement, (b) the Party Controlling a Patent and its licensor do not enforce or defend such Patent against a Competitive Product Infringement and the other Party's Commercialization of such Collaboration Product is adversely affected by such Competitive Product Infringement, and (c) the other Party cannot be provided the rights to enforce such Patent against a Competitive Product Infringement commensurate with its rights as provided for in this Section 7.5, or to defend against a Competitive Product Infringement in any action or proceeding commensurate with its rights as provided for in Section 7.5.1 (Notice), [***].

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7.6 Patent Term Extension. FATE and ONO shall each cooperate with one another and shall use Commercially Reasonable Efforts to obtain patent term extension (including without limitation any pediatric exclusivity extensions as may be available) or supplemental protection certificates or their equivalents in any country with respect to Patents claiming the Collaboration Products, as applicable. If elections with respect to obtaining such patent term extensions are to be made, FATE shall have the right to elect to seek patent term extension or supplemental protection with respect to the relevant Collaboration Product at its sole discretion [***], and ONO shall have the right to elect to seek patent term extension or supplemental protection [***]; provided, however, that in each case, such election will be made so as to maximize the period of marketing exclusivity for the Collaboration Product. As to the patent term extension with respect to Joint Patents, the expense thereof shall be [*******]. As to the patent term extension with respect to Patents claiming the Collaboration Products in the FATE CDCC Territory during the CDCC Term, both FATE and ONO shall consult each other and if both Parties agree on seeking patent term extension or supplemental protection with respect to the relevant Collaboration Product, both Parties shall do so and the expense thereof shall [***]. For such purpose, for all Regulatory Approvals, FATE shall provide ONO with written notice of any expected Regulatory Approval in the FATE Territory and ONO shall provide FATE with written notice of any expected Regulatory Approval in the ONO Territory, in each case, at least [***] days prior to the expected date of Regulatory Approval, as well as notice within [***] Business Days of receiving each Regulatory Approval confirming the date of such Regulatory Approval.

7.7 Notification of Patent Certification. FATE and ONO shall provide each other with copies of any notice of the filing of an application for licensure of a Biosimilar Product that is covered by one or more FATE Patents, ONO Patents or Joint Patents pursuant to under 35 U.S.C. §271(e)(2) or receipt of access to the biosimilar application and manufacturing information pursuant to the Biologics Price Competition and Innovation Act (BPICA) at 42 U.S.C. §262(I)(2) or other similar notice by a Third Party or any other notice or document exchange pursuant to 42 U.S.C §262(I)(3)(C), 42 U.S.C §262(I)(4), notice of suit pursuant to 42 U.S.C §262(I)(6)(A) or 42 U.S.C §262(I)(6)(B) or notice of commercial marketing from a Third Party pursuant to 42 U.S.C §262(I)(8)(A) and any foreign equivalent thereof. The receiving Party shall notify and share such access with the other Party within [***] Business Days after the receiving Party receives such notice. FATE and ONO shall reasonably assist one another with respect to patent lists required under 42 U.S.C §262(I)(4) or foreign equivalent, and shall cooperate with one another in any actions reasonably undertaken by a Party in accordance with Section 7.5 (Enforcement of FATE Patents, ONO Patents or Joint Patents Against Infringers) to contest any suits under 42 U.S.C §262 (including without limitation making available documents possessed that are reasonably required and making available personnel for interviews and testimony) or foreign equivalent.

7.8 Regulatory Data Protection. To the extent required by or permitted by Law, FATE and ONO shall each cooperate with one another and shall use Commercially Reasonable Efforts to [***].

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7.9 Defense Against Claims of Infringement of Third Party Patents. If a Third Party asserts that a Patent or other right owned by it is or has been infringed by the manufacture, use, sale, offer for sale, promotion, distribution, export, import, labeling, packaging or other Commercialization of a Collaboration Candidate or Collaboration Product in the Territory, the Party first obtaining knowledge of such a claim shall immediately provide the other Party with a notice of such claim along with the related facts in reasonable detail. In such event, subject to the exercise by ONO of the ONO Option with respect to the Collaboration Product that is the subject of such Third Party assertion, [***]. FATE and ONO shall each cooperate with one another, and each Party shall have the right to be represented separately by counsel of its own choice and at its own expense, including without limitation such attorneys' fees. Notwithstanding the foregoing, no settlement shall be entered into, or accepted, without the prior written consent of the other Party if such settlement would adversely affect the rights and benefits of, or impose or adversely affect any obligations on, such other Party, which consent shall not unreasonably be withheld, delayed or conditioned.

7.10 Third Party Licenses. Subject to the exercise by ONO of the ONO Option with respect to a Collaboration Product:

7.10.1 Existing Agreements. The Parties agree and understand that FATE has entered into certain agreements under which FATE has been granted a license, prior to the Effective Date, with the rights to sublicense, under certain FATE Intellectual Property to Research, Develop and Commercialize any Collaboration Candidate and Collaboration Product in the Territory or to otherwise practice any other rights contemplated in this Agreement that are subject to royalty obligations (such agreements collectively, the "Existing Agreements"), [***]. The list of Existing Agreements is set forth on Exhibit 7.10.1.

7.10.2 FATE Platform Improvement. The Parties acknowledge that FATE has a broad interest in improving FATE Platform Technology and as such, FATE may from time to time, in its discretion and at its expense, [*******].

7.10.3 Necessary License.

(a) Notice. [***], in the event a Party reasonably determines that (i) [***]or (ii) such Potential Necessary License has been deemed a Necessary License by the JSC pursuant to **Section 7.10.3(b)**.

(b) Negotiations. [***].

(c) Allocation of Costs.

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(i) Royalties under Necessary License. Unless the Parties otherwise agree, the royalty amounts owed under any Necessary License [***]:

(A) [***]

(B) [***]

(C) [***]

(ii) Other Payments under Necessary License. For all other non- royalty payments, including milestone payments, owed by either Party to any Third Party pursuant to any Necessary License, [***].

7.10.4 [***].

7.11 Common Interest Disclosures. With regard to any information, opinions or other materials disclosed pursuant to this Agreement by one Party to the other Party regarding intellectual property or technology owned by Third Parties, ONO and FATE agree that they have a common legal interest in determining whether, and to what extent, Third Party intellectual property rights may affect the performance of the Research, Development, manufacturing or Commercialization of Collaboration Products, and have a further common legal interest in defending against any actual or prospective Third Party claims based on allegations of misuse or infringement of intellectual property rights relating to the performance of the Research, Development, manufacturing or Commercialization of Collaboration Products. Accordingly, ONO and FATE agree that all such information, opinions and other materials obtained by ONO and FATE from each other will be used solely for purposes of the Parties' common legal interests with respect to the conduct of this Agreement. All such information, opinions and other materials shall be treated as protected by the attorney-client privilege, the work product privilege, and any other privilege or immunity that may otherwise be applicable. By sharing any such information, opinions and other materials, neither Party intends to waive or limit any privilege or immunity that may apply to the shared information, opinions and other materials. Neither Party shall have the authority to waive any privilege or immunity on behalf of the other Party with respect to such information, opinions and other materials without such other Party's prior written consent, nor shall the waiver of privilege or immunity resulting from the conduct of one Party be deemed to apply against the other Party.

ARTICLE 8
CONFIDENTIALITY

8.1 Nondisclosure. Each Party agrees that, during the Term and for a period of [***] years thereafter, a Party (the "Receiving Party") receiving (itself or through its Affiliates) Confidential Information of the other Party (the "Disclosing Party") or its Affiliates (or that has received any such Confidential Information from the Disclosing Party or its Affiliates prior to the Effective Date) shall (a) maintain in strict confidence such Confidential Information using [***] (b) not disclose such Confidential Information to any Third Party without the prior written consent of the Disclosing Party, except for disclosures expressly permitted below, and (c) not use such Confidential Information for any purpose, except that each Party shall have the right to use the

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other Party's Confidential Information in connection with the exercise of its rights or fulfilling its obligations under this Agreement (it being understood that this clause (c) shall not create or imply any rights or licenses not expressly granted under this Agreement). Notwithstanding anything to the contrary in the foregoing, the obligations of confidentiality and non-use with respect to any trade secret within such Confidential Information shall survive such [***] year period until the time and unless any of the exceptions set forth in Section 8.2 (Exceptions) below applies to such Confidential Information.

8.2 Exceptions. The obligations in Section 8.1 (Nondisclosure) shall not apply with respect to any portion of the Confidential Information that the Receiving Party can show by competent proof:

8.2.1 is publicly disclosed by the Disclosing Party, either before or after it is disclosed to the Receiving Party or its Affiliates hereunder;

8.2.2 was duly known to or possessed by the Receiving Party or its Affiliates prior to disclosure by the Disclosing Party;

8.2.3 is subsequently disclosed to the Receiving Party or its Affiliates by a Third Party lawfully in possession thereof and without any obligation to keep it confidential or any restriction on its use;

8.2.4 is published by a Third Party or otherwise becomes publicly available or enters the public domain, either before or after it is disclosed to the Receiving Party or its Affiliates through no fault of the Receiving Party or any of its Affiliates; or

8.2.5 is independently discovered or developed by employees of the Receiving Party or its Affiliates who had no access to, and without reference to, Confidential Information of the Disclosing Party.

Specific aspects or details of Confidential Information shall not be deemed to be within the public domain or in the possession of the Receiving Party merely because such Confidential Information is embraced by information in the public domain or in the possession of the Receiving Party. Further, no combination of Confidential Information shall be considered in the public domain or in the possession of the Receiving Party merely because individual elements of such Confidential Information are in the public domain or in the possession of the Receiving Party unless the combination and its principles are in the public domain or in the possession of the Receiving Party.

8.3 Authorized Disclosure. The Receiving Party may disclose Confidential Information belonging to the Disclosing Party to the extent (and only to the extent) such disclosure is reasonably necessary in the following instances set forth in Sections 8.3.1 through 8.3.5 below:

8.3.1 filing or prosecuting Patents;

8.3.2 Regulatory Filings and obtaining Regulatory Approvals;

8.3.3 prosecuting or defending litigation or arbitration, including without limitation responding to a subpoena in a Third Party litigation or arbitration;

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8.3.4 subject to **Section 8.5 (Securities Filings)**, complying with Laws (including without limitation the rules and regulations of the Securities and Exchange Commission or any national securities exchange) and with judicial process, if in the reasonable opinion of the Receiving Party's counsel, such disclosure is necessary for such compliance; and

8.3.5 disclosure, solely on a "need to know basis", to [*******], each of whom prior to disclosure shall be bound by obligations of confidentiality and restrictions on use of such Confidential Information that are no less restrictive than the obligations in this Article 8 (Confidentiality); [***].

8.3.6 If and whenever any Confidential Information is disclosed in accordance with this **Section 8.3**, such disclosure shall not cause any such information to cease to be Confidential Information except to the extent that exceptions set forth in **Section 8.2 (Exceptions)** apply to such Confidential Information (otherwise than by breach of this Agreement). Where reasonably possible and subject to **Section 8.5 (Securities Filings)**, the Receiving Party shall notify the Disclosing Party of the Receiving Party's intent to make such disclosure pursuant to this **Section 8.3**, other than **Section 8.3.5** above, sufficiently prior to making such disclosure so as to allow the Disclosing Party adequate time to take whatever action it may deem appropriate to protect the confidentiality of the Confidential Information. In this case, the Receiving Party may disclose only the Confidential Information of the Disclosing Party that is advised by its counsel or is legally required to be disclosed and shall cooperate in the Disclosing Party's action to protect the confidentiality of such Confidential Information.

8.4 **Terms of this Agreement.** The Parties acknowledge that this Agreement and all of the respective terms of this Agreement shall be treated as Confidential Information of both Parties.

8.5 **Securities Filings.** In the event either Party proposes to file with the Securities and Exchange Commission or the securities regulators of any state or other jurisdiction a registration statement or any other disclosure document which describes or refers to the terms and conditions of this Agreement under the Securities Act of 1933, as amended, the Securities Exchange Act of 1934, as amended, or any other applicable securities Law, such Party shall notify the other Party of such intention and shall provide such other Party with a copy of relevant portions of the proposed filing [***] Business Days (or such shorter time as practicable) prior to such filing, including without limitation any exhibits thereto relating to the terms and conditions of this Agreement. The Party making such filing shall use reasonable efforts to obtain confidential treatment of the terms and conditions of this Agreement or any portion thereof that such other Party requests be kept confidential, and shall only disclose Confidential Information that it is advised by its counsel is legally required to be disclosed. No such notice shall be required under this Section 8.5 if the description of or reference to this Agreement contained in the proposed filing has been included in any previous filing made by either Party hereunder or otherwise approved by the other Party.

8.6 **Relationship to Confidentiality Agreement.** This Agreement supersedes the Prior CDAs, provided that all "Confidential Information" disclosed or received by the Parties thereunder shall be deemed "Confidential Information" hereunder and shall be subject to the terms and conditions of this Agreement.

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

8.7 Collaboration Information. The Parties acknowledge and agree that (a) information specific to each Collaboration Candidate and Collaboration Product (and not otherwise applicable to any other products), including the sequences of CARs and the Antigen Binding Domains related thereto, and (b) those specific activities conducted under the Joint Development Plan, in each case (a) and (b) shall be deemed Confidential Information of both Parties for which each Party will be deemed a Receiving Party. All other information and Invention shall be deemed Confidential Information of the Party owning such information or Invention.

8.8 Publications.

8.8.1 Publication by a Party. Notwithstanding Section 8.7 (Collaboration Information), either Party may publish or present data and/or results including those of any Clinical Trial relating to a Collaboration Candidate, Collaboration Product or the activities conducted under this Agreement in journals and/or at conferences, subject to the prior review and comment by the other Party as set forth herein; provided that ONO shall not have the right to make any such publication or presentation with respect to a Collaboration Candidate prior to exercise of the ONO Option with respect thereto. The publishing Party shall provide the non- publishing Party with the opportunity to review any such proposed abstract, manuscript or presentation by delivering a copy thereof to the non-publishing Party no less than [*******] days ([***] days with respect to abstracts) before its intended submission for publication or presentation. The non-publishing Party shall have [***] days ([***] days for abstracts) of its receipt of any such abstract, manuscript or presentation to comment, and the publishing Party shall consider in good faith such non-publishing Party's comments in such abstract, manuscript or presentation. In the event the non-publishing Party objects to the disclosure in writing within the applicable review period, the publishing Party agrees to delete from the proposed disclosure any of the non-publishing Party's Confidential Information upon the reasonable request of the non-publishing Party. If the non-publishing Party identifies that any information in such proposed abstract, manuscript or presentation contains a patentable Invention, the Parties shall discuss in good faith filing a Patent application, which filing will be subject to Article 7, and the publishing Party shall delay such submission for publication or presentation until the applicable Party completes such filing or the publishing Party may, subject to the non-publishing Party's prior written consent which shall not be unreasonably withheld, delayed or conditioned, submit such proposed abstract, manuscript or presentation for publication or presentation removing the information relating to such patentable Invention in a manner which shall not negatively affect the patentability of such Invention. Once any such abstract, manuscript or presentation is accepted for publication, the publishing Party will provide the non- publishing Party with a copy of the final version of the manuscript, presentation or abstract. The Parties acknowledge that publications relating to Collaboration Candidates submitted for publication by the publishing Party prior to the Effective Date shall not be subject to the above review procedure. Either Party may issue copies of the other Party's publication as it is and its full translation in other languages (e.g. Japanese) at the same time or following the initial publication.

8.8.2 Publication of Clinical Trial Results. In the case of the publication of Clinical Trial results, the Parties shall discuss and reasonably cooperate in order to facilitate the process

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to be employed in order to ensure the publication of any summaries of Clinical Trials data and results as required under Laws on the Clinical Trial registry of each respective Party.

8.9 Publicity. Upon execution of this Agreement, the Parties shall issue the press release announcing the existence of this Agreement in the form and substance as set forth in Exhibit 8.9 (Press Release) through a mutually agreed media and at a mutually agreed time. Each Party agrees not to issue any other press release or other public statement disclosing the transactions contemplated hereby that contains information not previously publicly disclosed in accordance with this Section 8.9 (Publicity) without the prior written consent of the other Party (not to be unreasonably withheld, delayed, or conditioned) unless otherwise permitted under this Article 8. Notwithstanding the foregoing, any disclosure that is required by Laws (including without limitation the Securities Act of 1933, as amended, and the Securities Exchange Act of 1934, as amended), or the rules of a securities exchange or the Securities and Exchange Commission or the securities regulations of any state or other jurisdiction, as reasonably advised by the disclosing Party's counsel, may be made; provided, however, that any such required disclosure may not contain the other Party's confidential business or technical information, including without limitation its Confidential Information, unless disclosure of such information (including Confidential Information) is required by Laws or such rules or regulations, in which event the Parties will use reasonable efforts to minimize such disclosure and obtain confidential treatment for any such information that is disclosed to a governmental agency. Each Party agrees to provide to the other Party a copy of any public announcement regarding this Agreement or the subject matter thereof as soon as reasonably practicable under the circumstances but no later than [*******] Business Days (unless impracticable) prior to its scheduled release. Each Party shall have the right to expeditiously review and recommend changes to any such announcement and, except as otherwise required by Laws or such rules or regulations, the Party whose announcement has been reviewed shall remove any Confidential Information of the reviewing Party or disclosure of any patentable Invention that the reviewing Party reasonably deems to be inappropriate for disclosure and consider in good faith the reviewing Party's recommended changes subject to Section 8.3.4 (Authorized Disclosure). Nothing in this Section 8.9 (Publicity) shall be construed to prohibit ONO, FATE or their respective Affiliates or Sublicensees from making a public announcement or disclosure to their respective actual or potential partners, investors, bankers, or acquirors or a public announcement or disclosure regarding the stage of Development of Collaboration Candidates and Collaboration Products or Clinical Trial results with respect thereto as may be required by Laws or such rules or regulations, as reasonably advised by ONO's (or its Affiliates' or Sublicensees') or FATE's (or its Affiliates' or Sublicensees') counsel. Notwithstanding the foregoing, either Party may publicly disclose information related to this Agreement or the results of such Party's activities performed under this Agreement that was previously disclosed in accordance with this Section 8.9 or as otherwise permitted under this Article 8 without obtaining the other Party's consent. Either Party may issue a full translation of a press release or public announcement to be issued by the other Party or the press release as it is issued by the other Party at the same time or subsequent to such initial disclosure by the other Party.

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ARTICLE 9
REPRESENTATIONS, WARRANTIES, AND COVENANTS; DISCLAIMERS; LIMITATION OF LIABILITY

9.1 Mutual Representations and Warranties. Each Party represents and warrants to the other Party as of the Effective Date that:

9.1.1 such Party is duly organized, validly existing and in good standing under the Laws of the jurisdiction of its incorporation and has full corporate power, ability and authority to enter into this Agreement and to carry out the provisions hereof;

9.1.2 execution of this Agreement and the performance by such Party of its obligations hereunder have been duly authorized;

9.1.3 this Agreement has been duly executed and delivered on behalf of such Party, the Person or Persons executing this Agreement on its behalf have been duly authorized to do so by all requisite corporate action, and this Agreement constitutes a legal, valid, binding obligation, enforceable against it in accordance with the terms hereof;

9.1.4 the execution, delivery and performance of this Agreement by such Party does not create a breach or default under any other agreement to which it is a party or by which it is bound, nor violate any Law or regulation of any court, governmental body or administrative or other agency having jurisdiction over such Party;

9.1.5 no government authorization, consent, approval, license, exemption of or filing or registration with any court or governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, under any Laws currently in effect, is or will be necessary for, or in connection with, the transaction contemplated by this Agreement or any other agreement or instrument executed in connection herewith, or for the performance by it of its obligations under this Agreement and such other agreements, except as may be required to obtain Competition Law clearance and except for Regulatory Approvals including BLA Approvals obtained in accordance with this Agreement;

9.1.6 all of its directors, employees, officers have executed agreements requiring assignment to such Party of all Inventions, whether or not patentable, made during the course of and as a result of their association with such Party and obligating each such directors, employee, officer to maintain as confidential the Confidential Information of such Party; and

9.1.7 to the Knowledge of FATE or its Affiliates in case of FATE, or to the Knowledge of ONO in case of ONO or its Affiliates, neither such Party or its Affiliates, nor any of their respective directors, employees, officers, consultants or Third Party contractors who have rendered services relating to the Collaboration Candidates or Collaboration Products: (a) has ever been debarred or is subject or debarment or convicted of a crime for which an entity or person could be debarred by the FDA under 21 U.S.C. Section 335a (or subject to a similar sanction of EMA or JMHW or equivalent in the Territory) or (b) has ever been under indictment for a crime for which a person or entity could be so debarred.

9.2 Additional Representations and Warranties of FATE. FATE hereby represents and warrants to ONO, as of the Effective Date, that:

9.2.1 FATE (or its Affiliates) Controls the FATE Patents set forth on **Exhibit 1.48 (FATE Patents)** and FATE Know-How and has the right to grant the licenses to ONO under the FATE Intellectual Property as set forth in **Section 5.1 (Licenses to ONO)**;

9.2.2 FATE has been granted a license or sublicense with the rights to sublicense to ONO as set forth herein and for ONO to further sublicense to ONO's Sublicensees in accordance with the terms of this Agreement under the FATE Patents identified on **Exhibit 1.48 (FATE Patents)** as owned by Third Parties under the Existing Agreement;

9.2.3 to the Knowledge of FATE or its Affiliates as of the Effective Date, [*******]

9.2.4 to the Knowledge of FATE or its Affiliates, there is no pending litigation, and FATE and its Affiliates have not received any written notice from any Third Party, that alleges that the FATE Patents set forth on **Exhibit 1.48** are invalid or unenforceable; to the Knowledge of FATE or its Affiliates, all inventors in FATE Patents listed on **Exhibit 1.48** hereto that are owned by FATE are correctly identified in compliance with Law in the various jurisdictions, including all convention treaties, and such inventors have agreed to assign to FATE their entire rights, title and interest to and in inventions claimed in such FATE Patents and any intellectual property thereto, and no other Person has any claim of ownership or inventorship whatsoever with respect to such FATE Patents;

9.2.5 to the Knowledge of FATE or its Affiliates, there is no pending litigation, and FATE and its Affiliates have not received any written notice from any Third Party, that alleges that FATE's activities with respect to Collaboration Candidates have infringed or misappropriated any intellectual property rights or confidential information of any Third Party;

9.2.6 the FATE Patents are free and clear of any liens, charges and encumbrances that would adversely affect the rights granted to ONO hereunder;

9.2.7 to the Knowledge of FATE or its Affiliates, (a) [***]

9.2.8 all tangible information and data provided by or on behalf of FATE or its Affiliates to ONO on or before the Effective Date [***].

9.2.9 FATE or its Affiliates have disclosed to ONO (a) [***] as of the Effective Date and (b) [***] as of the Effective Date, that in each case (a) and (b) [***].

9.2.10 FATE and its Affiliates have not received any written notice from or been investigated by, any court or governmental body or administrative or other agency having jurisdiction over activities of FATE or its Affiliates, including Regulatory Authorities, claiming or suggesting that performance of its obligations hereunder or any other activities or business operation of FATE or its Affiliates related to the Collaboration Candidates have violated or may violate any Law, including if applicable GLP, GMP or GCP;

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

9.2.11 FATE and its Affiliates have conducted (and to the Knowledge of FATE or its Affiliates, each of their respective Third Party contractors and consultants have conducted), the research and development of Collaboration Candidate prior to the Effective Date [***] in each case to the extent applicable as determined by FATE using reasonable discretion, and applicable Law;

9.2.12 FATE and its Affiliates have taken all commercially reasonable steps to protect, preserve and maintain the confidentiality of all confidential or non-public information included in FATE Know-How, including by disclosing such FATE Know-How to Third Parties only under appropriate terms of confidentiality and restrictions on use of such Confidential Information. To the Knowledge of FATE or its Affiliates, no material breach of such confidentiality obligations has been committed by any Third Party;

9.2.13 Neither FATE nor its Affiliates, nor any of its or their respective directors, officers, employees or agents has (a) committed an act, (b) made a statement or (c) failed to act or make statement, in any case ((a), (b) or (c)), that (x) would be or create an untrue statement of material fact or fraudulent statement to the FDA or any other Regulatory Authority with respect to the Research, Development and manufacture of Collaboration Candidate 1 or (y) could reasonably be expected to provide a basis for the FDA or any other Regulatory Authority to invoke its policy respecting "**Fraud, Untrue Statements of Material Facts, Bribery and Illegal Gratuities**", set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto or any analogous laws or policies, with respect to the Research, Development and manufacture of Collaboration Candidate 1;

9.2.14 FATE has provided ONO with a true and complete copy of each of the Existing Agreements (except for redactions of terms not material to ONO's rights thereunder), and each Existing Agreement is in full force and effect. No written notice of default or termination has been received or given under any Existing Agreement, and to the Knowledge of FATE or its Affiliates, there is no act or omission by FATE, its Affiliates or Sublicensees (other than ONO) that would provide a right to terminate any Existing Agreement. Neither FATE nor any of its Affiliates has waived any material right under any Existing Agreement; and

9.2.15 FATE and its Affiliates have not, as of the Effective Date, granted any license to any Third Party under the FATE Intellectual Property, or entered into any agreement with any Third Party that would conflict or interfere with any of the rights or licenses granted to ONO hereunder.

9.3 Additional Representations and Warranties of ONO. ONO hereby represents and warrants to FATE, as of the Effective Date, that:

9.3.1 ONO (or its Affiliates) Controls the ONO Patents and ONO Know-How and has the right to grant the licenses to FATE under the ONO Intellectual Property as set forth in **Section 5.1 (Licenses to ONO)**;

9.3.2 to the Knowledge of ONO or its Affiliates as of the Effective Date, [*******];

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9.3.3 to the Knowledge of ONO or its Affiliates, there is no pending litigation, and ONO or its Affiliates have not received any written notice from any Third Party, that alleges that the ONO Patents are invalid or unenforceable; to the Knowledge of ONO or its Affiliates, all inventors in ONO Patents that are owned by ONO are correctly identified in compliance with Law in the various jurisdictions, including all convention treaties, and all (i) inventors of the ONO Patents owned solely by ONO and (ii) inventors of the ONO Patents owned jointly by ONO that are employees of ONO, in each case (i) and (ii) have agreed to assign to ONO their entire rights, title and interest to and in inventions claimed in such ONO Patents and any intellectual property thereto, and no other Person has any claim of ownership or inventorship whatsoever with respect to such ONO Patents;

9.3.4 to the Knowledge of ONO or its Affiliates, there is no pending litigation, and ONO and its Affiliates have not received any written notice from any Third Party, that alleges that ONO's activities with respect to [***] or any Antigen Binding Domains that bind such target antigens have infringed or misappropriated any intellectual property rights or confidential information of any Third Party;

9.3.5 the ONO Patents are free and clear of any liens, charges and encumbrances that would adversely affect the rights granted to FATE hereunder;

9.3.6 to the Knowledge of ONO or its Affiliates, [*******]

9.3.7 all tangible information and data provided by or on behalf of ONO or its Affiliates to FATE on or before the Effective Date are [*******];

9.3.8 ONO or its Affiliates have disclosed to FATE [***] as of the Effective Date [***]

9.3.9 ONO and its Affiliates have not received any written notice from or been investigated by, any court or governmental body or administrative or other agency having jurisdiction over activities of ONO or its Affiliates, including Regulatory Authorities, claiming or suggesting that performance of its obligations hereunder or any other activities or business operation of ONO or its Affiliates [***] have violated or may violate any Law, including if applicable GLP, GMP or GCP;

9.3.10 ONO and its Affiliates have conducted (and to the Knowledge of ONO or its Affiliates, each of their respective Third Party contractors and consultants have conducted), the research and development of Antigen Binding Domains that bind [***] prior to the Effective Date [***]

9.3.11 ONO and its Affiliates have taken all commercially reasonable steps to protect, preserve and maintain the confidentiality of all confidential or non-public information included in ONO Know-How, including by disclosing such ONO Know-How to Third Parties only under appropriate terms of confidentiality and restrictions on use of such Confidential Information. To the Knowledge of ONO or its Affiliates, no material breach of such confidentiality obligations has been committed by any Third Party;

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9.3.12 Neither ONO nor its Affiliates, nor any of its or their respective directors, officers, employees or agents has (a) committed an act, (b) made a statement or (c) failed to act or make statement, in any case ((a), (b) or (c)), that (x) would be or create an untrue statement of material fact or fraudulent statement to the FDA or any other Regulatory Authority with respect to the Research, Development and manufacture of Antigen Binding Domains [***] or (y) could reasonably be expected to provide a basis for the FDA or any other Regulatory Authority to invoke its policy respecting "Fraud, Untrue Statements of Material Facts, Bribery and Illegal Gratuities", set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto or any analogous laws or policies, with respect to the Research, Development and manufacture of Antigen Binding Domains [***]; and

9.3.13 ONO and its Affiliates have not, as of the Effective Date, granted any license to any Third Party under the ONO Intellectual Property, or entered into any agreement with any Third Party that would conflict or interfere with any of the rights or licenses granted to FATE hereunder.

9.4 Mutual Covenants. Each Party hereby covenants to the other Party that during the Term:

9.4.1 all directors, officers, and employees of such Party or its Affiliates working under this Agreement shall be under the obligation to assign all right, title and interest in and to their inventions and discoveries, whether or not patentable, if any, to such Party as the sole owner thereof;

9.4.2 such Party shall perform its activities pursuant to this Agreement and generate, prepare, maintain and retain all data, regulatory documentation that is required to be generated, maintained or retained in compliance with GLP, GCP, and GMP, in each case as applicable under the Laws and regulations of the country and the state and local government wherein such activities are conducted, as determined by such Party using reasonable discretion, and with respect to the care, handling and use in Research and Development activities hereunder of any non-human animals by or on behalf of such Party, shall at all times comply (and shall require compliance by any of its Third Party contractors) with all Laws, and also with the standards in the pharmaceutical industry for the research, development and commercialization of pharmaceutical products;

9.4.3 such Party shall not employ (and, to the Knowledge of it or its Affiliates, shall not use any contractor or consultant that employs) any Person debarred by the FDA (or subject to a similar sanction of EMA or JMHW or equivalent in the Territory), or, to the Knowledge of it or its Affiliates, any Person who is the subject of an FDA debarment investigation or proceeding (or similar proceeding of EMA or JMHW or equivalent in the Territory), in the conduct of its activities under this Agreement. Each Party agrees to inform the other Party in writing immediately if it or any individual or entity that is performing activities under this Agreement is debarred by the FDA (or subject to a similar sanction of EMA or JMHW or equivalent in the Territory) or is the subject of an FDA debarment investigation or proceeding (or similar proceeding of EMA or JMHW or equivalent in the Territory);

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9.4.4 such Party shall not (a) enter into any agreement, instrument or understanding, oral or written, with any Third Party or (b) grant any license to any Third Party relating to any of the intellectual property rights it Controls, in each case (a) or (b) which would conflict or interfere with any of the rights or licenses granted to the other Party hereunder;

9.4.5 such Party shall ensure that the FATE Intellectual Property as to FATE or ONO Intellectual Property as to ONO, as the case may be, will be free and clear of liens, charges or encumbrances other than (a) licenses granted to or by Third Parties that are not inconsistent with the rights and licenses granted to the other Party hereunder or (b) any other liens, charges or encumbrances that do not affect the other Party's rights hereunder; and

9.4.6 FATE shall not take any action or fail to take any action that would be reasonably likely to result in a breach of any Existing Agreement or any other agreement under which FATE receives a license for FATE Intellectual Property and ONO shall not take any action or fail to take any action that would be reasonably likely to result in a breach of any agreement under which ONO receives a license for ONO Intellectual Property. In case a Party receives from the counter party of such Existing Agreement or any other agreement, as applicable, any notice of alleged breach thereof, such Party shall immediately so notify the other Party in writing. In this case, [*******].

9.5 DISCLAIMERS.

9.5.1 EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, FATE MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ANY FATE CONFIDENTIAL INFORMATION OR ANY LICENSE GRANTED BY FATE UNDER ITS INTELLECTUAL PROPERTY RIGHTS HEREUNDER, OR WITH RESPECT TO ANY ANTIGEN BINDING DOMAIN, COLLABORATION CANDIDATES OR COLLABORATION PRODUCTS. NOTHING IN THIS AGREEMENT SHALL BE CONSTRUED AS A REPRESENTATION OR WARRANTY THAT USE OF THE FATE CONFIDENTIAL INFORMATION, OR ANY LICENSE GRANTED BY FATE UNDER ITS INTELLECTUAL PROPERTY RIGHTS, HEREUNDER DOES NOT INFRINGE ANY PATENT OR OTHER INTELLECTUAL PROPERTY RIGHTS OF ANY THIRD PARTY, OR THAT ANY PATENT OR OTHER PROPRIETARY RIGHTS INCLUDED IN THE FATE PATENTS ARE VALID OR ENFORCEABLE.

9.5.2 EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, ONO MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ANY ONO CONFIDENTIAL INFORMATION OR ANY LICENSE GRANTED BY ONO UNDER ITS INTELLECTUAL PROPERTY RIGHTS HEREUNDER, OR WITH RESPECT TO ANY ANTIGEN BINDING DOMAIN, COLLABORATION CANDIDATES OR COLLABORATION PRODUCTS. NOTHING IN THIS AGREEMENT

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SHALL BE CONSTRUED AS A REPRESENTATION OR WARRANTY THAT USE OF THE ONO CONFIDENTIAL INFORMATION, OR ANY LICENSE GRANTED BY ONO UNDER ITS INTELLECTUAL PROPERTY RIGHTS, HEREUNDER DOES NOT INFRINGE ANY PATENT OR OTHER INTELLECTUAL PROPERTY RIGHTS OF ANY THIRD PARTY, OR THAT ANY PATENT OR OTHER PROPRIETARY RIGHTS INCLUDED IN THE ONO PATENTS ARE VALID OR ENFORCEABLE.

9.6 LIMITATION OF LIABILITY. EXCEPT FOR A BREACH OF ARTICLE 8 (CONFIDENTIALITY) OR [*******]OR FOR CLAIMS OF A THIRD PARTY THAT ARE SUBJECT TO INDEMNIFICATION UNDER ARTICLE 10 (INDEMNITY AND INSURANCE) OR FOR DAMAGES RESULTING FROM WILLFUL MISCONDUCT OR GROSS NEGLIGENCE, NEITHER PARTY SHALL BE LIABLE TO THE OTHER WITH RESPECT TO ANY SUBJECT MATTER OF THIS AGREEMENT, WHETHER UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY, FOR ANY INCIDENTAL, INDIRECT, SPECIAL, EXEMPLARY, PUNITIVE, MULTIPLE, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS, LOSS OF USE, DAMAGE TO GOODWILL, LOSS OF OPPORTUNITIES, OR LOSS OF BUSINESS).

ARTICLE 10
INDEMNITY AND INSURANCE

10.1 ONO Indemnity. ONO shall indemnify, defend and hold harmless FATE and its Affiliates, and their respective officers, directors, employees, agents, Sublicensees, and their respective successors, heirs and assigns and representatives, (the "FATE Indemnitees"), from and against any and all claims, threatened claims, damages, losses, suits, proceedings, liabilities, costs (including without limitation reasonable legal expenses, costs of litigation and reasonable attorney's fees) or judgments, whether for money or equitable relief, of any kind brought by a Third Party ("Losses and Claims"), to the extent arising out of or relating to, directly or indirectly: (a) the negligence, recklessness or wrongful intentional acts or omissions of ONO, its Affiliates, and/or its Sublicensees and its or their respective directors, officers, employees and agents, in connection with ONO's performance of its obligations or exercise of its rights under this Agreement; (b) any breach by ONO of any representation, warranty, or covenant set forth in Article 9 (Representations, Warranties, and Covenants; Disclaimers; Limitation of Liability); (c) (x) [*******] (ii) the failure to comply with Laws; except in any such case for Losses and Claims to the extent reasonably attributable to any of the clause (a), (b) or (c) of Section 10.2 (FATE Indemnity).

10.2 FATE Indemnity. FATE shall indemnify, defend and hold harmless ONO and its Affiliates, and their respective officers, directors, employees, agents, Sublicensees, and their respective successors, heirs and assigns and representatives (the "ONO Indemnitees"), from and against any and all Losses and Claims, to the extent arising out of or relating to, directly or indirectly: (a) the negligence, recklessness or wrongful intentional acts or omissions of FATE, its Affiliates, and/or its Sublicensees and its or their respective directors, officers, employees and agents, in connection with FATE's performance of its obligations or exercise of its rights under

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this Agreement; (b) any breach by FATE of any representation, warranty, or covenant set forth in Article 9 (Representations, Warranties, and Covenants; Disclaimers; Limitation of Liability); (c) [***] (ii) the failure to comply with Laws; except in any such case for Losses and Claims to the extent reasonably attributable to any of the clause (a), (b) or (c) of Section 10.1 (ONO Indemnity).

10.3 Indemnification Procedure. A claim to which indemnification applies under Section 10.1 (ONO Indemnity) or Section 10.2 (FATE Indemnity) shall be referred to herein as an "Indemnification Claim". If any Person or Persons (collectively, the "Indemnitee") intends to claim indemnification under this Article 10 (Indemnity and Insurance), the Indemnitee shall notify the other Party (the "Indemnitor") in writing promptly upon becoming aware of any claim that may be an Indemnification Claim (it being understood and agreed, however, that the failure by an Indemnitee to give such notice shall not relieve the Indemnitor of its indemnification obligation under this Agreement except and only to the extent that the Indemnitor is actually prejudiced as a result of such failure to give notice). The Indemnitor shall have the right to assume and control the defense of the Indemnification Claim at its own expense with counsel selected by the Indemnitor and reasonably acceptable to the Indemnitee; provided, however, that an Indemnitee shall have the right to retain its own counsel, with the fees and expenses to be paid by the Indemnitor, if representation of such Indemnitee by the counsel retained by the Indemnitor would be inappropriate due to actual or potential differing interests between such Indemnitee and any other party represented by such counsel in such proceedings. If the Indemnitor does not assume the defense of the Indemnification Claim as described in this Section 10.3 (Indemnification Procedure), above, the Indemnitee may defend the Indemnification Claim at Indemnitor's expense (subject to Sections 10.1 (ONO Indemnity) and 10.2 (FATE Indemnity)) but shall have no obligation to do so. Neither the Indemnitor nor the Indemnitee shall admit fault on behalf of the other Party without the written consent of such other Party. The Indemnitee shall not settle or compromise the Indemnification Claim without the prior written consent of the Indemnitor, and the Indemnitor shall not settle or compromise the Indemnification Claim in any manner which would have an adverse effect on the Indemnitee's interests (including without limitation any rights under this Agreement or the scope, exclusivity, duration or enforceability of the intellectual property or Confidential Information or Patent or other rights granted or licensed to the Indemnitee hereunder), without the prior written consent of the Indemnitee, which consent, in each case, shall not be unreasonably withheld, delayed or conditioned. The Indemnitee shall reasonably cooperate with the Indemnitor at the Indemnitor's expense and shall make available to the Indemnitor all pertinent information under the control of the Indemnitee, which information shall be subject to Article 8 (Confidentiality), and cause its employees to be available in a deposition, hearing or trial.

10.4 Mitigation of Losses. The Indemnitee shall take all commercially reasonable steps to mitigate and otherwise reduce their Losses and Claims subject to indemnification by the other Party.

10.5 FATE CDCC Territory. Notwithstanding the foregoing, during the CDCC Term, the Parties shall [***] all damages, losses, liabilities, costs (including without limitation reasonable legal expenses, costs of litigation and reasonable attorney's fees) and judgments arising out of

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Third Party claims, suits and proceedings, to the extent arising out of or relating to, directly or indirectly, [*******] by or for either Party or any of their respective Affiliates, Sublicensees, agents and contractors; except in any such case for Losses and Claims to the extent covered under Section 10.1 (ONO Indemnity) or Section 10.2 (FATE Indemnity), where the applicable indemnification obligations shall continue to apply. With respect to the damages, losses, liabilities, costs (including without limitation reasonable legal expenses, costs of litigation and reasonable attorney's fees) and judgments arising out of Third Party claims, suits and proceedings, [***] Section 10.1 (ONO Indemnity) or Section 10.2 (FATE Indemnity) shall apply.

10.6 Insurance.

10.6.1 By ONO. ONO shall acquire and maintain, at its own expense, insurance or self- insurance, as reasonably necessary to cover its own product liability and its obligations under this Agreement. Within [***] days following written request from FATE, ONO shall furnish to FATE a certificate of insurance evidencing such coverage.

10.6.2 By FATE. FATE shall, beginning on the Effective Date, maintain at all times thereafter during the Term, and for [***] after termination or expiration of this Agreement, commercial general liability insurance from a recognized, creditworthy insurance company, on an "occurrence basis" which includes contractual liability coverage; and upon initiation of the first Clinical Trial of a Collaboration Product, product liability insurance, on a "claims-made basis" with coverage limits of at least [***] Dollars ($[***]) per claim and annual aggregate, where such coverage limits shall be increased to at least [***] Dollars ($[***]) before FATE initiates the First Commercial Sale of any Collaboration Product. Within [***] days following written request from ONO, FATE shall furnish to ONO a certificate of insurance evidencing such coverage. In the case of a material modification or cancellation of such coverage, FATE shall promptly provide ONO with a new certificate of insurance evidencing that FATE's coverage meets the requirements of this **Section 10.6.2**.

ARTICLE 11
TERM AND TERMINATION

11.1 Term; Expiration. This Agreement shall become effective as of the Effective Date and shall continue in full force and effect until expiration as described in this Section 11.1 (Term; Expiration), unless earlier terminated pursuant to Section 11.2 (Termination for Cause), [*******], Section 11.4 (Termination for Insolvency), or Section 11.5 (Termination for Patent Challenge) (the "Term"), and shall expire as follows:

11.1.1 on a Collaboration Product-by-Collaboration Product and country-by-country basis, on the date of expiration of all royalty payment obligations of the applicable Party(ies) under this Agreement with respect to each Collaboration Product in each country, as applicable (which, for clarity, will continue for [***] in any country in the [***] Territory for so long as such product is being sold in such country during the CDCC Term for such country); or

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11.1.2 in its entirety upon the expiration of all payment obligations under this Agreement with respect to all Collaboration Products in all countries in the Territory.

Upon the expiration of this Agreement pursuant to this **Section 11.1** on a Collaboration Product- by-Collaboration Product and country-by-country basis, the licenses granted by FATE to ONO under **Section 5.1.2 (Licenses upon Exercise of ONO Option** [***]**)** or **Section 5.1.3 (Licenses upon Exercise of ONO Option** [***]**)**, as applicable, shall become fully paid-up, irrevocable and perpetual, and ONO may continue to Research, Develop and Commercialize the relevant Collaboration Product without owing any milestone or royalty payment to FATE.

11.2 Termination for Cause.

11.2.1 Material Breach. Either Party (the "Non-breaching Party") may, without prejudice to any other remedies available to it at law or in equity, terminate this Agreement in its entirety, or terminate this Agreement as to any specific one or more Collaboration Candidates or Collaboration Products that are affected by a material breach, as it shall determine in its sole discretion, in the event the other Party (the "Breaching Party") has materially breached this Agreement, and such breach has continued for [***] days (the "Cure Period") after written notice thereof is provided to the Breaching Party by the Non-breaching Party describing the alleged material breach in sufficient detail to put the Breaching Party on notice. Notwithstanding the foregoing, the Cure Period in connection with a material breach of Article 6 (Financial Terms) shall be [***] days. Any termination by the Non-breaching Party as to any specific Collaboration Candidates or Collaboration Products that are affected by a material breach pursuant to this Section 11.2.1 shall not affect the Breaching Party's rights to be exercised and obligations to be performed under this Agreement as to Collaboration Candidates and Collaboration Products other than such terminated Collaboration Candidates or Collaboration Products.

11.2.2 Cure Period. Any termination of this Agreement under this Section 11.2 shall become effective at the end of the Cure Period, unless the Breaching Party has cured any such breach or default prior to the expiration of such Cure Period, or, if such breach is not susceptible to cure within the Cure Period, then, the Non-breaching Party's right to termination shall be suspended only if and for so long as the Breaching Party has provided to the Non-breaching Party a written plan that is reasonably calculated to effect a cure and such plan is acceptable to the Non-breaching Party, and the Breaching Party commits to and does carry out such plan as provided to the Non-breaching Party. The right of either Party to terminate this Agreement, or as to all Collaboration Candidates or Collaboration Products to which such material breach relates, as provided for in this Section 11.2, shall not be affected in any way by such Party's waiver or failure to take action with respect to any previous default.

11.2.3 Disagreement as to Material Breach. If the Parties reasonably and in good faith disagree as to whether there has been a material breach, the Party that disputes that there has been a material breach may contest the allegation in accordance with Section 12.3 (Arbitration). It is understood and acknowledged that, during the pendency of such a dispute, all of the terms and conditions of this Agreement shall remain in effect, and the Parties shall continue to perform

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all of their respective obligations under this Agreement. Any payments that are made by one Party to the other Party pursuant to this Agreement pending resolution of the dispute shall be promptly refunded if the arbitrator determines pursuant to Section 12.3 (Arbitration) that such payments are to be refunded by one Party to the other Party.

11.3 [***]. This Agreement may be terminated as follows:

11.3.1 [***]

11.3.2 [***]

11.3.3 This Agreement will terminate on a Collaboration Candidate-by-Collaboration Candidate basis, if ONO does not exercise its ONO Option with respect to a specific Collaboration Candidate within the relevant ONO Option Period therefor, upon the expiration of such ONO Option Period;

11.3.4 This Agreement will terminate in its entirety if ONO does not exercise any of its ONO Options within the respective ONO Option Periods therefor, upon the last to expire ONO Option Period; or

11.3.5 This Agreement will terminate with respect to Collaboration Candidate 2 and Collaboration Product 2 if (a) [***] (or the end of any extended period that is mutually agreed by the Parties); (b) the Parties [***] pursuant to [***]; and (c) [***].

11.4 Termination for Insolvency. Either Party may terminate this Agreement, if, at any time, the other Party files in any court or agency pursuant to any statute or regulation of any state or country, a petition in bankruptcy or insolvency or for reorganization or for an arrangement or for the appointment of a receiver or trustee of the Party or of substantially all of its assets, or if the other Party is served with an involuntary petition against it, filed in any insolvency proceeding, and such other Party consents to the involuntary bankruptcy or such petition is not dismissed within [***] days after the filing thereof, or if the other Party shall propose or be a party to any dissolution or liquidation, or if the other Party shall make an assignment of substantially all of its assets for the benefit of creditors. All rights and licenses granted under or pursuant to any Section of this Agreement are and shall otherwise be deemed to be for purposes of Section 365(n) of Title 11, United States Code or any foreign equivalent thereof (the "Bankruptcy Code") licenses of rights to "intellectual property" as defined in Section 101 (56) of the Bankruptcy Code. The Parties shall retain and may fully exercise all of their respective rights, licenses and elections granted herein under the Bankruptcy Code. Upon the bankruptcy of any Party, the non-bankrupt Party shall further be entitled to a complete duplicate of, or complete access to, any such intellectual property, and such, if not already in its possession, shall be promptly delivered to the non-bankrupt Party, unless the bankrupt Party elects to continue, and continues, to perform all of its obligations under this Agreement.

11.5 Termination for Patent Challenge. [***]

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11.6 Consequences of Termination. All of the following effects of termination are in addition to the other rights and remedies that may be available to the Parties at law or in equity. If this Agreement is terminated with respect to one or more Collaboration Candidates or Collaboration Products but not in its entirety, such effects will apply only to the terminated Collaboration Candidates or Collaboration Products.

11.6.1 [***]. In the event of (i) termination of this Agreement pursuant to [***]; or (ii) [***]:

(a) (i) Subject to **Section 11.6.1(e)**, upon ONO providing, or receiving from FATE, as applicable, termination notice, ONO shall responsibly wind-down any on-going Research, Development or Commercialization of terminated Collaboration Candidates or Collaboration Products at its sole cost, (ii) notwithstanding anything contained in this Agreement to the contrary, upon termination of this Agreement, all rights (including without limitation all ONO Options) and licenses granted herein to ONO with respect to Collaboration Candidates and Collaboration Products (if ONO has exercised any ONO Options) for which this Agreement is terminated shall terminate, and ONO shall immediately cease any and all Research, Development, and Commercialization activities with respect to the terminated Collaboration Candidates and Collaboration Products, subject to sub-section (d) and (e) below;

(b) all payment obligations hereunder with respect to the terminated Collaboration Candidates and Collaboration Products shall terminate, other than those that are accrued and unpaid as of the effective date of such termination;

(c) the terminated Collaboration Candidates and Collaboration Products shall be deemed to be FATE Cell Therapies, and FATE shall have the right, in its sole discretion, to research, develop and commercialize the applicable FATE Cell Therapies, alone or with or through any Affiliate or Third Party;

(d) the license set forth in **Section 5.3.1 (Enabling License)** shall survive with respect to the terminated Collaboration Candidates and Collaboration Products and become perpetual. In addition, ONO hereby grants to FATE, effective upon such termination, a non- exclusive, non-transferable (except as provided in **Section 13.4 (Assignment)**), perpetual license (or sublicense, as applicable) in the terminated Territory, with the right to grant sublicenses through multiple tiers, under the ONO Intellectual Property [***] solely to research, make, have made, use, sell, offer to sell, promote, distribute, import, export, label, package and otherwise develop and commercialize such FATE Cell Therapy, including through the use of Third Party contractors. Such license shall be royalty-bearing as and to the extent provided in sub-section (j) below;

(e) if ONO is conducting a Clinical Trial of any terminated Collaboration Product at the effective date of termination, then at FATE's discretion but under consultation with ONO, ONO will either: [***]

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(f) ONO shall promptly (i) transfer to FATE, at FATE's request and at no cost to FATE, any and all Know-How pertaining to the applicable FATE Cell Therapy in its possession that is necessary or useful for FATE's research, development or commercialization of the applicable FATE Cell Therapy in the ONO Territory (including the FATE CDCC Territory), including copies of all Clinical Trial data and results, (ii) assign to FATE all agreements with Third Parties relating solely and exclusively to the Development, promotion, distribution, sale or use of such FATE Cell Therapy, to the extent permitted under such agreements, subject to any required consents of such Third Party, and (iii) [***] provide FATE with the benefit of such agreements. In addition, ONO shall have the right to transfer to FATE Materials, Collaboration Candidates and Collaboration Products in its possession at the price [***];

(g) ONO shall otherwise cooperate with FATE to provide a smooth transfer of the Know-How, data, information, and Materials necessary or useful for FATE's research, development or commercialization of the applicable FATE Cell Therapy in the ONO Territory (including the FATE CDCC Territory), such transfer to be completed within [***] days after such termination becomes effective, and shall promptly, at FATE's election, return to FATE or destroy, and provide written certification of such destruction, all data and Materials transferred by FATE to ONO under this Agreement with respect to the terminated Collaboration Candidates and Collaboration Products;

(h) ONO shall assign to all FATE rights in and to any and all trademarks that ONO has used, or registered for use for the applicable FATE Cell Therapy that is the subject of termination pursuant to this **Section 11.6.2** in the terminated country in the ONO Territory (including the FATE CDCC Territory) (but not any ONO house marks or any trademark containing the word "**ONO**" owned by ONO);

(i) ONO shall promptly assign to FATE any and all Regulatory Filings and Marketing Approvals related to the applicable FATE Cell Therapy that is the subject of termination pursuant to this **Section 11.6.2** in the terminated country in the ONO Territory (including the FATE CDCC Territory) that are held or controlled by or under authority of ONO or its Affiliates or Sublicensees as of the effective date of termination, and shall take such actions and execute such other instruments, assignments and documents as may be necessary to effect the transfer of rights under such Regulatory Filings and Marketing Approvals to FATE. ONO shall cause each of its Sublicensees to transfer any such Regulatory Filings and Marketing Approvals to FATE. If applicable Law prevents or delays the transfer of ownership of any Regulatory Filing or Marketing Approvals to FATE, ONO shall grant, and does hereby grant, to FATE an exclusive and irrevocable right of access and reference to such Regulatory Filing and Marketing Approvals for the applicable FATE Cell Therapy, and shall cooperate fully to make the benefits of such Regulatory Filings and Marketing Approvals available to FATE or its designee(s). Within [***] days after the effective date of termination, ONO shall provide to FATE copies of all such Regulatory Filings and Marketing Approvals. FATE shall be free to use and disclose such Regulatory Filings, Marketing Approvals and data therein solely in connection with the exercise of its rights and licenses under this Agreement;

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(j) in consideration for the rights granted to FATE with respect to the applicable FATE Cell Therapy pursuant to this **Section 11.6.1**, FATE shall pay to ONO milestones on the achievement of the applicable development event or royalties on Net Sales of FATE Cell Therapy as follows, and any applicable definitions from **Article 1** and **Article 6**, shall apply to such payments, *mutatis mutandis*:

(i) for FATE Cell Therapy containing [***]

(ii) for FATE Cell Therapy containing [***]

(iii) for FATE Cell Therapy containing [***]

(iv) for FATE Cell Therapy containing [***]

(v) for FATE Cell Therapy containing [***]

(vi) Upon the expiration of all such payment obligations on a Fate Cell Therapy-by-Fate Cell Therapy and country-by-country basis, the licenses granted by ONO to FATE under **Section 5.3.2(a)** (**License for Collaboration Candidates and Products**) shall be fully paid-up, perpetual and irrevocable for the applicable FATE Cell Therapy in the applicable country, and FATE may continue to research, develop or commercialize the relevant FATE Cell Therapy in such country without owing any milestone or royalty payment to ONO;

(k) within [***] days after the effective date of termination of this Agreement, ONO shall destroy all Confidential Information of FATE that are in ONO's or its Affiliates' possession, and provide written certification of such destruction, or prepare such tangible items of Confidential Information for shipment to FATE, as FATE may direct, at FATE's expense; provided that ONO may retain one (1) copy of such Confidential Information for its legal archives; and

(l) if this Agreement is terminated by FATE pursuant to **Section 11.2** (**Termination for Cause**) or **Section 11.5** (**Termination for Patent Challenge**), then notwithstanding anything to the contrary herein, ONO’s obligations under [***].

11.6.2 [***]. In the event of termination of this Agreement [***]:

(a) ONO shall elect, in its termination notice to FATE, either (i) [***] or (ii) for the following effects of termination to apply:

(b) all licenses granted to ONO with respect to any terminated Collaboration Product for which ONO previously exercised its ONO Option in accordance with **Section 2.4.3 (Option Exercise)** shall continue in full force in accordance with the terms and conditions of this Agreement, and such terminated Collaboration Product will not become a FATE Cell Therapy;

(c) if this Agreement is terminated by ONO pursuant to **Section 11.2 (Termination for Cause)** for FATE's uncured material breach (other than breach of **Article 3 (Manufacturing and Supply)**, the consequences of which will be set forth in the Supply

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Agreements) during the Research Term with respect to a Collaboration Candidate, and ONO elects **Section 11.6.2(a)(ii)**, then (i) [***] and (ii) [***]

(d) if this Agreement is terminated by ONO pursuant to **Section 11.2 (Termination for Cause)** for FATE's uncured material breach (other than breach of **Article 3 (Manufacturing and Supply)**, the consequences of which will be set forth in the Supply Agreements) with respect to a Collaboration Product subsequent to the Exercise Date of such Collaboration Product, and ONO elects **Section 11.6.2(a)(ii)**, then [***]

(e) all ONO Options that are pending as of the effective date of such termination by ONO shall continue under their terms in **Section 2.4.1 (Exclusive Option Right)**, ONO shall have the right to exercise any ONO Options that are so pending, and at ONO's request, FATE shall continue to conduct the Research and Development activities allocated to FATE under the Joint Development Plan during the Research Term, [***]. If ONO exercises any such ONO Option, all licenses to be granted to ONO with respect to a Collaboration Candidate and the relevant Collaboration Product for which ONO exercises its ONO Option under **Section 2.4.3 (Option Exercise)** shall continue in full force, subject to the terms and conditions of this Agreement including **Sections 11.6.2(c)** and **(d)** above, and FATE shall continue to manufacture such Collaboration Candidate and Collaboration Product under the Supply Agreements;

(f) FATE shall promptly return to ONO all data and Materials transferred by ONO to FATE under this Agreement with respect to the terminated Collaboration Candidates and Collaboration Products, except for any data and Materials to which FATE retains a license pursuant to sub-section (h) below;

(g) **Article 3 (Manufacture and Supply), Article 6 (Financial Terms) and Article 7 (Intellectual Property)** shall survive unless otherwise expressly provided in this Agreement;

(h) if the termination is with respect to [***] or [***], or the Agreement in its entirety, then the CDCC Term shall terminate, and FATE shall immediately cease any and all clinical Development and Commercialization activities with respect to [***] and [***] in the [***] Territory. FATE will continue to manufacture such [***] and [***] under the Supply Agreements, and shall conduct all activities necessary to transfer all responsibilities of FATE with respect to the Development and Commercialization (but not manufacture) of terminated [***] to ONO, which may include assigning Regulatory Filings and Third Party contracts from FATE to ONO, [***]

(i) this Agreement is terminated by ONO pursuant to **Section 11.2** (**Termination for Cause**) or **Section 11.5** (**Termination for Patent Challenge**), then notwithstanding anything to the contrary herein, FATE's obligations under [***]; and

(j) FATE shall assign to ONO rights in and to any and all trademarks that FATE has used, or registered for use for the Collaboration Product that is the subject of

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termination pursuant to this **Section 11.6.2** in the terminated country (but not any FATE house marks or any trademark containing the word "FATE" owned by FATE).

11.7 Public Disclosure of Termination. In the event of termination of this Agreement for any reason, the Parties shall cooperate in good faith to coordinate public disclosure of such termination and the reasons therefor, and shall not, except to the extent required by applicable Law or the rules of a recognized stock exchange, disclose such information without the prior approval of the other Party, such approval not to be unreasonably withheld, conditioned or delayed. To the extent possible under the situation, the Party desiring to make such public disclosure shall provide the other Party with a draft of any such public disclosure it intends to issue [***] Business Days in advance and with the opportunity to review and comment on such statement, it being understood that if the other Party does not notify the desiring Party in writing within such [***] Business Day period (or such shorter period if required by applicable Law or and the rules of a recognized stock exchange and, in each case as notified to the other Party in writing) of any reasonable objections, such disclosure shall be deemed approved, and in any event the Parties shall work diligently and reasonably to agree on the text of any such proposed disclosure in an expeditious manner. The principles to be observed in such disclosures shall be accuracy, compliance with applicable Law and regulatory guidance documents, reasonable sensitivity to potential negative reactions to such news and the need to keep investors and others informed regarding the Parties' business and other activities. Accordingly in such situation, the other Party shall not withhold, condition or delay its approval of a proposed disclosure that complies with such principles.

11.8 Survival. Unless otherwise expressly provided herein, the following provisions shall survive termination or expiration of this Agreement in its entirety, as well as any other provision which by its terms or by the context thereof, is intended to survive such termination: Article 1 (Definitions), Article 6 (Financial Terms) (solely with respect to unpaid payments that have accrued prior to the effective date of such termination or expiration, except as otherwise provided in this Article 11), Article 7 (Intellectual Property), Article 8 (Confidentiality) (for the period set forth in Section 8.1), Article 10 (Indemnity and Insurance), Article 12 (Dispute Resolution), Section 2.2.3(d) (Subcontracting), Section 5.3.2(a) (License for Collaboration Candidates and Products, subsection (a)), [***], Section 5.8.1 (No Implied Licenses, Retained Rights), [***], Section 9.5 (DISCLAIMERS), Section 9.6 (LIMITATION OF LIABILITY), Section 11.6 (Consequences of Termination), Section 11.7 (Public Disclosure of Termination), Section 11.8 (Survival), Section 13.1(Severability), Section 13.2 (Notices), Section 13.4.1 (Assignment), Section 13.4.2 (Assignment), Section 13.4.4 (Assignment), Section 13.6 (Waivers), Section 13.7 (Governing Law), Section 13.8 (Relationship of the Parties), Section 13.9 (Third Party Beneficiary), Section 13.10 (Entire Agreement; Amendment; Exhibit), Section 13.11 (Exports), Section 13.12 (Interpretation; Headings), Section 13.14 (Performance by Affiliates), and Section 13.16 (Counterparts; Electronic Delivery). Termination or expiration of this Agreement shall not relieve the Parties of any liability or obligation which accrued hereunder prior to the effective date of such termination or expiration nor preclude either Party from pursuing all rights and remedies it may have hereunder or at law or in equity, subject to Article 12 (Dispute Resolution), with respect to any breach of this Agreement nor prejudice either Party's right to obtain performance of any obligation. All other rights, licenses and obligations shall terminate upon expiration of this Agreement.

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ARTICLE 12
DISPUTE RESOLUTION

12.1 Exclusive Dispute Resolution Mechanism. The Parties agree that, except as expressly set forth in Section 4.1.8 (Decision-Making; Limitations on JSC) with respect to certain disputes at the JSC that are not subject to arbitration under Section 12.3 (Arbitration), the procedures set forth in this Article 12 (Dispute Resolution) shall be the exclusive mechanism for resolving any dispute, controversy, or claim between the Parties that may arise from time to time pursuant to, arising out of or in connection with this Agreement, including but not limited to any Party's rights and/or obligations hereunder or any questions regarding the formation, existence, validity, enforceability, performance, interpretation, tort, breach or termination hereof (collectively, "Disputes") that cannot be resolved through good faith negotiation between the Parties.

12.2 Resolution by Executive Officers. Except as otherwise provided in this Agreement, in the event of any Dispute, the Parties shall first attempt in good faith to resolve such Dispute by negotiation and consultation between themselves through the JSC. In the event that such Dispute is not resolved through the JSC within [*******] days of its reference to the JSC, either Party may, by written notice to the other Party, refer the Dispute to the other Party for attempted resolution by good faith negotiation between the Executive Officers within [***] days after such notice is received. Except as set forth in Sections 12.4 (Preliminary Injunctions) and 12.5 (Patent Disputes), and except with respect to the matters for which a Party has final decision- making authority or that are not subject to Section 12.3 (Arbitration) as set forth in Section 4.1.8 (Decision-Making; Limitations on JSC), if any Dispute is not resolved by the Executive Officers within the above [***] period, each Party may, in its sole discretion, seek resolution of such Dispute in accordance with Section 12.3 (Arbitration), and each Party hereby expressly waives its right to seek resolution of such Dispute in a court of competent jurisdiction.

12.3 Arbitration.

12.3.1 Subject to **Section 12.2 (Resolution by Executive Officers)**, Disputes that are not resolved by the Executive Officers in accordance with **Section 12.2 (Resolution by Executive Officers)** shall be finally settled by arbitration under the Rules of Arbitration of the International Chamber of Commerce ("**ICC Rules**") in force on the date on which the notice of arbitration is submitted in accordance with the ICC Rules.

12.3.2 Each Party shall nominate one (1) arbitrator, and the two (2) Party-nominated arbitrators shall nominate a third arbitrator, who shall act as a chairperson, each with relevant industry or legal experience, to constitute a panel of three (3) arbitrators to conduct the arbitration in accordance with the ICC Rules. The Emergency Arbitrator Provisions and the Expedited Procedure Provisions described in the ICC Rules shall not apply.

12.3.3 The place of arbitration shall be [*******] if such arbitration is demanded by ONO, and [***] if demanded by FATE, and the language used in any such proceeding (including the testimony) shall be English. Any written evidence to be submitted to the panel originally in a language other than English shall be submitted in English translation accompanied by the original or a true copy or electric data or source thereof only in the case required so by the panel, at the cost of the Party providing such evidence, subject to the arbitrators' award under sub-section (g) below.

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12.3.4 In such arbitration the governing law to be applied is as described in **Section 13.7 (Governing Law)**. The International Bar Association Rules on the Taking of Evidence in International Commercial Arbitration shall govern the taking of evidence in any such proceeding, it being the intent of the Parties to enable a reasonable and practicable amount of discovery in any such proceeding.

12.3.5 The Parties acknowledge that they desire for any arbitration to be conducted in an efficient, speedy and economical manner. The Parties shall use good faith efforts to complete arbitration under this **Section 12.3 (Arbitration)** [***]. In order to effectuate this desire, the arbitrators shall establish procedures reasonably directed to facilitating such goals and completing such arbitration [***].

12.3.6 The decision or award of the arbitrators shall be final, binding, and incontestable and may be used as a basis for judgment thereon in any jurisdiction, and may be entered in any court having jurisdiction thereof. To the full extent permissible under Laws, the Parties hereby expressly agree to waive the right to appeal from the decision of the arbitrators, and agree that there shall be no appeal to any court or other authority (government or private) from the decision of the arbitrators, and the Parties shall not dispute nor question the validity of such decision or award before any regulatory or other authority in any jurisdiction where enforcement action is taken by the Party in whose favor the decision or award is rendered, except in the case of fraud. The arbitrators shall, upon the request of any Party, issue a written opinion of the findings of fact and conclusions of law and shall deliver a copy to each of the Parties. Without limiting any other remedies that may be available under Laws, the arbitrators shall have no authority to award punitive, special, consequential, or any other similar form of damages.

12.3.7 Each Party shall bear [***], and the Parties shall [***]; provided, however, that the arbitrators may exercise discretion to award arbitration costs and translation costs, excluding attorney's fees, to the prevailing Party.

12.4 Preliminary Injunctions. Notwithstanding anything in this Agreement to the contrary, a Party may seek a temporary restraining order or a preliminary injunction from any court of competent jurisdiction in order to prevent immediate and irreparable injury, loss, or damage on a provisional basis, pending the decision of the arbitrator(s) on the ultimate merits of any Dispute.

12.5 Patent Disputes. Notwithstanding anything in this Agreement to the contrary, any and all issues regarding the scope, construction, validity, and enforceability of any patent in a country within the Territory shall be determined in a court or other tribunal, as the case may be, of competent jurisdiction under the applicable patent laws of such country.

12.6 Confidentiality. Any and all activities conducted under Sections 12.1 (Exclusive Dispute Resolution Mechanism) through 12.3 (Arbitration), including without limitation any and all proceedings and decisions of arbitrator(s) under Section 12.3 (Arbitration), shall be deemed Confidential Information of each of the Parties, and shall be subject to Article 8 (Confidentiality).

12.7 [***].

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ARTICLE 13
MISCELLANEOUS

13.1 Severability. If any one or more of the provisions of this Agreement is held to be invalid, illegal or unenforceable, the provision shall be considered severed from this Agreement and shall not serve to invalidate any remaining provisions hereof. The Parties shall make a good faith effort to replace any invalid, illegal or unenforceable provision with a valid, legal and enforceable one such that the objectives contemplated by the Parties when entering this Agreement may be realized.

13.2 Notices. Any notice required or permitted to be given by this Agreement shall be in writing and in English and shall be (a) delivered by hand or overnight courier with tracking capabilities or (b) mailed postage prepaid by first class, registered or certified mail addressed as set forth below unless changed by notice so given:

If to ONO:

Ono Pharmaceutical Co., Ltd. Minase Research Institute
1-1, Sakurai 3-chome, Shimamoto-cho, Mishima-gun, Osaka 618-8585, Japan

Attention: [***]

With a copy to:

Ono Pharmaceutical Co., Ltd.
8-2, Kyutaromachi 1-chome
Chuo-ku, Osaka, Osaka 541-8564, Japan

Attention: [***]

If to FATE:

Fate Therapeutics, Inc.
3535 General Atomics Court
Suite 200
San Diego, California 92121

Attention: Chief Executive Officer

Any such notice shall be deemed given (a) on the date received if delivered in accordance with **Section 13.2(a)**, or (b) five (5) Business Days after mailing if mailed in accordance with **Section 13.2(b)**. A Party may add, delete, or change the person or address to which notices should be sent at any time upon written notice delivered to the Party's notices in accordance with this **Section 13.2 (Notices)**. It is understood and agreed that this **Section 13.2** does not intend to

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govern day-to-day business communications necessary between the Parties in performing their duties under the terms hereof.

13.3 Force Majeure. Neither Party shall be liable for delay or failure in the performance of any of its obligations hereunder if such delay or failure is due to causes beyond its reasonable control, including without limitation, acts of God, fires, typhoon, floods, earthquakes, tsunami, embargoes, acts of war (whether war be declared or not), terrorism, strikes, lockouts, or other civil unrest, or omissions or delays in acting by any governmental authority ("Force Majeure"); provided, however, that the affected Party promptly notifies the other Party and further provided that the affected Party shall use its Commercially Reasonable Efforts to avoid or remove such causes of non-performance and to mitigate the effect of such occurrence, and shall continue performance with the commercially reasonable dispatch whenever such causes are removed. When such circumstances arise, the Parties shall negotiate in good faith any modifications of the terms of this Agreement that may be necessary or appropriate in order to arrive at an equitable solution.

13.4 Assignment.

13.4.1 Neither this Agreement nor any right or obligation of a Party hereunder may be assigned or transferred by either Party, in whole or in part, without the consent of the other Party, which shall not be unreasonably withheld, delayed or conditioned. Notwithstanding the foregoing, either Party may, without the consent of the other Party, assign or transfer all of its rights and obligations hereunder to an Affiliate or to a Successor by reason of merger or consolidation or sale of all or substantially all of the assets of such Party relating to the Collaboration Candidates or Collaboration Products; provided however, that (a) such assignment or transfer includes, without limitation, all rights and obligations under this Agreement, (b) such Successor or Affiliate shall have agreed in writing, as of the date of such assignment or transfer, to be bound by the terms of this Agreement, and to assume performance of rights and/or obligations hereof, and (c) where this Agreement is assigned or transferred to an Affiliate, the assigning or transferring Party remains responsible for the performance of this Agreement.

13.4.2 Subject to **Section 13.4.1**, this Agreement shall inure to the benefit of and be binding on the Parties' successors and assigns. Any assignment or transfer in violation of the foregoing shall be null and void and wholly invalid, such assignees and transferees in any such assignment or transfer shall acquire no rights whatsoever, and the non-assigning or non- transferring Party shall not be required to recognize such assignment or transfer. In the event that a Party assigns or otherwise transfers this Agreement to an Affiliate of such Party, such Party hereby agrees to be jointly and severally liable with any such Affiliates for the actions of such Affiliates and for any and all amounts that become due and payable hereunder to the other Party.

13.4.3 **[***].**

13.4.4 Notwithstanding anything to the contrary in this Agreement, [***].

13.4.5 [***].

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

13.6 Waivers. The failure or delay of any Party to assert a right hereunder or to insist on the performance of any obligation hereunder shall not be deemed to be a waiver of that right or such obligation. Waiver of any breach of any provision hereof shall not be deemed to be a waiver of any other breach of such provision or any other provision on such occasion or any succeeding occasion. No waiver, modification, or release by either Party of any condition or term in any one or more instances shall be construed as a continuing waiver of such condition or term or of another condition or term. In any event no waiver shall be effective for any purpose hereunder unless such waiver is in writing and signed by a duly authorized officer of the Party granting such waiver.

13.7 Governing Law. This Agreement shall be governed by, enforced, and shall be construed in accordance with [***] without regard to any conflicts of law provision that would result in the application of the Laws of any other country or state. The Parties expressly agree that the United Nations Convention on Contracts for the International Sale of Goods shall not apply to this Agreement.

13.8 Relationship of the Parties. Each Party is an independent contractor under this Agreement. Nothing contained herein is intended or is to be construed so as to constitute FATE and ONO as partners, agents or joint venturers. Neither Party shall have any express or implied right or authority to assume or create any obligations on behalf of or in the name of the other Party or to bind the other Party to any contract, agreement or undertaking with any Third Party.

13.9 Third Party Beneficiary. Except as expressly set forth herein, this Agreement is for the sole benefit of the Parties hereto and their successors and permitted assigns, and there are no express or implied third party beneficiaries hereunder except for Indemnitees specified in Article 10. Nothing in this Agreement shall be construed as giving any Person, other than the Parties and Indemnitees hereto and their successors and permitted assigns, any right, remedy or claim under or in respect of this Agreement or any provision hereof.

13.10 Entire Agreement; Amendment; Exhibit. This Agreement and the attached exhibits constitutes the entire agreement between the Parties as to the subject matter of this Agreement, and supersedes and merges all prior and contemporaneous negotiations, representations, agreements and understandings regarding the same, including the Prior CDAs, subject to Section 8.6 (Relationship to Confidentiality Agreement). No subsequent alteration, amendment, change or addition to this Agreement shall be valid or binding upon the Parties unless in writing and signed by the respective duly authorized officers of each of the Parties. All Exhibits and Schedules are incorporated herein by this reference

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13.11 Exports. Each Party agrees not to export or re-export, directly or indirectly, any information, technical data, the direct product of such data, samples or equipment received or generated under this Agreement in violation of any applicable export control Laws.

13.12 Interpretation; Headings.

13.12.1 Each of the Parties acknowledges and agrees that this Agreement has been diligently reviewed by and negotiated by and between them, that in such negotiations each of them has been represented by competent counsel and that the final agreement contained herein, including the language whereby it has been expressed, represents the joint efforts of the Parties hereto and their counsel. Accordingly, in interpreting this Agreement or any provision hereof, no presumption shall apply against any Party as being responsible for the wording or drafting of this Agreement or any such provision, and ambiguities, if any, in this Agreement shall not be construed against any Party, irrespective of which Party may be deemed to have authored the ambiguous provision.

13.12.2 Unless the context requires otherwise, (a) any definition of or reference to any agreement, instrument or other document herein shall be construed as referring to such agreement, instrument or other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein or therein), (b) any reference to any Laws herein shall be construed as referring to such Laws as from time to time enacted, repealed or amended, (c) any reference herein to any Person shall be construed to include the Person's successors and assigns, (d) all references herein to Articles, Sections, Exhibits or Schedules, unless otherwise specifically provided, shall be construed to refer to Articles, Sections, Exhibits or Schedules of this Agreement and (e) the word "will" shall be construed to have the same meaning and effect as the word "shall". References to any Sections include Sections and subsections that are part of the Section (e.g., a section numbered "Section 2.2(a)" would be part of "Article 2", and references to "Section 2.2(a)" would also refer to material contained in the subsection described as "Section 2.2(a)(i)").

13.12.3 Headings and captions are for convenience only and are not to be used in the interpretation of this Agreement.

13.12.4 Whenever any provision of this Agreement uses the term "including" (or "includes"), such term will be deemed to mean "including without limitation" (or "includes without limitation") and the term "or" is used in the inclusive sense (and/or). "**Herein**," "hereby," "hereunder," "hereof" and other equivalent words refer to this Agreement as an entirety and not solely to the particular portion of this Agreement in which any such word is used. All definitions set forth herein will be deemed applicable whether the words defined are used herein in the singular or the plural.

13.13 Competition Law Filings. Within at least [*******] Business Days of its receipt of written notice from ONO with respect to the Competition Law Filings, as applicable, in connection with (i) the exercise of the ONO Option (alone or in conjunction with the exercise of any options held by ONO) pursuant to Section 2.4.3 (Option Exercise) or (ii) the Opt-Out of FATE CDCC Territory pursuant to

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Section 2.4.4(e) (CDCC Option), at the request of the ONO, FATE will, in consultation and cooperation with ONO, file or submit, and assist ONO with any filing, submission or notification it makes, with or to any governmental entity any Competition Law Filing necessary or advisable in connection with the U.S. Federal Trade Commission (the "FTC") and the U.S. Department of Justice (the "DOJ") under the HSR Act and the appropriate governmental entity under any other applicable Competition Law. Any such Competition Law Filings made by each of ONO and FATE will be in substantial compliance with the requirements of the Competition Laws. Each of ONO and FATE will use its reasonable efforts, and cooperate with each other, to obtain as promptly as practicable all approvals, authorizations, terminations of applicable periods and clearances in connection with the Competition Law Filings, including (a) cooperating and consulting with each other and furnishing to each other or each other's counsel information and reasonable assistance as each may request in connection with the preparation of any Competition Law Filing, (b) giving the other reasonable prior notice of, and the opportunity to review and discuss in advance (including considering in good faith the views of the other), any such Competition Law Filings to be made and, to the extent reasonably practicable, of any communication with, or any responses to inquiries or requests for additional information from, the FTC, the DOJ and any other governmental entity regarding such Competition Law Filings or the transactions contemplated by the ONO Option or the Opt-Out of FATE CDCC Territory, as applicable, (c) permitting the other or the other's counsel to participate in all communications and meetings with any governmental entity to the extent not prohibited by such governmental entity and (d) subject to clauses (b) and (c) of this Section 13.13, responding as promptly as practicable to all requests of any governmental entity and providing all requested information to such governmental entity. ONO and FATE will each [***]; however, [***].

13.14 Performance by Affiliates. Each Party shall always have the right to perform any or all of its obligations and exercise any or all of its rights under this Agreement through any of its Affiliates (but only for so long as such entity remains an Affiliate of such Party), provided that each Party shall remain responsible for the performance of this Agreement and the compliance with the terms and conditions of this Agreement by its Affiliates and any act or omission by an Affiliate of such Party shall constitute an act or omission by such Party.

13.15 Anti-Corruption. Each Party shall conduct and cause its Affiliates to conduct, and shall use Commercially Reasonable Efforts to cause its Sublicensees, contractors and consultants to conduct, all of its activities contemplated under this Agreement in accordance with all applicable Laws of the country in which such activities are conducted, as well as the US Foreign Corrupt Practices Act and the UK Bribery Act 2010. In addition, each Party shall not, shall ensure that its Affiliates do not, and shall use Commercially Reasonable Efforts to cause its Sublicensees, contractors and consultants not to, take any action that would cause the other Party to violate any applicable anti-corruption or sanctions Laws.

13.16 Counterparts; Electronic Delivery. This Agreement may be executed in counter-parts with the same effect as if both Parties had signed the same document. All such counterparts shall be deemed an original, shall be construed together and shall constitute one and the same instrument. Signatures to this Agreement transmitted by facsimile, by email in "portable document format" (".pdf"), or by any other electronic means intended to preserve the original graphic and pictorial appearance of this Agreement shall have the same effect as physical delivery of the paper document bearing original signature.

[*Signature Page Follows*]

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IN WITNESS WHEREOF, the Parties have caused this Collaboration and Option Agreement to be executed by their respective duly authorized officers as of the Effective Date.

FATE THERAPEUTICS, INC.		**ONO PHARMACEUTICAL CO., LTD.**	
By:	/s/ J. Scott Wolckho	By:	/s/ Gvo Sagara
Name:	Scott Wolchko	Name:	Gyo Sagara
Title:	President & Chief Executive Officer.	Title:	President, Representative Director, and Chief Executive Officer

Exhibit 1.23

Collaboration Candidate Selection Criteria

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Exhibit 1.48

FATE Patents

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

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Exhibit 1.68

Joint Development Plan

[***]

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

Exhibit 1.78

Target Antigens [***]

[***]

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

Exhibit 5.6

FATE Logo

Exhibit 7.10.1

Existing Agreements

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

Exhibit 8.9

Press Release

Fate Therapeutics Announces Strategic Collaboration with ONO Pharmaceutical to Develop Off-the-Shelf, iPSC-derived CAR-T Cell Cancer Immunotherapies

Option-based Collaboration to Develop Two CAR T-Cell Product Candidates Using Fate's Proprietary iPSC Product Platform

San Diego, CA – **September 17, 2018** – Fate Therapeutics, Inc. (NASDAQ: FATE), a clinical-stage biopharmaceutical company dedicated to the development of programmed cellular immunotherapies for cancer and immune disorders, announced today that it has entered into a collaboration with ONO Pharmaceutical Co., Ltd. for the joint development and commercialization of two off-the-shelf CAR-T cell product candidates. Using Fate Therapeutics' proprietary induced pluripotent stem cell (iPSC) product platform, the two CAR T-cell collaboration candidates will each be derived from a clonal master iPSC line engineered to completely eliminate endogenous TCR expression, insert a chimeric antigen receptor (CAR) into the TRAC locus and incorporate other anti-tumor functionality. This transformative approach enables the cost-effective production of cell-based cancer immunotherapies that are uniformly engineered, extensively characterized and homogeneous in composition, and can be consistently and repeatedly mass produced and delivered to patients in an off-the-shelf manner.

"We are delighted to collaborate with ONO, a global leader in oncology with a long history of developing innovative breakthrough cancer drugs," said Scott Wolchko, President and Chief Executive Officer of Fate Therapeutics. "This partnership with ONO enables Fate to further enhance its expertise in targeting solid tumors and to accelerate the global development of our pipeline of off-the-shelf, iPSC-derived CAR- T cell product candidates."

Under the terms of the strategic option agreement, Fate Therapeutics and ONO will jointly advance each iPSC-derived CAR-T cell collaboration candidate to a pre-defined preclinical milestone. The first iPSC- derived CAR T-cell candidate targets an antigen expressed on certain lymphoblastic leukemias, and Fate Therapeutics retains global responsibility for development and commercialization with ONO having an option to assume responsibilities in Asia. The second candidate targets a novel antigen identified by ONO expressed on certain solid tumors, with ONO having an option to assume global responsibility for further development and commercialization and Fate Therapeutics retaining the right to co-develop and co-commercialize the candidate in the United States and Europe. For both collaboration candidates, Fate Therapeutics retains manufacturing responsibilities on a global basis.

"Ono identified Fate Therapeutics as the partner of choice for the generation of off-the-shelf CAR T-cell cancer immunotherapies in our portfolio," said Hiromu Habashita, Corporate Officer, and Executive Director of Discovery & Research of ONO. "We are excited to work with Fate Therapeutics and apply its industry-leading iPSC product platform to develop and deliver the next-generation of CAR T-cell therapies for cancer patients."

Fate Therapeutics will receive an upfront payment and committed research funding during the preclinical option period, and is eligible to receive a preclinical option exercise fee, clinical, regulatory and commercialization milestone payments and tiered royalties on net sales by ONO in connection with the development and commercialization of each collaboration product by ONO in the ONO territory.

About Fate Therapeutics' iPSC Product Platform

The Company's proprietary iPSC product platform enables mass production of off-the-shelf, engineered, homogeneous cell products that can be administered in repeat doses to mediate more effective pharmacologic activity, including in combination with cycles of other cancer treatments. Human iPSCs possess the unique dual properties of unlimited self-renewal and differentiation potential into all cell types of the body. The Company's first-of-kind approach involves engineering human iPSCs in a one-time genetic modification event, and selecting a single iPSC for maintenance as a clonal master iPSC line.

Analogous to master cell lines used to manufacture biopharmaceutical drug products such as monoclonal antibodies, clonal master iPSC lines are a renewable source for consistently and repeatedly manufacturing homogeneous cell products in quantities that support the treatment of patients in an off- the-shelf manner. Fate Therapeutics' iPSC product platform is supported by an intellectual property portfolio of over 100 issued patents and 100 pending patent applications.

About Fate Therapeutics, Inc.

Fate Therapeutics is a clinical-stage biopharmaceutical company dedicated to the development of first- in-class cellular immunotherapies for cancer and immune disorders. The Company is pioneering the development of off-the-shelf cell therapies using its proprietary induced pluripotent stem cell (iPSC) product platform. The Company's immuno-oncology pipeline is comprised of FATE-NK100, a donor- derived natural killer (NK) cell cancer immunotherapy that is currently being evaluated in three Phase 1 clinical trials, as well as iPSC-derived NK cell and T-cell immunotherapies, with a focus on developing augmented cell products intended to synergize with checkpoint inhibitor and monoclonal antibody therapies and to target tumor-specific antigens. The Company's immuno-regulatory pipeline includes ProTmune™, a next-generation donor cell graft that is currently being evaluated in a Phase 2 clinical trial for the prevention of graft-versus-host disease, and a myeloid-derived suppressor cell immunotherapy for promoting immune tolerance in patients with immune disorders. Fate Therapeutics is headquartered in San Diego, CA. For more information, please visit www.fatetherapeutics.com.

Fate Therapeutics Forward-Looking Statements

This release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding the impact, timing, conduct and the potential benefits of the collaboration, including expected funding and payments to be received by Fate Therapeutics under the collaboration, as well as the capabilities, expertise and responsibilities of each of Fate Therapeutics and ONO Pharmaceutical. These and any other forward-looking statements in this release are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include, but are not limited to, risks associated with: the success, cost and timing of product development activities under the collaboration; the ability of Fate Therapeutics and ONO Pharmaceutical to obtain regulatory approval for and to commercialize any product candidates developed under the collaboration; regulatory requirements and regulatory developments; the success of competing treatments and technologies; the risk of cessation or delay of any development activities under the collaboration for a variety of reasons; any adverse effects or events, or other negative results, that may be observed in preclinical or clinical development of any product candidates developed through the collaboration; and the risk that funding and payments received by Fate Therapeutics under the collaboration may be less than expected. For a discussion of other risks and uncertainties, and other important factors, any of which could cause

Fate Therapeutics' actual results to differ from those contained in the forward- looking statements, see the risks and uncertainties detailed in Fate Therapeutics' periodic filings with the Securities and Exchange Commission, including but not limited to Fate Therapeutics' most recently filed periodic report, and from time to time in Fate Therapeutics' press releases and other investor communications. Fate Therapeutics is providing the information in this release as of this date and, except as required by law, does not undertake any obligation to update any forward-looking statements contained in this release as a result of new information, future events or otherwise.

Contact:

Christina Tartaglia

Stern Investor Relations, Inc. 212.362.1200

christina@sternir.com

ONO announces collaboration with Fate Therapeutics for two iPSC-derived CAR-T Therapies for Cancers

Ono Pharmaceutical Co., Ltd. (Osaka, Japan; President, Representative Director and CEO, Gyo Sagara; "ONO") announced that it entered into a collaboration agreement with Fate Therapeutics, Inc. (San Diego, CA, USA; President & Chief Executive Officer, Scott Wolchko; "Fate") for the joint development and commercialization of two off-the-shelf CAR-T cell product candidates for cancer.

Under the terms of the strategic option agreement, ONO will pay to Fate a one-time upfront payment and commit research funding during the preclinical option period, and ONO will also pay to Fate a preclinical option exercise fee, clinical, regulatory and commercialization milestone payments as well as tiered royalties on the net sales in the ONO's territory.

ONO and Fate will jointly advance each iPSC-derived CAR-T cell collaboration candidate to a pre-defined preclinical milestone. The first iPSC-derived CAR T-cell candidate targets an antigen expressed on certain lymphoblastic leukemias, and Fate retains global responsibility for development and commercialization with ONO having an option to assume responsibilities in Asia. The second candidate targets a novel antigen identified by ONO expressed on certain solid tumors, with ONO having an option to assume global responsibility for further development and commercialization and Fate retaining the right to co-develop and co-commercialize the candidate in the United States and Europe. For both collaboration candidates, Fate retains manufacturing responsibilities on a global basis.

"Ono identified Fate Therapeutics as the partner of choice for the generation of off-the-shelf CAR T-cell cancer immunotherapies in our portfolio," said Hiromu Habashita, Corporate Officer, and Executive Director of Discovery & Research of ONO. "We are excited to work with Fate Therapeutics and apply its industry-leading iPSC product platform to develop and deliver the next-generation of CAR T-cell therapies for cancer patients."

"We are delighted to collaborate with ONO, a global leader in oncology with a long history of developing innovative breakthrough cancer drugs," said Scott Wolchko, President and Chief Executive Officer of Fate Therapeutics. "This partnership with ONO enables Fate to further enhance its expertise in targeting solid tumors and to accelerate the global development of our pipeline of off-the-shelf, iPSC-derived CAR-T cell product candidates."

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About Fate Therapeutics, Inc.

Fate Therapeutics is a clinical-stage biopharmaceutical company dedicated to the development of first-in-class cellular immunotherapies for cancer and immune disorders. The Company is pioneering the development of off-the-shelf cell therapies using its proprietary induced pluripotent stem cell (iPSC) product platform. The Company's immuno-oncology pipeline is comprised of FATE-NK100, a donor-derived natural killer (NK) cell cancer immunotherapy that is currently being evaluated in three Phase 1 clinical trials, as well as iPSC-derived NK cell and T-cell immunotherapies, with a focus on developing augmented cell products intended to synergize with checkpoint inhibitor and monoclonal antibody therapies and to target tumor- specific antigens. The Company's immuno-regulatory pipeline includes ProTmune™, a next- generation donor cell graft that is currently being evaluated in a Phase 2 clinical trial for the prevention of graft-versus-host disease, and a myeloid-derived suppressor cell immunotherapy for promoting immune tolerance in patients with immune disorders. Fate Therapeutics is headquartered in San Diego, CA. For more information, please visit www.fatetherapeutics.com.

Contact

ONO PHARMACEUTICAL CO., LTD.

Corporate Communications

public_relations@ono.co.jp

Exhibit 31.1

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: November 1, 2018

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

Exhibit 32.1

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

In connection with the quarterly report of Fate Therapeutics, Inc. (the "Company") on Form 10-Q for the period ended September 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: November 1, 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.