UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

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

FOR THE QUARTERLY PERIOD ENDED MARCH 31, 2023

or

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

Commission File Number 000-50549

Oncternal Therapeutics, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**62-1715807**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification No.)**

12230 El Camino Real, Suite 230
San Diego, CA 92130
(858) 434-1113
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.001 par value	ONCT	The Nasdaq Capital Market

Securities registered pursuant to Section 12(g) of the Act: None

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 April 28, 2023, the registrant had 58,711,451 shares of common stock outstanding.

Oncternal Therapeutics, Inc.

FORM 10-Q

TABLE OF CONTENTS

PART I - FINANCIAL INFORMATION		3
Item 1.	Condensed Consolidated Financial Statements	3
	Condensed Consolidated Balance Sheets	3
	Condensed Consolidated Statements of Operations and Comprehensive Loss	4
	Condensed Consolidated Statements of Cash Flows	5
	Condensed Consolidated Statements of Stockholders' Equity	6
	Notes to Condensed Consolidated Financial Statements	7
Item 2.	Management's Discussion and Analysis of Financial Condition and Results of Operations	20
Item 3.	Quantitative and Qualitative Disclosures About Market Risk	28
Item 4.	Controls and Procedures	28
PART II - OTHER INFORMATION		29
Item 1.	Legal Proceedings	29
Item 1A.	Risk Factors	29
Item 2.	Unregistered Sales of Equity Securities	33
Item 3.	Defaults Upon Senior Securities	33
Item 4.	Mine Safety Disclosures	33
Item 5.	Other Information	33
Item 6.	Exhibits	34
Signatures		36

PART I - FINANCIAL INFORMATION

Item 1. Financial Statements

Oncternal Therapeutics, Inc.
Condensed Consolidated Balance Sheets
(in thousands, except par value)

	March 31, 2023 (Unaudited)	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 11,244	$ 37,142
Short-term investments	43,073	26,582
Prepaid and other	3,600	3,566
Total current assets	57,917	67,290
Right-of-use asset	50	87
Other assets	315	1,274
Total assets	$ 58,282	$ 68,651
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 1,964	$ 2,917
Accrued liabilities	3,474	4,678
Lease liability	50	87
Total current liabilities	5,488	7,682
Deferred compensation	306	—
Commitments and contingencies (Note 4)		
Stockholders' equity:		
Preferred stock, $0.001 par value, authorized shares – 5,000 at March 31, 2023 and December 31, 2022; issued and outstanding shares – none	—	—
Common stock, $0.001 par value; authorized shares – 120,000; issued and outstanding shares – 58,711 and 57,464 at March 31, 2023 and December 31, 2022, respectively	59	57
Additional paid-in capital	222,205	219,203
Accumulated comprehensive income	11	9
Accumulated deficit	(169,787)	(158,300)
Total stockholders' equity	52,488	60,969
Total liabilities and stockholders' equity	$ 58,282	$ 68,651

See accompanying notes.

Oncternal Therapeutics, Inc.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(Unaudited; in thousands, except per share data)

	Three Months Ended March 31,	
	2023	2022
Grant revenue	$ 203	$ 746
Operating expenses:		
Research and development	9,031	6,979
General and administrative	3,315	3,679
Total operating expenses	12,346	10,658
Loss from operations	(12,143)	(9,912)
Interest income	656	8
Net loss	$ (11,487)	$ (9,904)
Comprehensive Income:		
Unrealized gain on available-for-sale securities, net	2	—
Comprehensive loss	$ (11,485)	$ (9,904)
Net loss per share, basic and diluted	$ (0.20)	$ (0.20)
Weighted-average shares outstanding, basic and diluted	58,522	49,429

See accompanying notes.

Oncternal Therapeutics, Inc.
Condensed Consolidated Statements of Cash Flows
(Unaudited; in thousands)

	Three Months Ended March 31,	
	2023	**2022**
Cash flows from operating activities		
Net loss	$ (11,487)	$ (9,904)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation	1,885	1,978
Amortization of premiums (accretion of discounts) on short-term investments	(441)	—
Non-cash lease expense	37	44
Changes in operating assets and liabilities:		
Prepaid and other	925	(553)
Accounts payable	(953)	436
Accrued liabilities	(1,204)	(563)
Deferred compensation	306	—
Change in lease liability	(37)	(44)
Net cash used in operating activities	(10,969)	(8,606)
Cash flows from investing activities		
Purchases of available-for-sale securities	(22,048)	—
Maturities of available-for-sale securities	6,000	—
Net cash used in investing activities	(16,048)	—
Cash flows from financing activities		
Proceeds from issuance of common stock in public offerings, net	1,224	—
Repurchases of common stock for tax withholding obligations	(105)	—
Net cash provided by financing activities	1,119	—
Net decrease in cash and cash equivalents	(25,898)	(8,606)
Cash and cash equivalents at beginning of period	37,142	90,765
Cash and cash equivalents at end of period	$ 11,244	$ 82,159

See accompanying notes.

Oncternal Therapeutics, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(Unaudited; in thousands)

	Three Months Ended March 31, 2023					
	Common Stock		Additional Paid-In	Accumulated Comprehensive	Accumulated	Total Stockholders'
	Shares	Amount	Capital	Income	Deficit	Equity
Balance at December 31, 2022	57,464	$ 57	$ 219,203	$ 9	$ (158,300)	$ 60,969
Issuance of common stock upon vesting of restricted stock units	218	—	—	—	—	—
Shares repurchased for settlement of minimum statutory tax withholdings	(86)	—	(105)	—	—	(105)
Issuance of common stock, net of issuance costs of $38	1,115	2	1,222	—	—	1,224
Unrealized gain on available-for-sale securities	—	—	—	2	—	2
Stock-based compensation	—	—	1,885	—	—	1,885
Net loss	—	—	—	—	(11,487)	(11,487)
Balance at March 31, 2023	58,711	$ 59	$ 222,205	$ 11	$ (169,787)	$ 52,488

	Three Months Ended March 31, 2022					
	Common Stock		Additional Paid-In	Accumulated Comprehensive	Accumulated	Total Stockholders'
	Shares	Amount	Capital	Income	Deficit	Equity
Balance at December 31, 2021	49,429	$ 49	$ 202,201	$ —	$ (114,130)	$ 88,120
Stock-based compensation	—	—	1,978	—	—	1,978
Net loss	—	—	—	—	(9,904)	(9,904)
Balance at March 31, 2022	49,429	$ 49	$ 204,179	$ —	$ (124,034)	$ 80,194

See accompanying notes.

1. Description of Business, Basis of Presentation and Summary of Significant Accounting Policies

Description of Business

Oncternal Therapeutics, Inc. (the "Company" or "Oncternal"), formerly known as GTx, Inc., was incorporated in Tennessee in September 1997 and reincorporated in Delaware in 2003 and is based in San Diego, California. The Company is a clinical-stage biopharmaceutical company focused on the development of novel oncology therapies, for the treatment of cancers with critical unmet medical need. The Company's product candidate pipeline includes ONCT-808, an autologous ROR1 (Receptor-tyrosine kinase-like Orphan Receptor 1) targeting CAR T (chimeric antigen receptor T cells), ONCT-534, a dual-action androgen receptor inhibitor ("DAARI") for the treatment of castrate-resistant prostate and other androgen receptor-driven cancers, and zilovertamab, a humanized monoclonal antibody that binds to ROR1.

Principles of Consolidation

The condensed consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries, Oncternal Oncology, Inc. and Oncternal, Inc. All intercompany accounts and transactions have been eliminated in the preparation of the condensed consolidated financial statements.

Liquidity

From inception, the Company has devoted substantially all of its efforts to drug discovery and development and conducting preclinical studies and clinical trials. The Company has a limited operating history and the sales and income potential of the Company's business and market are unproven. Successful transition to attaining profitable operations is dependent upon achieving a level of revenues adequate to support the Company's cost structure.

As a result of the strategic reprioritization announced in April 2023, the Company expects research and development expenses will decrease in future quarters after the closure of the Phase 3 ZILO-301 Study for the treatment of patients with relapsed or refractory MCL and the Phase 1/2 CIRM-0001 Study for the treatment of mantle cell lymphoma ("MCL"), chronic lymphocytic leukemia ("CLL") and marginal zone lymphoma ("MZL"), and the implementation of other cost reductions (see Note 9). The Company will continue to invest in: (i) advancing existing product candidates into later stages of clinical development, and (ii) further investigation and the development of other preclinical programs. Based on the reprioritization and other cost reductions, the Company believes it has sufficient cash to fund its projected operating requirements for at least twelve months from the date of issuance of the condensed consolidated financial statements. As of March 31, 2023, the Company had $54.3 million in cash, cash equivalents and short-term investments and no debt. However, the Company has experienced net losses and negative cash flows from operating activities since its inception and has an accumulated deficit of $169.8 million as of March 31, 2023. The Company expects to continue to incur net losses for the foreseeable future and believes it will need to raise substantial additional capital to accomplish its business plan over the next several years. The Company plans to continue to fund its losses from operations and capital funding needs through a combination of public or private equity or debt offerings or other sources, including potential collaborations, strategic alliances and other similar licensing arrangements. If the Company is unable to secure adequate additional funding, the Company may be forced to make reductions in spending, including potentially delaying, scaling back or eliminating certain of its pipeline development programs, extend payment terms with suppliers, or liquidate assets where possible. Any of these actions could materially affect the Company's business, results of operations and future prospects.

The Company's ability to obtain additional financing (including through collaboration and/or licensing arrangements) will depend on a number of factors, including, among others, its ability to generate positive data from its clinical trials and preclinical studies, the condition of the capital markets and other risks, many of which are dependent on factors outside of its control. There can be no assurance as to the availability or terms upon which such financing and capital might be available in the future.

Notice of Delisting

On April 4, 2023, the Company received a letter from the Nasdaq staff indicating that, for the last thirty consecutive business days, the bid price for Oncternal's common stock had closed below the minimum $1.00 per share requirement for continued listing on The Nasdaq Capital Market. In accordance with Nasdaq listing rules, the Company has been provided an initial period of 180 calendar days, or until October 2, 2023, to regain compliance. The letter states that the Nasdaq staff will provide written notification that Oncternal has achieved compliance with its rules if at any time before October 2, 2023, the bid price of Oncternal's common stock

closes at $1.00 per share or more for a minimum of ten consecutive business days. The Nasdaq letter has no immediate effect on the listing or trading of Oncternal's common stock and the common stock will continue to trade on The Nasdaq Capital Market.

The Company has not regained compliance with Nasdaq listing rules as of the date these financial statements were issued. The Company intends to monitor the bid price of its common stock and consider available options if its common stock does not trade at a level likely to result in the Company regaining compliance with Nasdaq's minimum bid price rule by October 2, 2023.

If the Company does not regain compliance with Nasdaq listing rules by October 2, 2023, the Company may be eligible for an additional 180 calendar day compliance period. To qualify, the Company would be required to meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for The Nasdaq Capital Market, with the exception of the bid price requirement, and would need to provide written notice of its intention to cure the deficiency during the second compliance period, by effecting a reverse stock split, if necessary. However, if it appears to the Nasdaq staff that the Company will not be able to cure the deficiency, or if the Company is otherwise not eligible, the Nasdaq staff would notify the Company that its securities would be subject to delisting. In the event of such a notification, the Company may appeal the Nasdaq staff's determination to delist its securities, but there can be no assurance the Nasdaq staff would grant the Company's request for continued listing.

Basis of Presentation

The accompanying interim condensed financial statements are unaudited. The unaudited condensed consolidated financial statements have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission ("SEC") and with generally accepted accounting principles in the United States of America ("GAAP"). These unaudited condensed consolidated financial statements have been prepared on the same basis as the audited, consolidated financial statements and include all adjustments, consisting of only normal recurring accruals, which in the opinion of management are necessary to present fairly the Company's financial position as of the interim date and results of operations for the interim periods presented. The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of expenses during the reporting period. Actual results could differ materially from those estimates. These unaudited condensed consolidated financial statements should be read in conjunction with the Company's audited consolidated financial statements for the year ended December 31, 2022, filed with the SEC on its Annual Report on Form 10-K on March 9, 2023. The results presented in these unaudited condensed consolidated financial statements are not necessarily indicative of the results expected for the full fiscal year or any other interim period or any future year or period.

Use of Estimates

The Company's condensed consolidated financial statements are prepared in accordance with GAAP. The preparation of the condensed consolidated financial statements and accompanying notes 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. Significant estimates consist of those used to determine grant revenue and accruals for research and development costs. 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.

Cash and Cash Equivalents

The Company considers all highly liquid investments with maturities of three months or less when purchased to be cash equivalents. Cash and cash equivalents include cash in readily available checking accounts, money market accounts and commercial paper.

Short-term Investments

The Company carries short-term investments classified as available-for-sale marketable securities at fair value as determined by prices for identical or similar securities at the balance sheet date. Short-term investments consist of Level 1 and Level 2 financial instruments in the fair value hierarchy (see Note 6). Realized gains or losses on available-for-sale securities are determined using the specific identification method and net realized gains and losses are included in interest income. The Company periodically reviews available-for-sale securities for other-than-temporary declines in fair value below the cost basis, and whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The Company records unrealized gains and losses on available-for-sale marketable securities as a component of other accumulated comprehensive income within the statements of operations and comprehensive loss and as a separate component of stockholders' equity on the balance sheets. In accordance with policy, the Company does not invest in or hold equity securities in its investment portfolio.

Concentration of Credit Risk

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

Research and Development Expenses and Accruals

Research and development expenses consist of costs incurred for the Company's own and for sponsored and collaborative research and development activities. Research and development costs are expensed as incurred and include manufacturing process development costs, manufacturing costs, costs associated with preclinical studies and clinical trials, regulatory and medical affairs activities, quality assurance activities, salaries and benefits, including stock-based compensation, fees paid to third-party consultants, license fees and overhead.

The Company has entered into various research and development contracts with research institutions, clinical research organizations, clinical manufacturing organizations and other companies. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and payments made in advance of performance are reflected in the accompanying condensed consolidated balance sheets as prepaid expenses and other assets or accrued liabilities. The Company records accruals for estimated costs incurred for ongoing research and development activities and all clinical trial expenses are included in research and development expenses. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the services, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates may be made in determining the prepaid or accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates.

Fair Value Measurements

The accounting guidance defines fair value, establishes a consistency framework for measuring fair value and expands disclosure for each major asset and liability category measured at fair value on either a recurring basis or nonrecurring basis. Fair value is defined as an exit price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants on the measurement date. Accounting guidance establishes a three-tier fair value hierarchy that requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. These tiers are based on the source of the inputs and are as follows:

Level 1: Observable inputs such as quoted prices in active markets for identical assets or liabilities.

Level 2: Inputs other than quoted prices in active markets that are observable either directly or indirectly.

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

The Company's financial instruments include cash, cash equivalents, short-term investments, prepaid expenses and other assets, accounts payable, accrued expenses, and accrued compensation. The carrying amounts of the Company's current financial assets and liabilities are considered to be representative of their respective fair values because of the short-term nature of those instruments. The Company has short-term investments that are measured at fair value on a recurring basis. No transfers between levels have occurred during the periods presented (see Note 6).

Net Loss Per Share

Basic net loss per share is computed by dividing the net loss by the weighted-average number of common shares outstanding for the period, without consideration for potentially dilutive securities and adjusted for the weighted-average number of common shares outstanding that are subject to repurchase. Diluted net loss per share is computed by dividing the net loss by the weighted-average number of shares of common stock and dilutive common stock equivalents outstanding for the period determined using the treasury-stock and if-converted methods. For all periods presented, there is no difference in the number of shares used to calculate basic and diluted shares outstanding as inclusion of the potentially dilutive securities would be antidilutive.

Potentially dilutive securities not included in the calculation of diluted net loss per share, because to do so would be anti-dilutive, are as follows (in common stock equivalent shares; in thousands):

	March 31,	
	2023	2022
Warrants to purchase common stock	3,411	4,235
Common stock options	10,985	8,199
Restricted stock unit awards	753	464
Total	15,149	12,898

Recently Adopted Accounting Pronouncements

In June 2016, the FASB issued ASU 2016-13, Financial Instruments – Credit Losses: Measurement of Credit Losses on Financial Statements (Topic 326), which intends to improve financial reporting by requiring earlier recognition of credit losses on certain financial assets, such as available-for-sale debt securities. Topic 326 amends guidance on reporting credit losses for assets held at amortized cost basis and available-for-sale debt securities. For assets held at amortized cost basis, Topic 326 eliminates the probable initial recognition threshold in current GAAP and, instead, requires an entity to reflect its current estimate of all expected credit losses. The allowance for credit losses is a valuation account that is deducted from the amortized cost basis of the financial assets to present the net amount expected to be collected. For available-for-sale debt securities, credit losses should be measured in a manner similar to current GAAP, however Topic 326 will require that credit losses be presented as an allowance rather than as a write-down. This ASU update affects entities holding financial assets and net investment in leases that are not accounted for at fair value through net loss. This update is effective for the Company and was adopted on January 1, 2023, which did not have a material impact on its condensed consolidated financial statements.

2. Balance Sheet Details

Prepaid and other consist of the following (in thousands):

	March 31, 2023	December 31, 2022
Research and development	$ 15	$ —
Clinical trials	2,845	2,616
Insurance	321	669
Other prepaid expenses	137	103
Other receivable	282	178
	$ 3,600	$ 3,566

Accrued liabilities consist of the following (in thousands):

	March 31, 2023	December 31, 2022
Research and development	$ 850	$ 972
Clinical trials	1,284	868
Legal fees	128	138
Compensation	1,110	2,691
Other	102	9
	$ 3,474	$ 4,678

3. Marketable Securities

The Company invests in available-for-sale marketable securities consisting of money market funds, commercial paper, certificates of deposit, U.S. Treasury securities and U.S. government sponsored enterprise securities. Available-for-sale marketable securities are classified as part of either cash, cash equivalents or short-term investments in the balance sheets. Available-for-sale marketable securities with original maturities of more than three months from the date of purchase as of March 31, 2023 and December 31, 2022, have been classified as short-term investments and are measured at a fair value on a recurring basis, and were as follows (in thousands):

		As of March 31, 2023			
	Maturity (in years)	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Market Value
Cash and cash equivalents:					
Money market funds	1 or less	$ 8,967	$ —	$ —	$ 8,967
U.S. Treasury debt securities	1 or less	1,997	—	—	1,997
Total cash and cash equivalents		$ 10,964	$ —	$ —	$ 10,964
Short-term investments:					
U.S. Treasury debt securities	1 or less	$ 36,131	$ 11	$ —	$ 36,142
Commercial Paper	1 or less	4,952	—	—	4,952
U.S. Government Agency	1 or less	1,979	—	—	1,979
Total short-term investments		$ 43,062	$ 11	$ —	$ 43,073
Total marketable securities		**$ 54,026**	**$ 11**	**$ —**	**$ 54,037**

		As of December 31, 2022			
	Maturity (in years)	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Market Value
Cash and cash equivalents:					
Money market funds	1 or less	$ 25,108	$ —	$ —	$ 25,108
U.S. Treasury debt securities	1 or less	1,996	—	—	1,996
U.S. Government Agency	1 or less	1,991	—	—	1,991
Total cash and cash equivalents		$ 29,095	$ —	$ —	$ 29,095
Short-term investments:					
U.S. Treasury debt securities	1 or less	$ 21,681	$ 7	$ —	$ 21,688
Commercial Paper	1 or less	2,936	—	—	2,936
U.S. Government Agency	1 or less	1,956	2	—	1,958
Total short-term investments		$ 26,573	$ 9	$ —	$ 26,582
Total marketable securities		**$ 55,668**	**$ 9**	**$ —**	**$ 55,677**

Effective January 1, 2023, at each reporting date the Company assesses available-for-sale debt securities in an unrealized loss position to determine whether the unrealized loss or any potential credit losses should be recognized in net loss. For available-for-sale debt securities in an unrealized loss position, the Company first assesses whether it intends to sell, or it is more likely than not that it will be required to sell, the security before recovery of its amortized cost basis. If either of the criteria regarding intent or requirement to sell is met, the security's amortized cost basis is written down to fair value through net loss. For available-for-sale securities that do not meet the aforementioned criteria, the Company evaluates whether the decline in fair value has resulted from credit losses or other factors. In making this assessment, the Company considers the severity of the impairment, any changes in interest rates, underlying credit ratings, and forecasted recovery, among other factors. The credit-related portion of unrealized losses, and any subsequent improvements, are recorded as an allowance in interest income.

There have been no impairment or credit losses recognized during the periods presented in the accompanying condensed consolidated statements of operations and comprehensive loss.

The Company obtains the fair value of its available-for-sale marketable securities from a professional pricing service. The fair values of available-for-sale marketable securities are validated by comparing the fair values reported by the professional pricing service to quoted market prices or to fair values obtained from the custodian bank. The service provider values the securities using a hierarchical security pricing model that relies primarily on valuations provided by an industry-recognized valuation service or mathematical calculations. Such valuations may be based on trade prices in active markets for identical assets or liabilities (Level 1 inputs) or valuation models using inputs that are observable either directly or indirectly (Level 2 inputs), such as quoted prices for similar assets or liabilities, yield curves, credit spreads, current market and contractual prices for the underlying instruments or debt, as well as other relevant economic measures.

4. Commitments, Contingencies and Related Party Transactions

Lease and Sublease

Rent expense was $39,000 and $46,000 for the three months ended March 31, 2023 and 2022, respectively.

From May 2019 through March 31, 2023, the Company leased or subleased office space in San Diego, California. On April 18, 2022, the Company entered into a sublease agreement for office space in San Diego, California which expires on July 31, 2023 (the "San Diego Lease"). Base rent under the San Diego Lease is approximately $157,000 annually and the monthly rent expense is being recognized on a straight-line basis over the term of the lease.

The San Diego Lease is included in the accompanying condensed consolidated balance sheet at the present value of the lease payments. As the San Diego Lease does not have an implicit interest rate, the present value reflects a 10.0% discount rate which is the estimated rate of interest that the Company would have to pay in order to borrow an amount equal to the lease payments on a collateralized basis over a similar term and in a similar economic environment. As of March 31, 2023, the Company has a net operating lease right-of-use asset and an aggregate lease liability of $50,000, which has a weighted average remaining lease term of 0.3 years.

Related Party Transactions

Effective in September 2019, the Company and Shanghai Pharmaceutical (USA) Inc. ("SPH USA") entered into a Materials and Supply and Services Agreement ("SPH USA Services Agreement"), pursuant to which the Company and SPH USA will execute various statements of work for the transfer to SPH USA of key reagents and other materials, and for the supply of certain services by the Company to SPH USA, as contemplated under and in furtherance of the License and Development Agreement between the Company and SPH USA effective as of November 2018. As of March 31, 2023 and December 31, 2022, the Company had no amounts receivable from SPH USA related to statements of work. SPH USA is the Company's largest stockholder and an affiliate of one of the Company's directors. The Company has an agreement with SPH USA for certain rights to the greater China area (see Note 5).

5. License, Collaboration and Grant Award/Subaward Agreements

Georgetown University ("Georgetown")

In March 2014, the Company entered into an Exclusive License Agreement (the "Georgetown License Agreement") with Georgetown, pursuant to which the Company: (i) licensed the exclusive worldwide right to patents and technologies for the development and commercialization of certain product candidates targeting EWS-FLI1 as an anti-tumor therapy for therapeutic, diagnostics, or research tool purposes, (ii) is solely responsible for all development and commercialization activities and costs, and (iii) is responsible for all costs related to the filing, prosecution and maintenance of the licensed patent rights.

Under the terms of the Georgetown License Agreement, commencing in 2015, the Company: (i) shall pay and has paid an annual license maintenance fee of $10,000 until the first commercial sale occurs, (ii) is required to make up to $0.2 million in aggregate milestone payments upon the achievement of certain regulatory milestones, and (iii) will be required to pay low single digit royalties based on annual net product sales. The Company accounted for the licensed technology as an asset acquisition because it did not meet the definition of a business. All milestone payments under the Georgetown License Agreement will be recognized as research and development expense upon completion of the required events, as the triggering events are not considered to be probable until they are achieved. As of March 31, 2023, the Company had not triggered or made any milestone payments under the Georgetown License Agreement.

The Georgetown License Agreement may be terminated by either party upon material breach or may be terminated by the Company as to one or more countries with 90 days written notice of termination. The term of the Georgetown License Agreement will continue until the expiration of the last valid claim within the patent rights covering the product. Georgetown may terminate the agreement in the event: (i) the Company fails to pay any amount and fails to cure such failure within 30 days after receipt of notice, (ii) the Company defaults in its obligation to obtain and maintain insurance and fails to remedy such breach within 60 days after receipt of notice, or (iii) the Company declares insolvency or bankruptcy. The Company may terminate the Georgetown License Agreement at any time upon at least 60 days' written notice.

The University of Texas MD Anderson Cancer Center ("MD Anderson")

In December 2014, the Company entered into a collaboration agreement (as amended, the "Collaboration") with MD Anderson, which provides for the conduct of preclinical and clinical research for ONCT-216 in exchange for certain program payments. If MD Anderson successfully completes all the requirements of the Collaboration in full and the program is successfully commercialized, the Company will be required to pay aggregate milestone payments of $1.0 million based on net product sales. In July 2020 and September 2021, the Company entered into two research agreements with MD Anderson for certain services up to an aggregate cost of $0.8 million. The Company recorded research and development expense of none and $0.1 million for each of the three months ended March 31, 2023 and 2022, respectively.

Agreements with the Regents of the University of California (the "Regents")

In March 2016, and as amended and restated in August 2018, and as amended thereafter, the Company and the Regents entered into a license agreement (as amended and restated, the "Regents License Agreement") for the development, manufacturing and distribution rights related to the development and commercialization of ROR1 related naked antibodies, antibody fragments or synthetic antibodies, and genetically engineered cellular therapy. The Regents License Agreement provides for the following: (i) in May 2016, an upfront license fee of $0.5 million was paid and 107,108 shares of common stock were issued, (ii) $25,000 in annual license maintenance fees commencing in 2017, (iii) reimbursement of certain annual patent costs, (iv) certain development and regulatory milestones aggregating from $20.1 million to $24.5 million, on a per product basis, (v) certain worldwide sales milestones based on achievement of tiered revenue levels aggregating $75.0 million, (vi) low single-digit royalties, including potential future minimum annual royalties, on net sales of each target, and (vii) minimum diligence to advance licensed assets consisting of at least $1.0 million in development spend annually through 2021. Under the Regents License Agreement, the Company recorded: (a) $5,000 and $25,000 in license maintenance fees as research and development expense for the three months ended March 31, 2023 and 2022, respectively, and (b) a nominal amount in patent costs as general and administrative expense for each of the three months ended March 31, 2023 and 2022, respectively. As of March 31, 2023, the Company believes it has met its obligations under the Regents License Agreement.

The Regents License Agreement will expire upon the later of the expiration date of the longest-lived patent rights or the 15th anniversary of the first commercial sale of a licensed product. The Regents may terminate the Regents License Agreement if: (i) a material breach by the Company is not cured within a reasonable time, (ii) the Company files a claim asserting the Regents licensed patent rights are invalid or unenforceable, and (iii) the Company files for bankruptcy. The Company may terminate the agreement at any time upon at least 60 days' written notice.

Effective January 1, 2022, the Company entered into a Research Agreement (the "Research Agreement") with the Regents for further research on the ROR1 therapeutic development program. Under this four-year agreement that expires on December 31, 2025, the Regents will have an aggregate budget of $1.6 million, with quarterly payments of $125,000 in 2022, $131,250 in 2023, and $137,813 in 2024. The Company recorded $0.1 million in research and development expenses under these agreements for the three months ended March 31, 2023 and 2022, respectively. Such costs are includable as part of the Company's annual diligence obligations under the Regents License Agreement.

The University of Tennessee Research Foundation ("UTRF")

In March 2015, and as amended and restated in March 2022 and August 2022, the Company and UTRF entered into a license agreement (the "DAARI License Agreement") pursuant to which the Company was granted exclusive worldwide rights in all existing selective androgen receptor degrader technologies owned or controlled by UTRF, including all improvements thereto, which is now known as the dual action androgen receptor inhibitor, or DAARI program. Under the DAARI License Agreement, the Company is obligated to employ active, diligent efforts to conduct preclinical research and development activities for the DAARI program to advance one or more lead compounds into clinical development. The Company is also obligated to pay UTRF annual license maintenance fees, low single-digit royalties on net sales of products and additional royalties on sublicense revenues, depending on the state of development of a clinical product candidate at the time it is sublicensed. The Company recorded research and development expense under this agreement of a nominal amount and $0.2 million for the three months ended March 31, 2023 and 2022, respectively. As of March 31, 2023, the Company believes it has met its obligations under the DAARI License Agreement.

The California Institute for Regenerative Medicine ("CIRM") Award

In August 2017, and as amended and restated in December 2020, CIRM awarded an $18.3 million grant to researchers at UC San Diego to advance the Company's Phase 1/2 clinical trial evaluating zilovertamab in combination with ibrutinib for the treatment of patients with B-cell lymphoid malignancies, including MCL and CLL. This study is known as CIRM-0001, or Cirmtuzumab and Ibrutinib for Relapsed Lymphoma or Leukemia (the "CIRLL study"). The Company: (i) conducted this study in collaboration with UC San Diego, (ii) received $14.5 million in development milestones under research subaward agreements during the award project period from October 1, 2017 through March 31, 2022, (iii) was committed to and met certain co-funding requirements, (iv) received no subaward payments in the three months ended March 31, 2022, and (v) was required to provide UC San Diego progress and financial update reports throughout the award period. The subaward does not bear a royalty payment commitment, nor is the subaward otherwise refundable. As of March 31, 2023, the Company believes it has met its obligations under the CIRM award and UC San Diego subawards.

The National Institutes of Health ("NIH") Grant Awards

In August 2021, the NIH awarded the Company two research and development grants for up to $2.2 million to support pre-clinical activities for the Company's ONCT-216 and DAARI programs, including $0.7 million payable to subawardees. In March 2023, the NIH awarded the Company a research and development grant for up to $1.8 million to support pre-clinical activities for the Company's DAARI program, including $0.3 million payable to subawardees. Under the terms of the grants, the Company is entitled to receive reimbursement in arrears of incurring allowable expenditures. The earned NIH funds are non-refundable and the Company is required to provide periodic progress performance reports. During the three months ended March 31, 2023 and 2022, the Company received $0.1 million and $0.1 million in award payments and recorded $0.2 million and $0.5 million in grant revenue, respectively. As of March 31, 2023 and December 31, 2022, the Company had an unbilled grant receivable of $0.1 million, respectively, which has been included in prepaid and other assets.

Clinical Trial and Supply Agreements

In April 2018, and as amended in August 2019, the Company entered into a Clinical Trial and Supply Agreement with Pharmacyclics, LLC, an AbbVie Company, to supply ibrutinib for the Phase 1/2 study CIRM-0001. Effective in June 2022, the Company entered into a Clinical Trial and Supply Agreement with Pharmacyclics, LLC, to supply ibrutinib for the Company's Phase 3 study ZILO-301. Such agreement does not bear any upfront costs, inventory purchase costs, milestone or royalty payment commitments or other financial obligations. In April 2023, the Company reprioritized the development of zilovertamab and closed the Phase 3 ZILO-301 and the Phase 1/2 CIRM-0001 studies.

License and Development Agreement ("LDA") with SPH USA, a Related Party

In November 2018, and as amended in August 2020, the Company entered into the LDA with SPH USA for: (i) the territory of the People's Republic of China, Hong Kong, Macau, and Taiwan ("Greater China"), and (ii) rights to manufacture, develop, market, distribute and sell all of the Company's product candidates under the Georgetown License Agreement and the Regents License Agreement (exclusive to Greater China only). Under the LDA, SPH USA is solely responsible for: (a) all preclinical and clinical development activities required in order to obtain regulatory approval in Greater China for such product candidates, (b) any third-party license milestone or royalty payments owed under the Georgetown License Agreement and the Regents License Agreement, and (c) paying the Company a low single digit royalty on net sales in the territory.

The LDA will expire upon the expiration of the last royalty term for the last licensed product. The LDA may be terminated by: (i) SPH USA on a country by country or product by product basis with 180 days written notice, (ii) either party upon material breach that is not cured within 90 days, and (iii) either party in the event the other party declares insolvency or bankruptcy. There has been no significant activity under this agreement for each of the three months ended March 31, 2023 and 2022 (see Note 4).

Contingent Value Rights Agreement ("CVR Agreement")

Pursuant to the GTx merger agreement entered into in June 2019 (the "Merger"), the Company, a representative of holders of the CVRs, and Computershare, Inc. as rights agent, entered into the CVR Agreement. Pursuant to the CVR Agreement, the Company's stockholders of record as of immediately prior to the Merger received one CVR for each share of the Company's common stock held immediately prior to the Merger.

As amended on November 1, 2021, the CVR Agreement entitles holders of CVRs to receive: (i) 50% of certain net proceeds received by the Company during the 15-year period after the closing of the Merger (the "CVR Term") from a transaction, if any, resulting in the grant, sale, or transfer of DAARI technology to a third party that occurs during the 10-year period after the closing of the Merger (or in the 11th year if based on a term sheet approved during the initial 10-year period); and (ii) 5% of net sales of products by Parent or its affiliates during the CVR Term incorporating the DAARI technology. As of March 31, 2023, no transactions or net sales relating to the DAARI technology had occurred.

6. Fair Value

As of March 31, 2023 and December 31, 2022, the following fair value hierarchy table presents the Company's financial assets measured at fair value on a recurring basis (in thousands):

	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
As of March 31, 2023				
Assets:				
Cash and cash equivalents:				
Money market funds	$ 8,967	$ 8,967	$ —	$ —
U.S. Treasury debt securities	1,997	1,997	—	—
Total cash and cash equivalents	$ 10,964	$ 10,964	$ —	$ —
Short-term investments:				
U.S. Treasury debt securities	$ 36,142	$ 36,142	$ —	$ —
Commercial Paper	4,952	—	4,952	—
U.S. Government Agency	1,979	—	1,979	—
Total short-term investments	$ 43,073	$ 36,142	$ 6,931	$ —
Total assets measured at fair value	$ 54,037	$ 47,106	$ 6,931	$ —

	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
As of December 31, 2022				
Assets:				
Cash and cash equivalents:				
Money market funds	$ 25,108	$ 25,108	$ —	$ —
U.S. Treasury debt securities	1,996	1,996	—	—
U.S. Government Agency	1,991	—	1,991	—
Total cash and cash equivalents	$ 29,095	$ 27,104	$ 1,991	$ —
Short-term investments:				
U.S. Treasury debt securities	$ 21,688	$ 21,688	$ —	$ —
Commercial Paper	2,936	—	2,936	—
U.S. Government Agency	1,958	—	1,958	—
Total short-term investments	$ 26,582	$ 21,688	$ 4,894	$ —
Total assets measured at fair value	$ 55,677	$ 48,792	$ 6,885	$ —

The Company's policy is to recognize transfers between levels of the fair value hierarchy on the date of the event or change in circumstances that caused the transfer. There were no transfers into or out of Level 3 during the three months ended March 31, 2023 and 2022.

7. Stockholders' Equity

ATM Program

In December 2021, the Company entered into an Open Market Sale Agreement℠ (the "Sales Agreement") with Jefferies LLC, pursuant to which the Company is able to offer and sell, from time to time in its sole discretion, shares of its common stock having an aggregate offering price of up to $50.0 million. The Company has no obligation to sell any shares under the Sales Agreement and may at any time suspend solicitation and offers under the Sales Agreement. During the three months ended March 31, 2023, the Company sold 1,115,480 shares of common stock for net proceeds of $1.2 million.

Common Stock Warrants

A summary of warrant activity and changes in warrants outstanding is presented below:

	Number of Shares Underlying Warrants	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (in years)
Balance at December 31, 2022	3,410,642	$ 3.70	2.94
Issued	—	$ —	—
Forfeited	—	$ —	—
Exercised	—	$ —	—
Balance at March 31, 2023	3,410,642	$ 3.70	2.69

All warrants met the criteria for classification in stockholders' equity.

Equity Incentive Plans

Stock Option Awards

Contemporaneous with the Merger closing: (i) Oncternal's 2015 Equity Incentive Plan, as amended ("2015 Plan") was assumed by the Company, and (ii) the Company adopted the 2019 Incentive Award Plan ("2019 Plan") under which the sum of: (a) 1,954,150 shares of common stock, and (b) an annual increase on the first day of each calendar year beginning January 1, 2020, and ending on and including January 1, 2029, equal to the lesser of (A) 5% of the aggregate number of shares of common stock outstanding on the final day of the immediately preceding calendar year and (B) such smaller number of shares of common stock as is determined by the Board, are reserved for issuance.

In July 2015, Oncternal adopted the 2015 Plan which provided for the issuance of shares of common stock for incentive stock options, non-statutory stock options, restricted stock awards, restricted stock unit awards and other stock awards to its employees, members of its board of directors and consultants. In general, the options issued under the 2015 Plan expire ten years from the date of grant and vest over a four-year period. Certain grants vest based on the achievement of development or regulatory milestones. The 2015 Plan was terminated as to new grant awards in June 2019.

The 2019 Plan provides for the issuance of shares of common stock for incentive stock options, non-statutory stock options, restricted stock awards, restricted stock unit awards and other stock awards to its employees, members of its board of directors and consultants. In general, the stock options issued under the 2019 Plan expire ten years from the date of grant and vest over a four-year period. Certain stock option grants vest based on the achievement of development or regulatory milestones. The 2019 Plan allows for the early exercise of all stock option grants if authorized by the board of directors at the time of grant.

In February 2021, the Company's board of directors adopted the 2021 Employment Inducement Incentive Award Plan (the "Inducement Plan"). The Inducement Plan is a non-shareholder approved stock plan adopted pursuant to the "inducement exception" provided under Nasdaq listing rules. The Inducement Plan is used exclusively for the issuance of non-statutory stock options to certain new hires who satisfied the requirements to be granted inducement grants under Nasdaq rules as an inducement material to the individual's entry into employment with the Company. The terms of the Inducement Plan are substantially similar to the terms of the 2019 Plan. As amended in May 2021 and December 2021, the Company has reserved 2,800,000 shares of common stock under the Inducement Plan.

As of March 31, 2023, 1,757,954 shares remain available for issuance under the 2019 Plan and Inducement Plan. A summary of the Company's stock option activity under the 2015 Plan, 2019 Plan and Inducement Plan is as follows:

	Number of Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding at December 31, 2022	8,515,696	$ 4.16	8.1	$ 101,611
Granted	2,654,000	$ 0.97		
Forfeited	(184,347)	$ 3.72		
Outstanding at March 31, 2023	10,985,349	$ 3.40	7.5	$ 13,254
Options vested and expected to vest as of March 31, 2023	10,985,349	$ 3.40	7.5	$ 13,254
Options vested and exercisable as of March 31, 2023	4,349,256	$ 4.51	6.8	$ 13,254

For the three months ended March 31, 2023 and 2022, the weighted average grant date fair value per share of option grants was $0.78 and $1.54, respectively. The intrinsic value is calculated as the difference between the fair value of the Company's common stock at the time of the option exercise and the exercise price of that stock option. For the three months ended March 31, 2023 and 2022, no stock options were exercised.

Restricted Stock Unit Awards

Restricted stock unit awards ("RSUs") are rights to receive shares of the Company's common stock upon satisfaction of specific vesting conditions. The Company began issuing RSUs in the first quarter of 2022. The RSUs generally vest over a two-year period. Restricted stock unit activity under Equity Incentive Plans is summarized as follows:

	Number of Restricted Stock Units	Weighted-Average Remaining Contractual Term (in years)	Weighted-Average Grant Date Fair Value
Nonvested at December 31, 2022	1,009,083	0.6	$ 1.64
Granted	—		
Vested	(217,676)		$ 2.43
Forfeited/ Repurchased	(38,432)		$ 1.27
Nonvested at March 31, 2023	752,975	0.5	$ 1.43
Units expected to vest as of March 31, 2023	747,456	0.5	$ 1.42

The fair value of RSUs vested during the three months ended March 31, 2023 was $0.2 million.

Stock-Based Compensation Expense

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

	Three Months Ended March 31,	
	2023	2022
Risk-free interest rate	4.1%	1.7%
Expected volatility	99.8%	100.4%
Expected term (in years)	6.1	6.2
Expected dividend yield	—%	—%

Expected volatility. The expected volatility assumption is based on a blend of volatilities of the Company's share price and a peer group of similar companies whose share prices are publicly available. The volatility of the Company's shares price was measured using the closing share price beginning June 10, 2019, the date of the closing of the Merger, through the current period. The peer group was developed based on companies in the life sciences industry with comparable characteristics to the Company including enterprise value, risk profiles, position within the industry, and with historical share price information sufficient to meet the expected life of the stock-based awards. The Company will continue to apply this process until a sufficient amount of historical information regarding the volatility of its own stock price becomes available.

Expected term. The expected term represents the period of time that options are expected to be outstanding. Due to limited historical exercise behavior, it determined the expected life assumption using the simplified method for employees, which is an average of the contractual term of the option and its vesting period. The expected term for nonemployee options is generally the remaining contractual term.

Risk-free interest rate. The risk-free interest rate is based on the implied yield on the U.S. Treasury securities with a maturity date similar to the expected term of the associated stock option award.

Expected dividend yield. The Company bases the expected dividend yield assumption on the fact that it has never paid cash dividends and has no present intention to pay cash dividends and, therefore, used an expected dividend yield of zero.

RSU awards represent rights to receive shares of common stock contingent upon satisfaction of specific vesting conditions. The stock-based compensation expense for these awards was determined using the closing price on the grant date applied to the total number of shares that were anticipated to fully vest.

Stock-based compensation expense recognized for all equity awards has been reported in the condensed consolidated statements of operations as follows (in thousands):

	Three Months Ended March 31,	
	2023	2022
Research and development	$ 1,117	$ 1,063
General and administrative	768	915
	$ 1,885	$ 1,978

As of March 31, 2023, the unrecognized compensation cost related to non-vested stock options was $12.5 million, which is expected to be recognized over a weighted-average period of 3.0 years.

As of March 31, 2023, the unrecognized compensation cost related to non-vested restricted stock units was $0.7 million, which is expected to be recognized over a weighted-average period of 0.8 year.

Common Stock Reserved for Future Issuance

Common stock reserved for future issuance is as follows (in thousands):

	March 31, 2023
Common stock warrants	3,411
Common stock options issued and outstanding	10,985
Restricted stock unit awards unvested and outstanding	753
Common stock available for issuance under the Inducement Plan and 2019 Plan	1,758
	16,907

8. COVID-19 Pandemic and CARES Act

The COVID-19 pandemic has presented substantial public health and economic challenges and continues to affect economies, financial markets and business operations around the world. The pandemic may continue to directly or indirectly affect the timeline for the Company's preclinical and manufacturing activities, planned regulatory submissions and clinical trials. The Company considered the impacts of COVID-19 on the assumptions and estimates used to prepare its condensed consolidated financial statements and determined that there were no material adverse impacts on the Company's results of operations and financial position at March 31, 2023. The full extent to which the COVID-19 pandemic will continue to directly or indirectly impact the Company's business results of operations and financial condition, will depend on future developments that are highly uncertain, including as a result of new information that may emerge concerning COVID-19 and the actions taken to contain or treat it, the success or failure of ongoing vaccination programs, the emergence and spread of additional variants of COVID-19, as well as the economic impact on local, regional, national and international markets.

In response to the COVID-19 pandemic, the CARES Act was signed into law on March 27, 2020. The CARES Act, among other things, includes tax provisions relating to refundable payroll tax credits, deferment of employer's social security payments, net operating loss utilization and carryback periods, modifications to the net interest deduction limitations and technical corrections to tax depreciation methods for qualified improvement property, and authorized the Paycheck Protection Program. The CARES Act had no material impact on the Company's income tax provision for the three months ended March 31, 2023. The Company continues to monitor changes and revisions to the CARES Act and its impact on the Company's condensed consolidated financial position, results of operations and cash flows.

9. Subsequent Event

On April 3, 2023, the Company announced a strategic reprioritization based on the rapidly changing commercial landscape for Bruton's tyrosine kinase inhibitors resulting in the Company's decision to close two studies: Study ZILO-301, a randomized, double-blind, placebo-controlled global Phase 3 registrational study evaluating zilovertamab in combination with ibrutinib for the treatment of patients with relapsed or refractory MCL, and Study CIRM-0001, a Phase 1/2 clinical trial evaluating zilovertamab in combination with ibrutinib for the treatment of patients with MCL, CLL or MZL.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with: (i) our unaudited condensed consolidated financial statements and related notes thereto included elsewhere in this Quarterly Report on Form 10-Q for the period ended March 31, 2023, and (ii) our audited financial statements and notes thereto for the year ended December 31, 2022 and the related Management's Discussion and Analysis of Financial Condition and Results of Operations, both of which are contained in our Annual Report on Form 10-K for the year ended December 31, 2022. Except as otherwise indicated herein or as the context otherwise requires, references in this Quarterly Report to "Oncternal" "the Company," "we," "us" and "our" refer to Oncternal Therapeutics, Inc., a Delaware corporation.

Cautionary Note Regarding Forward-Looking Statements

This Quarterly Report contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements other than statements of historical facts contained in this Quarterly Report, including statements regarding our future results of operations and financial position, business strategies and plans, prospective products, product approvals, research and development costs, the expected continued impact of COVID-19, timing and likelihood of success, plans and objectives of management for future operations and future results of anticipated products, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "could," "expects," "intends," "plans," "anticipates," "believes," "estimates," "predicts," "potential," "continue," or the negative of these terms or other comparable terminology. These forward-looking statements are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this Quarterly Report and are subject to a number of risks, uncertainties and assumptions, including those described in our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on March 9, 2023, and in Part II, Item 1A, "Risk Factors" of this Quarterly Report. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise.

Overview

We are a clinical-stage biopharmaceutical company focused on the development of novel oncology therapies for patients with cancers with critical unmet medical need. Our drug development efforts are focused on promising, yet untapped, biological pathways implicated in cancer generation or progression, primarily in hematological malignancies and prostate cancer. Our pipeline includes:

- ONCT-808, our lead cell therapy product candidate, is an autologous Receptor tyrosine kinase-like Orphan Receptor 1 (ROR1) targeting chimeric antigen receptor T cell (CAR T) therapy using the binding domain from zilovertamab. ONCT-808 has demonstrated activity in preclinical models against multiple hematological malignancies and solid tumors and has been shown to be specific for cancer cells expressing ROR1. We believe our manufacturing process may reduce the time patients must wait for their individual CAR T product to be produced, compared with approved CAR T products. We recently initiated Study ONCT-808-101, a Phase 1/2 dose escalation trial for the treatment of patients with relapsed or refractory aggressive B-cell lymphoma, including patients who have failed previous CD19 CAR T treatment. The study entitled "A Clinical Study of ONCT-808 in Subjects With Relapsed or Refractory B-Cell Malignancies" (NCT05588440) will evaluate the evaluate the safety and tolerability, pharmacokinetics, and anti-tumor activity of ONCT-808 in two distinct phases designated as Phase 1 and Phase 2. After the safety and tolerability of ONCT-808 have been assessed in Phase 1 to select the recommended Phase 2 dose, Phase 2 will commence to further validate the dose and evaluate the safety and efficacy of ONCT-808. The study aims to enroll approximately 57 patients. We expect to present initial clinical data from this study in late 2023 and additional clinical data readouts in 2024. ONCT-808 is being developed utilizing manufacturing services from Lentigen Technology, Inc. (lentivirus manufacturing), Miltenyi Biotec B.V. & Co. KG. (cell processing) and the Dana-Farber Cancer Institute (cGMP cell preparation and manufacturing activities).
- ONCT-534, is a dual-action androgen receptor inhibitor (DAARI) with preclinical activity in prostate cancer models against both unmutated androgen receptor (AR), and against multiple forms of AR mutation. It is a potential treatment for patients with metastatic castrate-resistant prostate cancer (mCRPC). We believe ONCT-534 has the potential to address significant unmet medical needs related to resistance to androgen receptor inhibitors, including those with AR amplification, mutations in the AR ligand binding domain (LBD), or splice variants with loss of the AR LBD. Final investigational new drug (IND)-enabling studies for ONCT-534 have been completed. We expect to submit an IND application in mid-2023 and, assuming the IND becomes effective, initiate a Phase 1/2 clinical trial in patients with castrate resistant prostate cancer by the end of 2023. We anticipate initial clinical data in the first half of 2024.

- Zilovertamab is an investigational, humanized, potentially first-in-class, monoclonal antibody designed to: (i) bind to a specific functionally important epitope of ROR1, a growth factor receptor that is widely expressed on many tumor types and that activates pathways leading to increased tumor proliferation, invasiveness, and drug resistance in preclinical models, and (ii) inhibit ROR1 function. Zilovertamab has been evaluated in a Phase 1/2 Study CIRM-0001 in combination with ibrutinib for the treatment of patients with mantle cell lymphoma (MCL), chronic lymphocytic leukemia (CLL) and marginal zone lymphoma (MZL). Zilovertamab is being evaluated in two investigator-initiated studies, a Phase 2 clinical trial of zilovertamab in combination with venetoclax, a Bcl-2 inhibitor, in patients with relapsed/refractory R/R CLL, and a Phase 1b study of zilovertamab in combination with docetaxel in patients with mCRPC. In April 2023, we reprioritized the development of zilovertamab and are in the process of closing the Phase 3 ZILO-301 Study for the treatment of patients with relapsed or refractory MCL and the Phase 1/2 CIRM-0001 Study for the treatment of MCL, CLL and MZL.

Our pipeline previously included ONCT-216, an investigational small molecule designed to inhibit the ETS, or E26 Transformation Specific, family of oncoproteins, which had shown in preclinical studies to alter gene transcription and RNA processing that led to decreased cell proliferation and invasion. In April 2022, we deprioritized the development of ONCT-216 and stopped the enrollment of patients in a Phase 1/2 clinical trial in patients with relapsed or refractory Ewing sarcoma.

Since the inception of Oncternal Therapeutics, Inc. in 2013, we have devoted most of our resources to organizing and staffing, business planning, raising capital, acquiring product candidates and securing related intellectual property rights and advancing our pipeline of development programs, including ONCT-808, ONCT-534, zilovertamab and ONCT-216. Under research subaward agreements between us and UC San Diego, we were eligible to receive $14.6 million in development milestones during the award project period from October 1, 2017 to March 31, 2022. Through March 31, 2023, we have funded our operations primarily through: (i) gross proceeds of $136.3 million from the issuance of common stock, (ii) gross proceeds of $49.0 million from the issuance of convertible preferred stock, (iii) receipt of $14.5 million in subaward grant payments from UC San Diego, and (iv) cash proceeds of $18.3 million received in connection with the closing of the merger with GTx, Inc. in June 2019, or the GTx Merger. As of March 31, 2023, we had cash, cash equivalents and short-term investments of $54.3 million and no debt.

We have incurred net losses in each year since inception. Our ability to generate product revenue sufficient to achieve profitability will depend heavily on the successful development and eventual commercialization of one or more of our current or future product candidates. Our net loss was $11.5 million for the three months ended March 31, 2023 and we had an accumulated deficit of $169.8 million as of March 31, 2023. Substantially all of our net losses have resulted from costs incurred in connection with: (i) advancing our research and development programs, (ii) general and administrative costs associated with our operations, including the costs associated with operating as a public company, and (iii) in-process research and development costs associated with the GTx Merger. We expect to continue to incur significant and increasing operating losses for at least the next several years. We expect that our expenses and capital funding requirements will increase substantially in connection with our ongoing activities, particularly if and as we:

- advance ONCT-808 through clinical development, initially in hematological malignancies;
- advance ONCT-534 through clinical development, initially in castrate resistant prostate cancer;
- explore zilovertamab with other BTK inhibitors, and in additional ROR1-positive hematologic malignancies and solid tumors preclinically;
- continue to develop additional product candidates; acquire or in-license other product candidates and technologies;
- maintain, expand and protect our intellectual property portfolio;
- establish a commercial manufacturing source and secure supply chain capacity sufficient to provide commercial quantities of any product candidates for which we may obtain regulatory approval;
- seek regulatory approvals for any product candidates that successfully complete clinical trials;
- respond to the impacts of the COVID-19 pandemic, which has slowed enrollment into our clinical trials and impacted our supply chain activities;
- establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain regulatory approval; and
- add operational, financial and management information systems and personnel, including personnel to support our planned product development and future commercialization efforts.

We will not generate product sales revenue unless and until we successfully complete clinical development and obtain regulatory approval for our product candidates. If we obtain regulatory approval for any of our product candidates and do not enter into a commercialization partnership, we expect to incur significant expenses related to developing our internal commercialization capability to support product sales, marketing and distribution. In addition, we expect to incur additional costs associated with operating as a public company.

As a result, we believe we will need substantial additional funding to support our continuing operations and pursue our business strategy. Until such time as we can generate significant product sales revenue, if ever, we expect to finance our operations through a combination of public or private equity or debt offerings or other sources, including potential collaborations, strategic alliances and other similar arrangements. We may not be able to raise additional funds or enter into such other agreements or arrangements when needed on favorable terms, or at all. If we fail to raise capital or enter into such agreements as and when needed, we may have to significantly delay, reduce or eliminate the development and commercialization of one or more of our product candidates or delay our pursuit of potential in licenses or acquisitions.

Because of the numerous risks and uncertainties associated with product development, we are unable to predict the timing or amount of increased expenses or when or if we will be able to achieve or maintain profitability. Even if we are able to generate product sales, we may not become profitable. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and be forced to reduce or terminate our operations.

We expect that our existing cash, cash equivalents and short-term investments will be sufficient to fund our operating expenses and capital expenditure requirements into 2025. We have based this estimate on assumptions that may prove to be wrong, and we could exhaust our available capital resources sooner than we expect. Beyond that point, we will need to raise additional capital to finance our operations, which cannot be assured.

Business Update Regarding COVID-19

The COVID-19 worldwide pandemic has presented substantial public health and economic challenges and continues to affect economies, financial markets and business operations around the world. The pandemic may continue to directly or indirectly affect the timeline for our manufacturing activities, planned regulatory submissions and clinical trials. The full extent to which the COVID-19 pandemic will continue to directly or indirectly impact our business results of operations and financial condition, will depend on future developments that are highly uncertain, including as a result of new information that may emerge concerning COVID-19 and the actions taken to contain or treat it, the success or failure of ongoing vaccination programs worldwide, the emergence and spread of additional variants of COVID-19, as well as the economic impact on local, regional, national and international markets.

Components of Results of Operations

Grant Revenue

Our grant revenue has been derived from a California Institute for Regenerative Medicine, or CIRM, grant subaward with UC San Diego and research and development grants from the National Institutes of Health, or NIH.

In August 2017, CIRM awarded an $18.3 million grant to researchers at UC San Diego to advance the CIRLL study throughout the award project period from October 1, 2017 through March 31, 2022. We conducted this study in collaboration with UC San Diego and received $14.5 million during the project period related to development milestone payments under research subaward agreements. In addition, we were committed to certain co-funding requirements and we were required to provide UC San Diego progress and financial update reports throughout the award project period. We received no subaward payments and recorded $0.3 million in grant revenue in the three months ended March 31, 2022. As of March 31, 2023, we believe we have met our obligations under the CIRM award and UC San Diego subawards.

In August 2021, the NIH awarded us two research and development grants for up to $2.2 million to support pre-clinical and other research activities for our ONCT-216 and DAARI programs, including $0.7 million payable to subawardees. In March 2023, the NIH awarded us a research and development grant for up to $1.8 million to support pre-clinical and other research activities for our DAARI program, including $0.3 million payable to subawardees. During each of the three months ended March 31, 2023 and 2022, we received $0.1 million in award payments, and recorded $0.2 million and $0.5 million, respectively, in grant revenue and $0.1 million in unbilled grant receivable as of March 31, 2023.

Operating Expenses

Research and Development

Research and development expenses consist primarily of costs incurred for the development of zilovertamab, ONCT-808, ONCT-534 and ONCT-216, which include:

- expenses under agreements with consultants, third-party contract organizations, and investigative clinical trial sites that conduct research and development activities on our behalf;
- costs related to the development and manufacture of preclinical study and clinical trial material;

- salaries and employee-related costs, including stock-based compensation;
- costs incurred under our collaboration and third-party licensing agreements; and
- laboratory and vendor expenses related to the execution of preclinical and clinical trials.

We accrue all research and development costs in the period for which they are incurred. Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors, collaborators and third-party service providers. Advance payments for goods or services to be received in future periods for use in research and development activities are deferred and then expensed as the related goods are delivered and as services are performed. Any unearned advances would be refunded when known.

As a result of the strategic reprioritization announced in April 2023, we expect our research and development expenses will decrease in future quarters after we close the Phase 3 ZILO-301 Study for the treatment of patients with relapsed or refractory MCL and the Phase 1/2 CIRM-0001 Study for the treatment of MCL, CLL and MZL, and implement other cost reductions. We will continue to invest in: (i) advancing our product candidates into later stages of clinical development, and (ii) further investigation and the development of our other preclinical programs. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials.

Our direct research and development expenses are tracked by product candidate and consist primarily of external costs, such as fees paid under third-party license agreements and to outside consultants, contract research organizations, or CROs, contract manufacturing organizations and research laboratories in connection with our preclinical development, process development, manufacturing and clinical development activities. We do not allocate employee costs and costs associated with our discovery efforts, laboratory supplies and facilities, including other indirect costs, to specific product candidates because these costs are deployed across multiple programs and, as such, are not separately classified. We use internal resources primarily to conduct our research as well as for managing our preclinical development, process development, manufacturing and clinical development activities. These employees work across multiple programs and, therefore, we do not track our costs by product candidate unless we can include them as subaward costs.

We cannot determine with certainty the timing of initiation, the duration or the completion costs of current or future preclinical studies and clinical trials of our product candidates due to the inherently unpredictable nature of preclinical and clinical development, including any potential expanded dosing beyond the original protocols based in part on ongoing clinical success and the potential effects of the COVID-19 pandemic. Clinical and preclinical development timelines, the probability of success and development costs can differ materially from expectations. We anticipate that we will make determinations as to which product candidates to pursue and how much funding to direct to each product candidate on an ongoing basis in response to the results of ongoing and future preclinical studies and clinical trials, regulatory developments and our ongoing assessments of each product candidate's commercial potential. We will need to raise substantial additional capital in the future. 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

General and administrative expenses consist primarily of personnel-related costs, insurance costs, facility costs and professional fees for legal, patent, consulting, investor and public relations, accounting and audit services. Personnel-related costs consist of salaries, benefits and stock-based compensation. We expect our general and administrative expenses will decrease modestly in future quarters as we implement other cost reductions and cost containment measures.

Interest Income

Interest income consists of interest earned on our cash, cash equivalents and short-term investments, which primarily consist of money market funds and U.S. Treasury securities. In a significantly rising interest rates environment, our interest income on our invested balances is expected to increase as rates increase. Historically our interest income has not been significant due to low interest yields earned on invested balances.

Results of Operations

Comparison of Three Ended March 31, 2023 and 2022

The following table summarizes our condensed consolidated results of operations for the periods indicated:

(in thousands)	Three Months Ended March 31, 2023	2022	Change
Grant revenue	$ 203	$ 746	$ (543)
Operating expenses:			
Research and development	9,031	6,979	2,052
General and administrative	3,315	3,679	(364)
Total operating expenses	12,346	10,658	1,688
Loss from operations	(12,143)	(9,912)	(2,231)
Interest income	656	8	648
Net loss	$ (11,487)	$ (9,904)	$ (1,583)

Grant Revenue

Grant revenue was $0.2 million and $0.7 million for the three months ended March 31, 2023 and 2022, respectively. The decrease of $0.5 million was primarily due to the completion of the CIRM subaward in the first quarter of 2022.

Research and Development Expenses

The following table summarizes our research and development expenses for the periods indicated:

(in thousands)	Three Months Ended March 31, 2023	2022	Increase/(Decrease)
Zilovertamab	$ 3,490	$ 1,900	$ 1,590
ONCT-534	818	260	558
ONCT-808	887	864	23
ONCT-216	224	1,022	(798)
Unallocated research and development expenses	3,612	2,933	679
Total research and development expenses	$ 9,031	$ 6,979	$ 2,052

Research and development expenses for the three months ended March 31, 2023 and 2022 were $9.0 million and $7.0 million, respectively, an increase of $2.0 million. The increase was primarily due to a $1.3 million increase in direct product candidate expenses and a $0.7 million increase in unallocated expenses.

Direct expenses for zilovertamab increased $1.6 million for the three months ended March 31, 2023, compared to the three months ended March 31, 2022, primarily due to an increase in clinical development costs.

Direct expenses for ONCT-534 increased $0.6 million for the three months ended March 31, 2023, compared to the three months ended March 31, 2022, primarily due to an increase in manufacturing activities.

Direct expenses for ONCT-808 for the three months ended March 31, 2023 were consistent with the expenses during the three months ended March 31, 2022. The direct expenses for the three months ended March 31, 2023 included significant spend for clinical development costs, which were offset by decreases in preclinical and manufacturing related costs, as compared to the expenses incurred during the three months ended March 31, 2022.

Direct expenses for ONCT-216 decreased $0.8 million for the three months ended March 31, 2023, compared to the three months ended March 31, 2022, due primarily to lower clinical trial activity and manufacturing costs associated with the de-prioritization of this program in 2022.

Unallocated expenses increased $0.7 million for the three months ended March 31, 2023, compared to the three months ended March 31, 2022, primarily due to higher personnel costs, including non-cash stock-based compensation costs.

General and Administrative Expenses

General and administrative expenses for the three months ended March 31, 2023 and 2022 were $3.3 million and $3.7 million, respectively, a decrease of $0.4 million primarily due to lower legal and consulting expenses.

Liquidity and Capital Resources

As a result of the strategic reprioritization announced in April 2023, we: (i) believe our existing cash, cash equivalents, and short-term investments will be sufficient to fund our operations into 2025, and (ii) expect our research and development expenses will decrease in future quarters after we close two clinical studies and implement other cost reductions. As of March 31, 2023, we had $54.3 million in cash, cash equivalents and short-term investments and no debt. We have incurred losses and negative cash flows from operations since inception. As of March 31, 2023, we had an accumulated deficit of $169.8 million and anticipate that we will continue to incur net losses for the foreseeable future. We expect our operating expenses to continue to be substantial for the foreseeable future and, as a result, we will need additional capital to fund our operations, which we may obtain through a combination of public or private equity or debt offerings or other sources, including potential collaborations, strategic alliances and other similar arrangements.

In December 2021, we entered into an at-the-market Sales Agreement, or the Sales Agreement, with Jefferies LLC, providing for the sale of up $50.0 million of our common stock from time to time in "at-the-market" offerings under an existing shelf registration statement. During the three months ended March 31, 2023, we sold 1,115,480 shares of common stock for net proceeds of $1.2 million.

Cash Flows

The following table summarizes our sources and uses of cash for each of the periods presented:

	Three Months Ended March 31,	
(in thousands)	**2023**	**2022**
Net cash provided by (used in):		
Operating activities	$ (10,969)	$ (8,606)
Investing activities	(16,048)	—
Financing activities	1,119	—
Net decrease in cash and cash equivalents	$ (25,898)	$ (8,606)

Operating Activities

Net cash used in operating activities was $11.0 million and $8.6 million for the three months ended March 31, 2023 and 2022, respectively. The increase in cash used in operations was primarily due to the clinical and manufacturing activities associated with the clinical development programs and higher personnel costs. The net cash used in operating activities during the three months ended March 31, 2023 was primarily due to our net loss of $11.5 million adjusted for $1.5 million of non-cash charges, primarily for stock-based compensation, and a $1.0 million change in operating assets and liabilities. Net cash used in operating activities during the three months ended March 31, 2022 was primarily due to our net loss of $9.9 million adjusted for $2.0 million of non-cash charges, primarily for stock-based compensation, and a $0.7 million change in operating assets and liabilities.

Investing Activities

During the three months ended March 31, 2023, net cash used in investing activities was $16.0 million consisting primarily of net purchases of available-for-sale securities. No cash was used or provided by investing activities for the three months ended March 31, 2022.

Financing Activities

Net cash provided by financing activities was $1.1 million and none for the three months ended March 31, 2023 and 2022, respectively. The net cash provided during 2023 resulted primarily from the proceeds received from the sale of common stock under the "at-the-market" program.

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. Our product candidates have not yet achieved regulatory approval and we may not be successful in achieving commercialization of our product candidates.

We believe that our existing cash and cash equivalents will be sufficient to fund our operations into 2025. However, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially. 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 the sufficient safety and efficacy data necessary to obtain regulatory approvals. As a result of these and other risks and uncertainties and the probability of success, the duration and the cost of our research and development activities required to advance a product candidate cannot be accurately estimated and are subject to considerable variation. We may encounter difficulties, complications, delays and other unknown factors and unforeseen expenses in the course of our research and development activities, any of which may significantly increase our capital requirements and could adversely affect our liquidity.

We will require additional capital for the research and development of our product candidates, and we may be forced to seek additional funds sooner than expected to pursue our research and development activities. We expect to finance our capital requirements in the foreseeable future through a combination of the sale of public or private equity or debt securities, government funding, or other sources, including potentially collaborations, licenses and other similar arrangements. There can be no assurance that we will be able to obtain any sources of financing on acceptable terms, or at all. To the extent that we can raise additional funds by issuing equity securities, our stockholders may experience significant dilution. Any debt financing, if available, may involve restrictive covenants that may impact our ability to conduct our business. 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 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 type, number, scope, progress, expansions, results, costs and timing of our preclinical studies and clinical trials of our ROR1, CAR T, and DAARI product candidates or additional indications of our other potential product candidates that we may choose to pursue in the future;
- the costs and timing of manufacturing for our product candidates, including commercial manufacturing if any product candidate is approved;
- the costs and capacity for third-party process development and manufacturing, including for CAR T and lentivirus;
- the costs, timing and outcome of seeking and obtaining worldwide regulatory approvals for our product candidates;
- the costs of obtaining, maintaining and enforcing our patents and other intellectual property rights;
- the costs associated with hiring additional personnel, CROs and consultants as our preclinical and clinical activities increase;
- our ability to achieve sufficient market acceptance, adequate coverage and reimbursement from third-party payors and adequate market share and revenue for any approved products;
- the cost and timing of establishing sales, marketing, manufacturing and distribution capabilities for, and the pricing and reimbursement of, any products for which we may receive regulatory approval;
- the costs incurred as a result of the COVID-19 pandemic, including preclinical, manufacturing and clinical trial delays;
- the terms and timing of establishing and maintaining potential collaborations, strategic alliances and other similar arrangements, including milestone or other payments under our existing in-license agreements and any in-license agreements that we may enter into in the future; and
- costs associated with any products or technologies that we may in-license or acquire.

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.

In April 2021, our Form S-3 registration statement became effective. Future sales of our common stock, if any, will depend on a variety of factors including, but not limited to, the expected timing for achieving key milestones, including announcing the first-in-human dosing of ONCT-808, our lead cell therapy product candidate targeting ROR1, and advancing ONCT-534, our DAARI preclinical product candidate, prevailing market conditions, the trading price of our common stock and our capital needs. There can be no assurance that we will be successful in consummating future sales of our securities based on prevailing market conditions or in the quantities or at the prices that we deem appropriate.

In December 2021, we entered into an Open Market Sales Agreement[SM], or the Sales Agreement, pursuant to which we are able to offer and sell, from time to time, shares of our common stock having an aggregate offering price of up to $50.0 million. We have no obligation to sell any shares under the Sales Agreement and may at any time suspend solicitation and offers under the Sales Agreement.

Contractual Obligations and Commitments

We are party to a number of license agreements, pursuant to which we have payment obligations that are contingent upon future events such as our achievement of specified development, regulatory and commercial milestones and are required to make royalty payments in connection with the sale of products developed under those agreements. As of March 31, 2023, we were unable to estimate the timing or likelihood of achieving the milestones or making future product sales. See Note 5 to our condensed consolidated financial statements included elsewhere in this Quarterly Report for a description of these agreements.

We enter into contracts in the normal course of business with clinical trial sites and clinical supply manufacturers and with vendors for preclinical studies, research supplies and other services and products for operating purposes. These contracts generally provide for termination after a notice period and, therefore, are cancelable contracts.

Critical Accounting Policies and Estimates

Management's discussion and analysis of our financial condition and results of operations are based on our condensed consolidated financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States. The preparation of the financial statements requires us to make estimates and judgments that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported expenses incurred during the reporting periods.

Our estimates are based on our historical experience, trends and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We consider our critical accounting policies and estimates to be related to research and development expenses and accruals, and revenue recognition. There have been no material changes to our critical accounting policies and estimates during the three months ended March 31, 2023, from those disclosed in "Management's Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies & Estimates," included in our Annual Report on Form 10-K for the year ended December 31, 2022.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISKS

We are a smaller reporting company, as defined by Rule 12b-2 of the Exchange Act, and are not required to provide the information required under this item.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain "disclosure controls and procedures" as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act that are designed to ensure that information required to be disclosed in the reports we file and submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, who serve as our principal executive officer and principal financial officer, respectively, has evaluated the effectiveness of our disclosure controls and procedures as of March 31, 2023. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of such date.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the three months ended March 31, 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations of Disclosure Controls and Internal Control over Financial Reporting

Because of their inherent limitations, our disclosure controls and procedures and our internal control over financial reporting may not prevent material errors or fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. The effectiveness of our disclosure controls and procedures and our internal control over financial reporting is subject to risks, including that the controls may become inadequate because of changes in conditions or that the degree of compliance with our policies or procedures may deteriorate.

PART II — OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

From time to time, we may be involved in various claims and legal proceedings relating to claims arising out of our operations. We are not currently a party to any legal proceedings that, in the opinion of our management, are likely to have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

ITEM 1A. RISK FACTORS

An investment in our securities involves a high degree of risk. You should carefully consider the specific factors discussed below, as well as all other information included in this Quarterly Report on Form 10-Q, including our financial statements, the notes thereto and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations." If any of the following risks actually occurs, our business, financial condition, operating results, prospects and ability to accomplish our strategic objectives could be materially harmed. As a result, the trading price of our common stock could decline and you could lose all or part of your investment. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations. The occurrence of any of these known or unknown risks might cause you to lose all or part of your investment in our securities.

There have been no material changes to the risk factors included in "Item 1A. Risk Factors" of our Annual Report on Form 10-K for the year ended December 31, 2022 other than as follows:

We depend heavily on the success of our product candidates, which are in clinical or preclinical development. If we are unable to advance our product candidates in clinical development, obtain regulatory approval and ultimately commercialize our product candidates, or experience significant delays in doing so, our business will be materially harmed.

Our lead clinical-stage product candidate is ONCT-808, a CAR T therapy candidate that targets ROR1 as a potential treatment for hematologic cancers and solid tumors for the treatment of patients with relapsed or refractory aggressive B-cell lymphoma, including patients who have failed previous CD19 CAR T treatment. ONCT-808 is being evaluated in a Phase 1/2 dose escalation clinical trial for the treatment of patients with relapsed or refractory aggressive B-cell lymphoma, including patients who have failed previous CD19 CAR T treatment. We expect to present initial clinical date from this study in late 2023 and additional clinical data readouts in 2024. Our pipeline also includes ONCT-534, an investigational dual-action androgen receptor inhibitor, that in development as a potential treatment for castration resistant prostate cancer and other androgen-receptor dependent diseases. We expect to submit an IND in mid-2023 and, assuming the IND becomes effective, initiate a Phase 1/2 clinical trial in patients with castrate resistant prostate cancer by the end of 2023. Our ability to generate product revenues, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our product candidates. The success of our product candidates will depend on various factors, including the following:

- successful initiation and completion of preclinical and clinical studies with favorable results;
- acceptance of INDs, by the FDA, or under similar regulatory applications by comparable foreign regulatory authorities for the conduct of clinical trials of our product candidates and our proposed designs for future clinical trials;
- demonstrating safety and efficacy of our product candidates to the satisfaction of applicable regulatory authorities;
- receiving marketing approvals from applicable regulatory authorities, including BLAs or NDAs from the FDA, and maintaining such approvals;
- making arrangements with our third-party manufacturers for commercial manufacturing capabilities and manufacturing process optimization for our product candidates;
- our ability and the ability of third parties with whom we contract to manufacture adequate clinical and commercial supplies of our product candidates, remain in good standing with regulatory authorities and develop, validate and maintain commercially viable manufacturing processes that are compliant with cGMP;
- establishing and maintaining patent and trade secret protection or regulatory exclusivity for our product candidates;
- the demonstration of an acceptable safety profile of our products following approval, if any;
- developing, in-licensing or acquiring companion diagnostics to our product candidates; and
- maintaining and growing an organization for people who can develop our product candidates and technology.

For example, in April 2023 we announced a strategic reprioritization of the development of zilovertamab and our decision to close the Phase 3 ZILO-301 and the Phase 1/2 CIRM-0001 clinical studies, based on the rapidly changing commercial landscape for Bruton's tyrosine kinase inhibitors. We cannot provide any assurance that our reprioritization decision will reap the expected benefits, and our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Many of the factors listed above are beyond our control and could cause us to experience significant delays or prevent us from obtaining regulatory approvals or commercializing our product candidates. If we are unable to develop, or obtain regulatory approval for, or, if approved, successfully commercialize our product candidates, we may not be able to generate sufficient revenue to continue our business.

We will require substantial additional financing to achieve our goals, and a failure to obtain this necessary capital when needed and on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our product development programs, commercialization efforts or other operations.

The development of biopharmaceutical product candidates is capital-intensive. We expect advance our product candidates 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.our expenses to increase in connection with our ongoing activities, particularly as we conduct our ongoing and planned clinical trials of ONCT-808 and ONCT-534, continue research and development and initiate clinical trials of our other development programs, including zilovertamab, and seek regulatory approval for our current product candidates and any future product candidates we may develop. In addition, as our product candidates progress through development and toward commercialization, we will need to make milestone payments to the licensors and other third parties from whom we have in-licensed or acquired our product candidates, including ONCT-808 and ONCT-534, and any candidates from our zilovertamab program. If we obtain regulatory approval for any of our product candidates, we also expect to incur significant commercialization expenses related to product manufacturing, marketing, sales and distribution and we will need to make royalty payments to the licensors and / or other third parties from whom we have in-licensed or acquired our product candidates. , we expect our research and development expenses will decrease in future quarters after we close the Phase 3 ZILO-301 Study for the treatment of patients with relapsed or refractory MCL and the Phase 1/2 CIRM-0001 Study for the treatment of MCL, CLL and MZL, and implement other cost reductions. We will continue to invest in: (i) advancing our product candidates into later stages of clinical development, and (ii) further investigation and the development of our other preclinical programs.

Because the outcome of any clinical trial or preclinical study is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of our product candidates. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts.

We have based our estimates on assumptions that may prove to be wrong, and we could use our capital resources sooner than we currently expect. Our operating plans and other demands on our cash resources may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through a combination of equity financings, debt financings, government funding or other capital sources, including potentially collaborations, licenses and other similar arrangements. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. Attempting to secure additional financing may divert our management from our day-to-day activities, which may adversely affect our ability to develop our product candidates.

Our future capital requirements will depend on many factors, including:

- the type, number, scope, progress, expansions, results, costs and timing of our clinical trials of ONCT-808 and ONCT-534, and preclinical studies or clinical trials of zilovertamab program or additional indications of our current product candidates as well as other product candidates that we may choose to pursue in the future;
- the costs and timing of manufacturing our product candidates, including commercial manufacturing if any product candidate is approved;
- the costs and timing of manufacturing our product candidates, including commercial manufacturing if any product candidate is approved;
- the costs and capacity for CAR T development and lentivirus manufacturing;
- the costs, timing and outcome of regulatory review of our product candidates;
- the costs of obtaining, maintaining and enforcing our patents and other intellectual property rights;
- our efforts to enhance operational systems and hire additional personnel to satisfy our obligations as a public company, including enhanced internal controls over financial reporting;
- the costs associated with hiring additional personnel, contract research organizations, or CROs and consultants as our clinical and other development activities increase;
- the timing and amount of the milestone or other payments we must make to the licensors and other third parties from whom we have in-licensed or acquired our product candidates or technology;
- the costs and timing of establishing or securing sales and marketing capabilities if any of our product candidates are approved;
- our ability to achieve sufficient market acceptance, coverage and adequate reimbursement from third-party payors and adequate market share and revenue for any approved products;
- the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements;
- the costs incurred as a result of the COVID-19 pandemic, including clinical trial delays and potential impacts on our supply chain activities; and
- costs associated with any products or technologies that we may in-license or acquire.

Conducting clinical trials and preclinical studies is a time consuming, expensive, and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of products that we do not expect to be commercially available for many years, if at all.

Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all. In addition, we may seek additional capital due to favorable market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans.

In April 2021, our Form S-3 shelf registration statement became effective. Future sales under a Form S-3, if any, will depend on a variety of factors including, but not limited to, the effectiveness of a Form S-3, prevailing market conditions, the trading price of our common stock, our public float and our capital needs. In December 2021, we entered into an Open Market Sales AgreementSM, or the Sales Agreement, with Jefferies LLC, or the Sales Agent, pursuant to which we may offer and sell shares of our common stock having an aggregate offering price of up to $50.0 million pursuant to the Form S-3 registration statement. There can be no assurance that the Sales Agent will be successful in consummating future sales based on prevailing market conditions or in the quantities or at the prices that we deem appropriate. In addition, under current SEC regulations, as of the filing of this annual report on Form 10-K, our public float is less than $75 million, and under SEC regulations for so long as our public float remains less than $75 million, the amount we can raise through primary public offerings of securities in any twelve-month period using shelf registration statements is limited to an aggregate of one-third of our public float, which is referred to as the baby shelf rules. As of April 27, 2023, our public float was approximately $16.9 million, based on 53,705,479 shares of outstanding common stock held by non-affiliates and at a price of $0.32 per share, which was the last reported sale price of our common stock on the Nasdaq Capital Market on April 27, 2023. As a result of our public float being below $75 million, we will be limited by the baby shelf rules until such time as our public float exceeds $75 million, which means we only have the capacity to sell shares up to one-third of our public float under shelf registration statements in any twelve-month period. As of April 27, 2023, we had the capacity to issue up to approximately $38.8 million of additional shares of common stock pursuant to the Sales Agreement. We will remain constrained by the baby shelf rules under our Form S-3 shelf

registration statement until such time as our public float exceeds $75 million, at which time, the number of securities we may sell under a Form S-3 registration statement will no longer be limited by the baby shelf rules.

Unstable market and economic conditions and adverse developments with respect to financial institutions and associated liquidity risk may have serious adverse consequences on our business, financial condition and stock price.

The global credit and financial markets have recently experienced extreme volatility and disruptions, including severely diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, rising interest and inflation rates, increases in unemployment rates and uncertainty about economic stability. The financial markets and the global economy may also be adversely affected by the current or anticipated impact of military conflict, including the conflict between Russia and Ukraine, terrorism or other geopolitical events. Sanctions imposed by the U.S. and other countries in response to such conflicts, including the one in Ukraine, may also adversely impact the financial markets and the global economy, and any economic countermeasures by affected countries and others could exacerbate market and economic instability. More recently, the closures of Silicon Valley Bank, or SVB, and Signature Bank and their placement into receivership with the Federal Deposit Insurance Corporation, or FDIC, created bank-specific and broader financial institution liquidity risk and concerns. Although the Department of the Treasury, the Federal Reserve, and the FDIC jointly released a statement that depositors at SVB and Signature Bank would have access to their funds, even those in excess of the standard FDIC insurance limits, under a systemic risk exception, future adverse developments with respect to specific financial institutions or the broader financial services industry may lead to market-wide liquidity shortages, impair the ability of companies to access near-term working capital needs, and create additional market and economic uncertainty. There can be no assurance that further deterioration in credit and financial markets and confidence in economic conditions will not occur. Our general business strategy may be adversely affected by any such economic downturn, liquidity shortages, volatile business environment or continued unpredictable and unstable market conditions. If the current equity and credit markets deteriorate, or if adverse developments are experienced by financial institutions, it may cause short-term liquidity risk and also make any necessary debt or equity financing more difficult, more costly, more onerous with respect to financial and operating covenants and more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our growth strategy, financial performance and stock price and could require us to delay or abandon clinical development plans. In addition, there is a risk that one or more of our current service providers, financial institutions, manufacturers and other partners may be adversely affected by the foregoing risks, which could directly affect our ability to attain our operating goals on schedule and on budget.

Our failure to meet the continued listing requirements of the Nasdaq Capital Market could result in a delisting of our common stock.

Our common stock is listed on the Nasdaq Capital Market. In order to maintain our listing, we must meet minimum financial and other requirements, such as the minimum closing bid price of at least $1.00, stockholders' equity, round lot holders requirements and the corporate governance requirements. If we fail to satisfy such requirements, Nasdaq may take steps to delist our common stock.

On April 4, 2023, we received a letter from the Nasdaq staff indicating that, for the last thirty consecutive business days, the bid price for our common stock had closed below the minimum $1.00 per share requirement for continued listing on The Nasdaq Capital Market under Nasdaq Listing Rule 5550(a)(2). In accordance with Nasdaq Listing Rule 5810(c)(3)(A), we have been provided an initial period of 180 calendar days, or until October 2, 2023, to regain compliance. We will regain compliance under this rule if at any time before October 2, 2023, the bid price of our common stock closes at $1.00 per share or more for a minimum of ten consecutive business days. The Nasdaq letter had no immediate effect on the listing or trading of our common stock and such securities continue to trade on the Nasdaq Capital Market.

We have not regained compliance with Nasdaq listing rules as of the filing date of this Quarterly Report on Form 10-Q.

We intend to monitor the bid price of our common stock and consider available options if our common stock does not trade at a level likely to result in us regaining compliance with Nasdaq's minimum bid price rule by October 2, 2023, including potentially implementing a reverse stock split of our outstanding common stock (if approved by our stockholders) to attempt to regain compliance. If we do not regain compliance with Rule 5550(a)(2) by October 2, 2023, we may be eligible for an additional 180 calendar day compliance period. To qualify, we would be required to meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for the Nasdaq Capital Market, with the exception of the bid price requirement, and would need to provide written notice of our intention to cure the deficiency during the second compliance period, by effecting a reverse stock split, if necessary. However, if it appears to the Nasdaq staff that we will not be able to cure the deficiency, or if we are otherwise not eligible, the Nasdaq staff would notify us that our securities would be subject to delisting. In the event of such a notification, we may appeal the Nasdaq staff's determination to delist our securities, but there can be no assurance the Nasdaq staff would grant our request for continued listing.

Such a delisting would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our securities when you wish to do so. Such a delisting could also result in a limited amount of news and analyst coverage for the company; and a decreased ability for us to issue additional securities or obtain additional financing in the future. In the event of a delisting, we can provide no assurance that any action taken by us to restore compliance with listing requirements would allow our securities to become listed again, stabilize the market price or improve the liquidity of our securities, or prevent future non-compliance with Nasdaq's listing requirements.

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

None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

Not applicable.

Item 6. Exhibits.

EXHIBIT INDEX

Exhibit Number	Exhibit Description	Incorporation by Reference			
		Form	File no.	Exhibit No.	Filing Date
3.1	Restated Certificate of Incorporation of the Registrant dated February 6, 2004 ("Restated Certificate")	S-3	333-127175	4.1	4-Aug-05
3.1.1	Certificate of Amendment of Restated Certificate dated May 6, 2011	8-K	000-50549	3.2	6-May-11
3.1.2	Certificate of Amendment of Restated Certificate dated May 6, 2014	8-K	000-50549	3.3	9-May-14
3.1.3	Certificate of Amendment of Restated Certificate dated May 6, 2015	10-Q	000-50549	3.4	11-May-15
3.1.4	Certificate of Amendment of Restated Certificate dated December 5, 2016	8-K	000-50549	3.1	5-Dec-16
3.1.5	Certificate of Amendment of Restated Certificate dated June 7, 2019 related to the Reverse Stock Split of the Registrant	8-K	000-50549	3.1	10-Jun-19
3.1.6	Certificate of Amendment of Restated Certificate dated June 7, 2019 related to the Name Change of the Registrant	8-K	000-50549	3.2	10-Jun-19
3.1.7	Certificate of Amendment of Restated Certificate dated May 25, 2021	8-K	000-50549	3.1	28-May-21
3.2	Amended and Restated Bylaws of the Registrant	8-K	000-50549	3.3	10-Jun-19
4.1	Specimen of Common Stock Certificate	10-Q	000-50549	4.2	9-Aug-19
4.2	Form of Common Stock Warrant, issued by Registrant pursuant to the Purchase Agreement dated September 25, 2017, between Registrant and the purchasers identified in Exhibit A therein	S-3	333-221040	4.9	20-Oct-17
4.3	Form of Warrant to purchase shares of Series B-2 Preferred Stock of Registrant	S-4	333-230758	4.11	8-Apr-19
4.3.1	Form of Amendment to Warrant to Purchase shares of Series B-2 Preferred Stock of Private Oncternal	10-Q	000-50549	4.1	9-Aug-19
4.4	Form of Common Stock Warrant, issued by Registrant pursuant to the Securities Purchase Agreement dated May 19, 2020, between the Registrant and the purchasers signatory thereto ("May 2020 Purchase Agreement")	8-K	000-50549	4.1	21-May-20
4.5	Form of Placement Agent Warrant, issued by Registrant pursuant to the May 2020 Purchase Agreement	8-K	000-50549	4.2	21-May-20
4.6	Form of Common Stock Warrant, issued by Registrant pursuant to the Securities Purchase Agreement dated July 17, 2020, between the Registrant and the purchasers signatory thereto (the "July 2020 Purchase Agreement")	8-K	000-50549	4.1	21-Jul-20
4.7	Form of Placement Agent Warrant, issued by Registrant pursuant to the July 2020 Purchase Agreement.	8-K	000-50549	4.2	21-Jul-20
4.8	Form of Underwriter Warrant, issued by Registrant pursuant to the Amended and Restated Underwriting Agreement dated August 27, 2020, between the Registrant and H.C. Wainwright & Co., LLC ("H.C. Wainwright")	8-K	000-50549	4.1	31-Aug-20

4.9	Form of Underwriter Warrant, issued by Registrant pursuant to the Amended and Restated Underwriting Agreement dated November 17, 2020, between the Registrant and H.C. Wainwright	8-K	000-50549	4.1	19-Nov-20
4.10	Form of Underwriter Warrant, issued by Registrant pursuant to the Amended and Restated Underwriting Agreement dated December 9, 2020, between the Registrant and H.C. Wainwright	8-K	000-50549	4.1	11-Dec-20
10.1*#	Letter agreement with James B. Breitmeyer, M.D., Ph.D. dated March 31, 2023				
10.2*#	Letter agreement with Salim Yazji, M.D. dated March 31, 2023				
10.3*#	Letter agreement with Gunnar Kaufmann, Ph.D. dated March 31, 2023				
10.4*#	Letter agreement with Richard Vincent dated March 31, 2023				
10.5*#	Letter agreement with Chase C. Leavitt dated March 31, 2023				
10.6*#	Letter agreement with Rajesh Krishnan, Ph.D. dated March 31, 2023				
31.1*	Certification of Chief Executive Officer of the Registrant, as required by Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended.				
31.2*	Certification of Chief Financial Officer of the Registrant, as required by Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended.				
32.1‡	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
32.2‡	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
101.INS*	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document				
101.SCH*	Inline XBRL Taxonomy Extension Schema Document				
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document				
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document				
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document				
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document				
104*	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)				

* Filed herewith
# Management contract or compensatory plan
‡ Furnished herewith
† Pursuant to Item 601(b)(10) of Regulation S-K, certain confidential portions of this exhibit were omitted by means of marking such portions with an asterisk because the identified confidential portions (i) are not material and (ii) would be competitively harmful if publicly disclosed.

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.

Oncternal Therapeutics, Inc.

Date: May 4, 2023 By: /s/ James B. Breitmeyer

Name: James B. Breitmeyer
Title: President and Chief Executive Officer

Date: May 4, 2023 By: /s/ Richard G. Vincent

Name: Richard G. Vincent
Title: Chief Financial Officer

March 31, 2023

James Breitmeyer, M.D., Ph.D. Oncternal Therapeutics, Inc.

Dear Dr. Breitmeyer:

Oncternal Therapeutics, Inc. (the "***Company***") is providing this letter agreement to set forth agreements between you and the Company related to your compensation. This letter agreement amends the Employment Agreement between you and the Company, dated September 12, 2019 (the "***Employment Agreement***").

1. Base Salary Reduction

Effective as of April 1, 2023, your annual base salary rate will be reduced temporarily from $608,867 ("***Previous Salary***") to $487,094, to be paid in accordance with the Company's customary payroll procedures. In addition, effective as of the earlier of: (1) January 1, 2025; or (2) a Change in Control (as defined in the Employment Agreement), your annual base salary rate will be reinstated to $608,867, or such other amount agreed between you and the Compensation Committee of the Board of Directors of the Company (the "***Committee***").

2. 2023 Annual Bonus

Notwithstanding anything to the contrary contained in Section 3(b) of your Employment Agreement or the Company's Annual Incentive Plan, you hereby agree that you will not be eligible to receive an annual bonus relating to performance during 2023.

3. Retention Bonus

(a)Subject to the terms of, and except as otherwise provided in, this Section 3, you will be eligible to receive a bonus (the "***Retention Bonus***"), consisting of: (1) the annual bonus you would have been eligible to receive under the Company's Annual Incentive Plan based on the Company's actual performance for 2023, as determined by the Committee following the completion of 2023, had you been a participant in the Annual Incentive Plan with a target bonus opportunity of up to 50% of your Previous Salary (such amount as determined by the Committee, the "***Performance Retention Component***"), which determination shall occur between January 1, 2024 and March 15, 2024 (the date of such determination, the "***Determination Date***"); and (2) a potential additional cash amount (such amount, the "***Cash Retention Component***") equal to: (x) $334 multiplied by; (y) the number of calendar days elapsed from April 1, 2023 through the earlier of: (a) a Change in Control (as defined in the Employment Agreement); and (b) the date your employment terminates.

(b)Except as provided in Sections 3(c) and 3(d), if your employment terminates: (1) prior to January 1, 2024, then this letter agreement will terminate and you will forfeit any right you may have to receive the Retention Bonus; (2) between January 1, 2024 and the Determination Date, you will be eligible to receive only the Cash Retention Component of the Retention Bonus. If you continue employment through

the Determination Date, you will be eligible to receive both the Performance Retention Component and Cash Retention Component of your Retention Bonus. The Retention Bonus, if any, payable pursuant to this Section 3(b) will be paid in cash in a lump sum between January 1, 2025 and March 15, 2025. You will continue to be considered an employee of the Company for purposes of this letter agreement if you are on a Company-approved leave of absence.

(c)In the event of your Involuntary Termination or, subject to your continued employment through the date of a Change in Control, a Change in Control, in each case on or prior to the Determination Date, you will be eligible to receive only the Cash Retention Component of the Retention Bonus, which will be paid in accordance with Section 3(e). If a Change in Control occurs on or prior to December 31, 2023, you shall again be eligible to receive an annual bonus for 2023 in accordance with Section 3(b) of your Employment Agreement and subject to the terms of the Company's Annual Incentive Plan.

(d)In the event of a Change in Control between the Determination Date and December 31, 2024, subject to your continued employment through the date of such Change in Control, you will be eligible to receive both the Performance Retention Component and Cash Retention Component of the Retention Bonus, which will be paid in accordance with Section 3(e).

(e)In the event you are eligible to receive a Retention Bonus as a result of a Change in Control, such Retention Bonus shall be paid 10 days following the date of such Change in Control. In the event you are eligible to receive a Retention Bonus as a result of your Involuntary Termination, you will be eligible to receive your Retention Bonus in cash in a lump sum within 10 days following the effective date of your Release (as defined below). As a condition to your receipt of any Retention Bonus resulting from your Involuntary Termination, you shall execute and not revoke a general release of all claims in favor of the Company and its affiliates (the "***Release***") in the form attached to the Employment Agreement as *Exhibit A*. In the event the Release does not become effective within the 55-day period following the date of your Involuntary Termination, you shall not be entitled to the Retention Bonus.

4. Relationship to Other Compensation

The Retention Bonus described herein is independent of all other compensation and is in addition to any severance to which you may be entitled upon an Involuntary Termination as provided in Section 4(b) of the Employment Agreement. In the event of your Involuntary Termination (as defined in the Employment Agreement) prior to January 1, 2025, your Previous Salary will be used for calculating your severance entitlements pursuant to Sections 4(b) of the Employment Agreement.

5. Tax and Other Deductions

All compensation to be paid to you will be subject to all applicable federal, state and local tax withholding by the Company.

6. Employment at Will

This letter agreement does not affect your employment relationship with the Company; that is, employment with the Company remains at-will as provided in Section 4(a) of the Employment Agreement, subject to your rights to severance in certain circumstances as provided in Section 4(b) of the Employment Agreement.

8. Section 409A of the Internal Revenue Code

This letter agreement is not intended to provide for any deferral of compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended. Section 10(o) of the Employment Agreement is hereby incorporated herein by reference and shall apply to this letter agreement as if set forth herein.

9. Miscellaneous

This letter agreement amends the Employment Agreement to the extent the Employment Agreement is inconsistent with this letter agreement. This letter agreement and the Employment Agreement (as amended hereby) set forth the entire understanding of the parties with respect to the subject matter hereof and supersede all existing agreements between them concerning such subject matter. This letter agreement may be amended or modified only with your written consent and the written consent of an authorized representative of the Company. This letter agreement shall be binding upon and inure to the benefit of the successors of the Company. This letter agreement will not give any rights or remedies to any person other than the undersigned employee and the Company and its successors. This letter agreement will be governed by the laws of the State of California, excluding any that mandate the use of another jurisdiction's laws. You shall have no rights under this letter agreement other than as an unsecured general creditor of the Company.

Please indicate your agreement with these terms of this letter agreement by signing and dating this letter agreement below.

Sincerely,

Oncternal Therapeutics, Inc.

/s/ Richard Vincent

Richard Vincent
Chief Financial Officer

Agreed and accepted:

/s/ James Breitmeyer
Print Name: James Breitmeyer, M.D., Ph.D.

Date: March 31, 2023

March 31, 2023

Salim Yazji, M.D. Oncternal Therapeutics, Inc.

Dear Dr. Yazji:

Oncternal Therapeutics, Inc. (the "***Company***") is providing this letter agreement to set forth agreements between you and the Company related to your compensation. This letter agreement amends the Employment Agreement between you and the Company, dated May 17, 2021 (the "***Employment Agreement***").

1. 2023 Annual Bonus

Notwithstanding anything to the contrary contained in Section 3(b) of your Employment Agreement or the Company's Annual Incentive Plan, you hereby agree that you will not be eligible to receive an annual bonus relating to performance during 2023; however, in the event of a Change in Control (as defined in the Employment Agreement) on or prior to December 31, 2023, this letter agreement shall terminate and you shall again be eligible to receive an annual bonus for 2023 in accordance with Section 3(b) of your Employment Agreement and subject to the terms of the Company's Annual Incentive Plan.

2. Retention Bonus

(a)Subject to Sections 2(b), 2(c) and 2(d) below and your continued employment through the Determination Date (as defined below), you will be eligible to receive a Retention Bonus equal to the annual bonus you would have been eligible to receive under the Company's Annual Incentive Plan based on the Company's actual performance for 2023, as determined by the Compensation Committee of the Board of Directors (the "***Committee***") following the completion of 2023, had you been a participant in the Annual Incentive Plan with a target bonus opportunity of up to 40% of your base salary (such amount as determined by the Committee, the "***Retention Bonus***"), which determination shall occur between January 1, 2024 and March 15, 2024 (the date of such determination, the "***Determination Date***"). The Retention Bonus, if any, will be paid in cash in a lump sum between January 1, 2025 and March 15, 2025. You will continue to be considered an employee of the Company for purposes of this letter agreement if you are on a Company- approved leave of absence.

(b)In the event of a Change in Control during 2024, subject to your continued employment through the earlier of: (1) the Determination Date; or (2) the date of the Change in Control, you will be eligible to receive your Retention Bonus in cash in a lump sum within 10 days following the date of the Change in Control.

(c)In the event of your Involuntary Termination (as defined in the Employment Agreement) on or after the Determination Date but on or prior to the date you have received the Retention Bonus, you will be eligible to receive your Retention Bonus in cash in a lump sum within 10 days following the effective date of your Release (as defined below). As a condition to your receipt of the Retention Bonus pursuant to this Section 2(c), you shall execute and not revoke a general release of all claims in favor of the Company and its affiliates (the "***Release***") in the form attached to the Employment Agreement as *Exhibit A*. In the event the Release does not become effective within the 55-day period following the date of your Involuntary Termination, you shall not be entitled to the Retention Bonus.

(d)If your employment terminates prior to the Determination Date for any reason, then this letter agreement will terminate, and you will forfeit any right you may have to receive the Retention Bonus.

3. Relationship to Other Compensation

The Retention Bonus described herein is independent of all other compensation and is in addition to any severance to which you may be entitled upon an Involuntary Termination as provided in Section 4(b) of the Employment Agreement.

4. Tax and Other Deductions

All compensation to be paid to you will be subject to all applicable federal, state and local tax withholding by the Company.

5. Employment at Will

This letter agreement does not affect your employment relationship with the Company; that is, employment with the Company remains at-will as provided in Section 4(a) of the Employment Agreement, subject to your rights to severance in certain circumstances as provided in Section 4(b) of the Employment Agreement.

6. Section 409A of the Internal Revenue Code

This letter agreement is not intended to provide for any deferral of compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended. Section 10(o) of the Employment Agreement is hereby incorporated herein by reference and shall apply to this letter agreement as if set forth herein.

7. Miscellaneous

This letter agreement amends the Employment Agreement to the extent the Employment Agreement is inconsistent with this letter agreement. This letter agreement and the Employment Agreement (as amended hereby) set forth the entire understanding of the parties with respect to the subject matter hereof and supersede all existing agreements between them concerning such subject matter. This letter agreement may be amended or modified only with the written consent of Executive and an authorized representative of the Company. This letter agreement shall be binding upon and inure to the benefit of the successors of the Company. This letter agreement will not give any rights or remedies to any person other than the undersigned employee and the Company and its successors. This letter agreement will be governed by the laws of the State of California, excluding any that mandate the use of another jurisdiction’s laws. You shall have no rights under this letter agreement other than as an unsecured general creditor of the Company.

Please indicate your agreement with these terms of this letter agreement by signing and dating this letter agreement below.

[*Remainder of page intentionally left blank*]

Sincerely,

Oncternal Therapeutics, Inc.

/s/ Richard Vincent

Richard Vincent
Chief Financial Officer

Agreed and accepted:

/s/ Salim Yazji
Print Name: Salim Yazji, M.D.

Date: March 31, 2023

March 31, 2023

Gunnar Kaufmann, Ph.D. Oncternal Therapeutics, Inc.

Dear Dr. Kaufmann:

Oncternal Therapeutics, Inc. (the "***Company***") is providing this letter agreement to set forth agreements between you and the Company related to your compensation. This letter agreement amends the Employment Agreement between you and the Company, dated September 5, 2019 (the "***Employment Agreement***").

1. 2023 Annual Bonus

Notwithstanding anything to the contrary contained in Section 3(b) of your Employment Agreement or the Company's Annual Incentive Plan, you hereby agree that you will not be eligible to receive an annual bonus relating to performance during 2023; however, in the event of a Change in Control (as defined in the Employment Agreement) on or prior to December 31, 2023, this letter agreement shall terminate and you shall again be eligible to receive an annual bonus for 2023 in accordance with Section 3(b) of your Employment Agreement and subject to the terms of the Company's Annual Incentive Plan.

2. Retention Bonus

(a)Subject to Sections 2(b), 2(c) and 2(d) below and your continued employment through the Determination Date (as defined below), you will be eligible to receive a Retention Bonus equal to the annual bonus you would have been eligible to receive under the Company's Annual Incentive Plan based on the Company's actual performance for 2023, as determined by the Compensation Committee of the Board of Directors (the "***Committee***") following the completion of 2023, had you been a participant in the Annual Incentive Plan with a target bonus opportunity of up to 40% of your base salary (such amount as determined by the Committee, the "***Retention Bonus***"), which determination shall occur between January 1, 2024 and March 15, 2024 (the date of such determination, the "***Determination Date***"). The Retention Bonus, if any, will be paid in cash in a lump sum between January 1, 2025 and March 15, 2025. You will continue to be considered an employee of the Company for purposes of this letter agreement if you are on a Company- approved leave of absence.

(b)In the event of a Change in Control during 2024, subject to your continued employment through the earlier of: (1) the Determination Date; or (2) the date of the Change in Control, you will be eligible to receive your Retention Bonus in cash in a lump sum within 10 days following the date of the Change in Control.

(c)In the event of your Involuntary Termination (as defined in the Employment Agreement) on or after the Determination Date but on or prior to the date you have received the Retention Bonus, you will be eligible to receive your Retention Bonus in cash in a lump sum within 10 days following the effective date of your Release (as defined below). As a condition to your receipt of the Retention Bonus pursuant to this Section 2(c), you shall execute and not revoke a general release of all claims in favor of the Company and its affiliates (the "***Release***") in the form attached to the Employment Agreement as *Exhibit A*. In the event the Release does not become effective within the 55-day period following the date of your Involuntary Termination, you shall not be entitled to the Retention Bonus.

(d)If your employment terminates prior to the Determination Date for any reason, then this letter agreement will terminate, and you will forfeit any right you may have to receive the Retention Bonus.

3. Relationship to Other Compensation

The Retention Bonus described herein is independent of all other compensation and is in addition to any severance to which you may be entitled upon an Involuntary Termination as provided in Section 4(b) of the Employment Agreement.

4. Tax and Other Deductions

All compensation to be paid to you will be subject to all applicable federal, state and local tax withholding by the Company.

5. Employment at Will

This letter agreement does not affect your employment relationship with the Company; that is, employment with the Company remains at-will as provided in Section 4(a) of the Employment Agreement, subject to your rights to severance in certain circumstances as provided in Section 4(b) of the Employment Agreement.

6. Section 409A of the Internal Revenue Code

This letter agreement is not intended to provide for any deferral of compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended. Section 10(o) of the Employment Agreement is hereby incorporated herein by reference and shall apply to this letter agreement as if set forth herein.

7. Miscellaneous

This letter agreement amends the Employment Agreement to the extent the Employment Agreement is inconsistent with this letter agreement. This letter agreement and the Employment Agreement (as amended hereby) set forth the entire understanding of the parties with respect to the subject matter hereof and supersede all existing agreements between them concerning such subject matter. This letter agreement may be amended or modified only with the written consent of Executive and an authorized representative of the Company. This letter agreement shall be binding upon and inure to the benefit of the successors of the Company. This letter agreement will not give any rights or remedies to any person other than the undersigned employee and the Company and its successors. This letter agreement will be governed by the laws of the State of California, excluding any that mandate the use of another jurisdiction’s laws. You shall have no rights under this letter agreement other than as an unsecured general creditor of the Company.

Please indicate your agreement with these terms of this letter agreement by signing and dating this letter agreement below.

[*Remainder of page intentionally left blank*]

Sincerely,

Oncternal Therapeutics, Inc.

/s/ Richard Vincent

Richard Vincent
Chief Financial Officer

Agreed and accepted:

/s/ Gunnar Kaufmann
Print Name: Gunnar Kaufmann, Ph.D.

Date: March 31, 2023

March 31, 2023

Richard Vincent
Oncternal Therapeutics, Inc. Dear Mr. Vincent:

Oncternal Therapeutics, Inc. (the "***Company***") is providing this letter agreement to set forth agreements between you and the Company related to your compensation. This letter agreement amends the Employment Agreement between you and the Company, dated September 12, 2019 (the "***Employment Agreement***").

1. 2023 Annual Bonus

Notwithstanding anything to the contrary contained in Section 3(b) of your Employment Agreement or the Company's Annual Incentive Plan, you hereby agree that you will not be eligible to receive an annual bonus relating to performance during 2023; however, in the event of a Change in Control (as defined in the Employment Agreement) on or prior to December 31, 2023, this letter agreement shall terminate and you shall again be eligible to receive an annual bonus for 2023 in accordance with Section 3(b) of your Employment Agreement and subject to the terms of the Company's Annual Incentive Plan.

2. Retention Bonus

(a)Subject to Sections 2(b), 2(c) and 2(d) below and your continued employment through the Determination Date (as defined below), you will be eligible to receive a Retention Bonus equal to the annual bonus you would have been eligible to receive under the Company's Annual Incentive Plan based on the Company's actual performance for 2023, as determined by the Compensation Committee of the Board of Directors (the "***Committee***") following the completion of 2023, had you been a participant in the Annual Incentive Plan with a target bonus opportunity of up to 40% of your base salary (such amount as determined by the Committee, the "***Retention Bonus***"), which determination shall occur between January 1, 2024 and March 15, 2024 (the date of such determination, the "***Determination Date***"). The Retention Bonus, if any, will be paid in cash in a lump sum between January 1, 2025 and March 15, 2025. You will continue to be considered an employee of the Company for purposes of this letter agreement if you are on a Company- approved leave of absence.

(b)In the event of a Change in Control during 2024, subject to your continued employment through the earlier of: (1) the Determination Date; or (2) the date of the Change in Control, you will be eligible to receive your Retention Bonus in cash in a lump sum within 10 days following the date of the Change in Control.

(c)In the event of your Involuntary Termination (as defined in the Employment Agreement) on or after the Determination Date but on or prior to the date you have received the Retention Bonus, you will be eligible to receive your Retention Bonus in cash in a lump sum within 10 days following the effective date of your Release (as defined below). As a condition to your receipt of the Retention Bonus pursuant to this Section 2(c), you shall execute and not revoke a general release of all claims in favor of the Company and its affiliates (the "***Release***") in the form attached to the Employment Agreement as *Exhibit A*. In the event the Release does not become effective within the 55-day period following the date of your Involuntary Termination, you shall not be entitled to the Retention Bonus.

(d)If your employment terminates prior to the Determination Date for any reason, then this letter agreement will terminate, and you will forfeit any right you may have to receive the Retention Bonus.

3. Relationship to Other Compensation

The Retention Bonus described herein is independent of all other compensation and is in addition to any severance to which you may be entitled upon an Involuntary Termination as provided in Section 4(b) of the Employment Agreement.

4. Tax and Other Deductions

All compensation to be paid to you will be subject to all applicable federal, state and local tax withholding by the Company.

5. Employment at Will

This letter agreement does not affect your employment relationship with the Company; that is, employment with the Company remains at-will as provided in Section 4(a) of the Employment Agreement, subject to your rights to severance in certain circumstances as provided in Section 4(b) of the Employment Agreement.

6. Section 409A of the Internal Revenue Code

This letter agreement is not intended to provide for any deferral of compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended. Section 10(o) of the Employment Agreement is hereby incorporated herein by reference and shall apply to this letter agreement as if set forth herein.

7. Miscellaneous

This letter agreement amends the Employment Agreement to the extent the Employment Agreement is inconsistent with this letter agreement. This letter agreement and the Employment Agreement (as amended hereby) set forth the entire understanding of the parties with respect to the subject matter hereof and supersede all existing agreements between them concerning such subject matter. This letter agreement may be amended or modified only with the written consent of Executive and an authorized representative of the Company. This letter agreement shall be binding upon and inure to the benefit of the successors of the Company. This letter agreement will not give any rights or remedies to any person other than the undersigned employee and the Company and its successors. This letter agreement will be governed by the laws of the State of California, excluding any that mandate the use of another jurisdiction’s laws. You shall have no rights under this letter agreement other than as an unsecured general creditor of the Company.

Please indicate your agreement with these terms of this letter agreement by signing and dating this letter agreement below.

[*Remainder of page intentionally left blank*]

Sincerely,

Oncternal Therapeutics, Inc.

/s/ James Breitmeyer

James Breitmeyer
President and Chief Executive Officer

Agreed and accepted:

/s/ Richard Vincent
Print Name: Richard Vincent

Date: March 31, 2023

March 31, 2023

Chase C. Leavitt
Oncternal Therapeutics, Inc. Dear Mr. Leavitt:

Oncternal Therapeutics, Inc. (the "***Company***") is providing this letter agreement to set forth agreements between you and the Company related to your compensation. This letter agreement amends the Employment Agreement between you and the Company, dated April 12, 2021 (the "***Employment Agreement***").

1. 2023 Annual Bonus

Notwithstanding anything to the contrary contained in Section 3(b) of your Employment Agreement or the Company's Annual Incentive Plan, you hereby agree that you will not be eligible to receive an annual bonus relating to performance during 2023; however, in the event of a Change in Control (as defined in the Employment Agreement) on or prior to December 31, 2023, this letter agreement shall terminate and you shall again be eligible to receive an annual bonus for 2023 in accordance with Section 3(b) of your Employment Agreement and subject to the terms of the Company's Annual Incentive Plan.

2. Retention Bonus

(a)Subject to Sections 2(b), 2(c) and 2(d) below and your continued employment through the Determination Date (as defined below), you will be eligible to receive a Retention Bonus equal to the annual bonus you would have been eligible to receive under the Company's Annual Incentive Plan based on the Company's actual performance for 2023, as determined by the Compensation Committee of the Board of Directors (the "***Committee***") following the completion of 2023, had you been a participant in the Annual Incentive Plan with a target bonus opportunity of up to 40% of your base salary (such amount as determined by the Committee, the "***Retention Bonus***"), which determination shall occur between January 1, 2024 and March 15, 2024 (the date of such determination, the "***Determination Date***"). The Retention Bonus, if any, will be paid in cash in a lump sum between January 1, 2025 and March 15, 2025. You will continue to be considered an employee of the Company for purposes of this letter agreement if you are on a Company- approved leave of absence.

(b)In the event of a Change in Control during 2024, subject to your continued employment through the earlier of: (1) the Determination Date; or (2) the date of the Change in Control, you will be eligible to receive your Retention Bonus in cash in a lump sum within 10 days following the date of the Change in Control.

(c)In the event of your Involuntary Termination (as defined in the Employment Agreement) on or after the Determination Date but on or prior to the date you have received the Retention Bonus, you will be eligible to receive your Retention Bonus in cash in a lump sum within 10 days following the effective date of your Release (as defined below). As a condition to your receipt of the Retention Bonus pursuant to this Section 2(c), you shall execute and not revoke a general release of all claims in favor of the Company and its affiliates (the "***Release***") in the form attached to the Employment Agreement as *Exhibit A*. In the event the Release does not become effective within the 55-day period following the date of your Involuntary Termination, you shall not be entitled to the Retention Bonus.

(d)If your employment terminates prior to the Determination Date for any reason, then this letter agreement will terminate, and you will forfeit any right you may have to receive the Retention Bonus.

3. Relationship to Other Compensation

The Retention Bonus described herein is independent of all other compensation and is in addition to any severance to which you may be entitled upon an Involuntary Termination as provided in Section 4(b) of the Employment Agreement.

4. Tax and Other Deductions

All compensation to be paid to you will be subject to all applicable federal, state and local tax withholding by the Company.

5. Employment at Will

This letter agreement does not affect your employment relationship with the Company; that is, employment with the Company remains at-will as provided in Section 4(a) of the Employment Agreement, subject to your rights to severance in certain circumstances as provided in Section 4(b) of the Employment Agreement.

6. Section 409A of the Internal Revenue Code

This letter agreement is not intended to provide for any deferral of compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended. Section 10(o) of the Employment Agreement is hereby incorporated herein by reference and shall apply to this letter agreement as if set forth herein.

7. Miscellaneous

This letter agreement amends the Employment Agreement to the extent the Employment Agreement is inconsistent with this letter agreement. This letter agreement and the Employment Agreement (as amended hereby) set forth the entire understanding of the parties with respect to the subject matter hereof and supersede all existing agreements between them concerning such subject matter. This letter agreement may be amended or modified only with the written consent of Executive and an authorized representative of the Company. This letter agreement shall be binding upon and inure to the benefit of the successors of the Company. This letter agreement will not give any rights or remedies to any person other than the undersigned employee and the Company and its successors. This letter agreement will be governed by the laws of the State of California, excluding any that mandate the use of another jurisdiction’s laws. You shall have no rights under this letter agreement other than as an unsecured general creditor of the Company.

Please indicate your agreement with these terms of this letter agreement by signing and dating this letter agreement below.

[*Remainder of page intentionally left blank*]

Sincerely,

Oncternal Therapeutics, Inc.

/s/ Richard Vincent

Richard Vincent
Chief Financial Officer

Agreed and accepted:

/s/ Chase Leavitt
Print Name: Chase Leavitt

Date: March 31, 2023

March 31, 2023

Rajesh Krishnan, Ph.D. Oncternal Therapeutics, Inc.

Dear Dr. Krishnan:

Oncternal Therapeutics, Inc. (the "***Company***") is providing this letter agreement to set forth agreements between you and the Company related to your compensation. This letter agreement amends the Amended and Restated Employment Agreement between you and the Company, dated January 6, 2021 (the "***Employment Agreement***").

1. 2023 Annual Bonus

Notwithstanding anything to the contrary contained in Section 3(b) of your Employment Agreement or the Company's Annual Incentive Plan, you hereby agree that you will not be eligible to receive an annual bonus relating to performance during 2023; however, in the event of a Change in Control (as defined in the Employment Agreement) on or prior to December 31, 2023, this letter agreement shall terminate and you shall again be eligible to receive an annual bonus for 2023 in accordance with Section 3(b) of your Employment Agreement and subject to the terms of the Company's Annual Incentive Plan.

2. Retention Bonus

(a)Subject to Sections 2(b), 2(c) and 2(d) below and your continued employment through the Determination Date (as defined below), you will be eligible to receive a Retention Bonus equal to the annual bonus you would have been eligible to receive under the Company's Annual Incentive Plan based on the Company's actual performance for 2023, as determined by the Compensation Committee of the Board of Directors (the "***Committee***") following the completion of 2023, had you been a participant in the Annual Incentive Plan with a target bonus opportunity of up to 40% of your base salary (such amount as determined by the Committee, the "***Retention Bonus***"), which determination shall occur between January 1, 2024 and March 15, 2024 (the date of such determination, the "***Determination Date***"). The Retention Bonus, if any, will be paid in cash in a lump sum between January 1, 2025 and March 15, 2025. You will continue to be considered an employee of the Company for purposes of this letter agreement if you are on a Company- approved leave of absence.

(b)In the event of a Change in Control during 2024, subject to your continued employment through the earlier of: (1) the Determination Date; or (2) the date of the Change in Control, you will be eligible to receive your Retention Bonus in cash in a lump sum within 10 days following the date of the Change in Control.

(c)In the event of your Involuntary Termination (as defined in the Employment Agreement) on or after the Determination Date but on or prior to the date you have received the Retention Bonus, you will be eligible to receive your Retention Bonus in cash in a lump sum within 10 days following the effective date of your Release (as defined below). As a condition to your receipt of the Retention Bonus pursuant to this Section 2(c), you shall execute and not revoke a general release of all claims in favor of the Company and its affiliates (the "***Release***") in the form attached to the Employment Agreement as *Exhibit A*. In the event the Release does not become effective within the 55-day period following the date of your Involuntary Termination, you shall not be entitled to the Retention Bonus.

(d)If your employment terminates prior to the Determination Date for any reason, then this letter agreement will terminate, and you will forfeit any right you may have to receive the Retention Bonus.

3. Relationship to Other Compensation

The Retention Bonus described herein is independent of all other compensation and is in addition to any severance to which you may be entitled upon an Involuntary Termination as provided in
Section 4(b) of the Employment Agreement.

4. Tax and Other Deductions

All compensation to be paid to you will be subject to all applicable federal, state and local tax withholding by the Company.

5. Employment at Will

This letter agreement does not affect your employment relationship with the Company; that is, employment with the Company remains at-will as provided in Section 4(a) of the Employment Agreement, subject to your rights to severance in certain circumstances as provided in Section 4(b) of the Employment Agreement.

6. Section 409A of the Internal Revenue Code

This letter agreement is not intended to provide for any deferral of compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended. Section 10(o) of the Employment Agreement is hereby incorporated herein by reference and shall apply to this letter agreement as if set forth herein.

7. Miscellaneous

This letter agreement amends the Employment Agreement to the extent the Employment Agreement is inconsistent with this letter agreement. This letter agreement and the Employment Agreement (as amended hereby) set forth the entire understanding of the parties with respect to the subject matter hereof and supersede all existing agreements between them concerning such subject matter. This letter agreement may be amended or modified only with the written consent of Executive and an authorized representative of the Company. This letter agreement shall be binding upon and inure to the benefit of the successors of the Company. This letter agreement will not give any rights or remedies to any person other than the undersigned employee and the Company and its successors. This letter agreement will be governed by the laws of the State of California, excluding any that mandate the use of another jurisdiction’s laws. You shall have no rights under this letter agreement other than as an unsecured general creditor of the Company.

Please indicate your agreement with these terms of this letter agreement by signing and dating this letter agreement below.

[*Remainder of page intentionally left blank*]

Sincerely,

Oncternal Therapeutics, Inc.

/s/ Richard Vincent

Richard Vincent
Chief Financial Officer

Agreed and accepted:

/s/ Rajesh Krishnan
Print Name: Rajesh Krishnan, Ph.D.

Date: March 31, 2023

Exhibit 31.1

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

I, James B. Breitmeyer, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Oncternal 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 consolidated financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

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

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

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

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

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

/s/ James B. Breitmeyer
President and Chief Executive Officer
(Principal Executive Officer)

Dated: May 4, 2023

Exhibit 31.2

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

I, Richard G. Vincent, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Oncternal 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 consolidated financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

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

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

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

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

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

/s/ Richard G. Vincent
Chief Financial Officer
(Principal Financial Officer)

Dated: May 4, 2023

Exhibit 32.1

CERTIFICATION
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

In connection with the Quarterly Report on Form 10-Q of Oncternal Therapeutics, Inc. (the "Company") for the period ended March 31, 2023, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, James B. Breitmeyer, as Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

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

/s/ James B. Breitmeyer
President and Chief Executive Officer
(Principal Executive Officer)

Dated: May 4, 2023

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. Section 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing. A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 32.2

CERTIFICATION
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

In connection with the Quarterly Report on Form 10-Q of Oncternal Therapeutics, Inc. (the "Company") for the period ended March 31, 2023, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Richard G. Vincent, as Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

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

/s/ Richard G. Vincent
Chief Financial Officer
(Principal Financial Officer)

Dated: May 4, 2023

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. Section 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing. A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.