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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2021

Or

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

Commission file number: 001-36020

Onconova Therapeutics, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**22-3627252**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
12 Penns Trail, Newtown, PA	**18940**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: **(267) 759-3680**

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, a 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 Act). ☐ Yes ☒ No

The number of outstanding shares of the registrant's Common Stock, par value $0.01 per share, as of August 4, 2021 was 15,781,040.

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, par value $.01 per share	ONTX	The Nasdaq Stock Market LLC

ONCONOVA THERAPEUTICS, INC.

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FOR THE QUARTER ENDED JUNE 30, 2021

All common stock, equity, share and per share amounts have been retroactively adjusted to reflect a one-for-fifteen reverse stock split which was effective May 20, 2021.

PART I — FINANCIAL INFORMATION

Item 1. Financial Statements

Onconova Therapeutics, Inc.
Condensed Consolidated Balance Sheets

	June 30, 2021	December 31, 2020
Assets	(unaudited)	
Current assets:		
Cash and cash equivalents	$ 43,709,000	$ 19,025,000
Receivables	27,000	37,000
Prepaid expenses and other current assets	457,000	722,000
Total current assets	44,193,000	19,784,000
Property and equipment, net	45,000	52,000
Other non-current assets	140,000	150,000
Total assets	$ 44,378,000	$ 19,986,000
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 4,290,000	$ 4,833,000
Accrued expenses and other current liabilities	2,983,000	4,962,000
Deferred revenue	226,000	226,000
Total current liabilities	7,499,000	10,021,000
Warrant liability	530,000	321,000
Deferred revenue, non-current	3,356,000	3,469,000
Total liabilities	11,385,000	13,811,000
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.01 par value, 5,000,000 authorized at June 30, 2021 and December 31, 2020, none issued and outstanding at June 30, 2021 and December 31, 2020	—	—
Common stock, $0.01 par value, 125,000,000 and 250,000,000 authorized at June 30, 2021 and December 31, 2020, 15,781,040 and 12,396,219 shares issued and outstanding at June 30, 2021 and December 31, 2020	158,000	124,000
Additional paid in capital	470,335,000	434,593,000
Accumulated deficit	(437,502,000)	(428,556,000)
Accumulated other comprehensive income	2,000	14,000
Total stockholders' equity	32,993,000	6,175,000
Total liabilities and stockholders' equity	$ 44,378,000	$ 19,986,000

See accompanying notes to condensed consolidated financial statements.

Onconova Therapeutics, Inc.
Condensed Consolidated Statements of Operations (unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Revenue	$ 57,000	$ 56,000	$ 113,000	$ 108,000
Operating expenses:				
General and administrative	2,850,000	2,594,000	5,067,000	4,401,000
Research and development	1,852,000	4,801,000	3,789,000	8,171,000
Total operating expenses	4,702,000	7,395,000	8,856,000	12,572,000
Loss from operations	(4,645,000)	(7,339,000)	(8,743,000)	(12,464,000)
Change in fair value of warrant liability	427,000	(56,000)	(209,000)	(119,000)
Other (loss) income, net	(13,000)	—	6,000	96,000
Net loss	$ (4,231,000)	$ (7,395,000)	$ (8,946,000)	$ (12,487,000)
Net loss per share, basic and diluted	$ (0.27)	$ (0.65)	$ (0.59)	$ (1.14)
Basic and diluted weighted average shares outstanding	15,780,863	11,303,508	15,201,719	10,996,624

See accompanying notes to condensed consolidated financial statements.

Onconova Therapeutics, Inc.
Condensed Consolidated Statements of Comprehensive Loss (unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Net loss	$ (4,231,000)	$ (7,395,000)	$ (8,946,000)	$ (12,487,000)
Other comprehensive income (loss), net of tax:				
Foreign currency translation adjustments, net	4,000	7,000	(12,000)	1,000
Other comprehensive income (loss), net of tax	4,000	7,000	(12,000)	1,000
Comprehensive loss	$ (4,227,000)	$ (7,388,000)	$ (8,958,000)	$ (12,486,000)

See accompanying notes to condensed consolidated financial statements.

Onconova Therapeutics, Inc.
Consolidated Statement of Stockholders' Equity (Deficit) (unaudited)

Three Month Periods Ended June 30, 2021 and 2020

	Common Stock		Additional Paid in Capital	Accumulated deficit	Accumulated other comprehensive (loss) income	Total
	Shares	Amount				
Balance at March 31, 2021	15,779,160	$ 158,000	$ 470,268,000	$ (433,271,000)	$ (2,000)	$ 37,153,000
Net loss	—	—	—	(4,231,000)	—	(4,231,000)
Other comprehensive loss	—	—	—	—	4,000	4,000
Exercise of stock options	1,776	—	7,000	—	—	7,000
Stock-based compensation	—	—	60,000	—	—	60,000
Shares issued in connection with reverse stock split	104	—	—	—	—	—
Balance at June 30, 2021	15,781,040	$ 158,000	$ 470,335,000	$ (437,502,000)	$ 2,000	$ 32,993,000
Balance at March 31, 2020	11,161,072	$ 111,000	$ 429,752,000	$ (408,491,000)	$ (24,000)	$ 21,348,000
Net loss	—	—	—	(7,395,000)	—	(7,395,000)
Other comprehensive loss	—	—	—	—	7,000	7,000
Stock-based compensation	—	—	92,000	—	—	92,000
Issuance of common stock upon exercise of warrants	367,425	4,000	1,576,000	—	—	1,580,000
Issuance of common stock upon exercise of pre-funded warrants	83,333	1,000	—	—	—	1,000
Balance at June 30, 2020	11,611,830	$ 116,000	$ 431,420,000	$ (415,886,000)	$ (17,000)	$ 15,633,000

Six Month Periods Ended June 30, 2021 and 2020

	Common Stock		Additional Paid in Capital	Accumulated deficit	Accumulated other comprehensive income (loss)	Total
	Shares	Amount				
Balance at December 31, 2020	12,396,219	$ 124,000	$ 434,593,000	$ (428,556,000)	$ 14,000	$ 6,175,000
Net loss	—	—	—	(8,946,000)	—	(8,946,000)
Other comprehensive income	—	—	—	—	(12,000)	(12,000)
Exercise of stock options	4,642	—	24,000	—	—	24,000
Stock-based compensation	—	—	125,000	—	—	125,000
Shares issued in connection with reverse stock split	104	—	—	—	—	—
Issuance of common stock, net	3,220,075	32,000	35,115,000	—	—	35,147,000
Issuance of common stock upon exercise of warrants	160,000	2,000	478,000	—	—	480,000
Balance at June 30, 2021	15,781,040	$ 158,000	$ 470,335,000	$ (437,502,000)	$ 2,000	$ 32,993,000
Balance at December 31, 2019	7,411,157	$ 74,000	$ 414,917,000	$ (403,399,000)	$ (18,000)	$ 11,574,000
Net loss	—	—	—	(12,487,000)	—	(12,487,000)
Other comprehensive loss	—	—	—	—	1,000	1,000
Stock-based compensation	—	—	185,000	—	—	185,000
Issuance of common stock, net	1,844,168	18,000	9,044,000	—	—	9,062,000
Issuance of common stock upon exercise of warrants	2,273,172	23,000	7,274,000	—	—	7,297,000
Issuance of common stock upon exercise of pre-funded warrants	83,333	1,000	—	—	—	1,000
Balance at June 30, 2020	11,611,830	$ 116,000	$ 431,420,000	$ (415,886,000)	$ (17,000)	$ 15,633,000

See accompanying notes to condensed consolidated financial statements.

Onconova Therapeutics, Inc.
Condensed Consolidated Statements of Cash Flows (unaudited)

	Six Months Ended June 30,	
	2021	2020
Operating activities:		
Net loss	$ (8,946,000)	$ (12,487,000)
Adjustment to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	7,000	5,000
Change in fair value of warrant liabilities	209,000	119,000
Stock compensation expense	125,000	185,000
Changes in assets and liabilities:		
Receivables	10,000	57,000
Prepaid expenses and other current assets	265,000	(70,000)
Other assets	10,000	—
Accounts payable	(543,000)	877,000
Accrued expenses and other current liabilities	(1,979,000)	(418,000)
Deferred revenue	(113,000)	(112,000)
Net cash used in operating activities	(10,955,000)	(11,844,000)
Investing activities:		
Payments for purchase of property and equipment	—	(15,000)
Net cash used in investing activities	—	(15,000)
Financing activities:		
Proceeds from the sale of common stock and warrants, net of costs	35,147,000	9,062,000
Proceeds from the exercise of warrants	480,000	7,298,000
Proceeds from the exercise of stock options	24,000	—
Net cash provided by financing activities	35,651,000	16,360,000
Effect of foreign currency translation on cash	(12,000)	1,000
Net increase in cash and cash equivalents	24,684,000	4,502,000
Cash and cash equivalents at beginning of period	19,025,000	22,726,000
Cash and cash equivalents at end of period	$ 43,709,000	$ 27,228,000

See accompanying notes to condensed consolidated financial statements.

Onconova Therapeutics, Inc.
Notes to Condensed Consolidated Financial Statements
(Unaudited)

1. Nature of Business

The Company

Onconova Therapeutics, Inc. (the "Company") was incorporated in the State of Delaware on December 22, 1998 and commenced operations on January 1, 1999. The Company's headquarters are located in Newtown, Pennsylvania. The Company is a clinical-stage biopharmaceutical company focused on discovering and developing novel products for patients with cancer. The Company has proprietary targeted anti-cancer agents designed to disrupt specific cellular pathways that are important for cancer cell proliferation. The Company believes that the product candidates in its pipeline have the potential to be efficacious in a variety of cancers with unmet medical need. The Company currently has the following two clinical-stage programs: 1. ON 123300 in solid tumors; and 2. oral rigosertib alone or in combination with PD-1 inhibitors for treatment of KRAS-mutated solid tumors. During 2012, Onconova Europe GmbH was established as a wholly owned subsidiary of the Company for the purpose of further developing business in Europe.

The Company has entered into several license and collaboration agreements. In 2011, the Company entered into a license agreement, as subsequently amended, with SymBio Pharmaceuticals Limited ("SymBio"), which grants SymBio certain rights to commercialize rigosertib in Japan and Korea. In December 2017, the Company entered into a license and collaboration agreement with HanX Biopharmaceuticals, Inc. ("HanX") for the further development, registration and commercialization of ON 123300 in greater China. ON 123300 is a preclinical compound which the Company believes has the potential to overcome the limitations of current generation CDK 4/6 inhibitors. Under the terms of the agreement, the Company received an upfront payment, and will receive regulatory and commercial milestone payments, as well as royalties on Chinese sales. The key feature of the collaboration is that HanX provides all funding required for Chinese IND enabling studies performed for Chinese Food and Drug Administration IND approval, which was received in January 2020. The Company and HanX also intended for these studies to comply with the FDA standards for IND approval. Accordingly, such studies were used by the Company for an IND filing with the US FDA in November 2020. The FDA Study May Proceed letter was issued in December 2020. The Company maintains global rights outside of China. On March 2, 2018, the Company entered into a License, Development and Commercialization Agreement (the "Pint License Agreement") with Pint International SA (which, together with its affiliate Pint Pharma GmbH, are collectively referred to as "Pint"). Under the terms of the agreement, the Company granted Pint an exclusive, royalty-bearing license, with the right to sublicense, under certain Company patent rights and know-how, to develop and commercialize any pharmaceutical product containing rigosertib in all uses of rigosertib in certain Latin American countries. In May 2019, the Company entered into a License and Collaboration Agreement (the "HanX License Agreement") with HanX. Under the terms of the HanX License Agreement, the Company granted HanX an exclusive, royalty-bearing license, with the right to sublicense, under certain Company patent rights and know-how, to develop and commercialize any pharmaceutical product (the "HanX Product") containing rigosertib in all uses of rigosertib or the HanX Product in human therapeutic uses in the People's Republic of China, Hong Kong, Macau and Taiwan (the "HanX Territory"). In connection with the HanX License Agreement, the Company also entered into a Securities Purchase Agreement with each of HanX and Abundant New Investments Ltd. ("Abundant"), an affiliate of HanX (each, a "Securities Purchase Agreement" and together, the "Securities Purchase Agreements"). HanX did not fulfill its obligations under the HanX License Agreement and in January 2020, in accordance with the terms of the HanX License Agreement, the HanX License Agreement was deemed to be void ab initio. Upon this termination, the rights to HanX Product in the HanX Territory reverted to the Company in accordance with the terms of the HanX License Agreement. In addition, the Securities Purchase Agreements terminated automatically effective upon the termination of the HanX License Agreement in accordance with the Securities Purchase Agreements. In November 2019, the Company entered into a Distribution, License and Supply Agreement (the "Knight License Agreement") with Knight Therapeutics Inc. ("Knight"). Under the terms of the Knight License Agreement, the Company granted Knight (i) a non-exclusive, royalty-bearing license, with the right to sublicense, under certain Company patent rights and know-how, to develop and manufacture any product (the "Knight Licensed Product") containing rigosertib for Canada (and Israel, should Knight exercise its option as set forth in the Knight License Agreement) (the "Knight Territory") and in human uses (the

Onconova Therapeutics, Inc.
Notes to Condensed Consolidated Financial Statements (Continued)
(Unaudited)

"Field"), and (ii) an exclusive, royalty-bearing license, with the right to sublicense, under certain Company patent rights and know-how, to commercialize the Knight Licensed Product in the Knight Territory and in the Field. Knight has also agreed to obtain from the Company all of its requirements of the Knight Licensed Products for the Knight Territory, and the Company has agreed to supply Knight with all of its requirements of the Knight Licensed Products. In December 2019, the Company entered into a Distribution, License and Supply Agreement (the "STA License Agreement") with Specialised Therapeutics Asia Pte. Ltd. ("STA"). Under the terms of the STA License Agreement, the Company granted STA (i) a non-exclusive, royalty -bearing license, with the right to sublicense, under certain Company patent rights and know-how, to develop and manufacture any product (the "STA Licensed Product") containing rigosertib for Australia and New Zealand (the "STA Territory") and in human uses (the "Field"), and (ii) an exclusive, royalty-bearing license, with the right to sublicense, under certain Company patent rights and know- how, to commercialize the STA Licensed Product in the STA Territory and in the Field. STA has also agreed to obtain from the Company all of its requirements of the STA Licensed Products for the STA Territory, and the Company has agreed to supply STA with all of its requirements of the STA Licensed Products.

On May 20, 2021, the Company amended its certificate of incorporation to effect a one-for-fifteen reverse stock split of its common stock. All common stock, equity, share and per share amounts in the financial statements and notes have been retroactively adjusted to reflect this one-for-fifteen reverse stock split.

On May 20, 2021, the Company amended its certificate of incorporation to decrease the number of authorized shares of common stock par value $0.01 per share from 250,000,000 to 125,000,000.

Liquidity

The Company has incurred recurring operating losses since inception. For the six months ended June 30, 2021, the Company incurred a net loss of $8,946,000 and as of June 30, 2021 the Company had generated an accumulated deficit of $437,502,000. The Company anticipates operating losses to continue for the foreseeable future due to, among other things, costs related to research, development of its product candidates and its preclinical programs, strategic alliances and its administrative organization. At June 30, 2021, the Company had cash and cash equivalents of $43,709,000. The Company will require substantial additional financing to fund its ongoing clinical trials and operations, and to continue to execute its strategy.

On January 11, 2021, the Company closed on an offering of common stock. The Company issued 1,303,408 shares of common stock and net proceeds were approximately $8.5 million. On February 16, 2021, the Company closed on an offering of common stock. The Company issued 1,916,667 shares of common stock and net proceeds were approximately $26.7 million.

Following the unsuccessful conclusion of the INSPIRE trial, the Company has taken steps to reduce its cash expenditures. From September 2020 to December 2020, the Company implemented a workforce reduction of employees in research and development who were primarily focused on preparing the NDA for the use of rigosertib in higher risk MDS. In total, 10 employees were terminated, representing approximately 43% of the Company's workforce. A severance related charge of approximately $1,207,000, which includes a non-cash charge of approximately $29,000 related to the accelerated vesting of outstanding stock options, was recorded in the year ended December 31, 2020. The accrued severance balance remaining at June 30, 2021 was $177,000 and is included in accrued expenses and other liabilities on the balance sheet. It will be paid in periodic amounts through September 2021. On October 30, 2020, the Company notified its landlord of its intention to not renew its office space lease. The lease expired in February 2021 and was modified to a month-to-month lease for a portion of the space. The lease terminated in June 2021 and the Company has relocated to temporary office space with all employees working remotely.

Onconova Therapeutics, Inc.
Notes to Condensed Consolidated Financial Statements (Continued)
(Unaudited)

The Company has and may continue to delay, scale-back, or eliminate certain of its research and development activities and other aspects of its operations until such time as the Company is successful in securing additional funding. The Company is exploring various dilutive and non-dilutive sources of funding, including equity financings, strategic alliances, business development and other sources. The future success of the Company is dependent upon its ability to obtain additional funding. There can be no assurance, however, that the Company will be successful in obtaining such funding in sufficient amounts, on terms acceptable to the Company, or at all. The Company believes that its cash and cash equivalents will be sufficient to fund its ongoing trials and business operations for more than eighteen months from the date of this filing.

COVID-19

While the Company is not aware of a material impact from the novel coronavirus disease ("COVID-19") pandemic through June 30, 2021, the full extent to which COVID-19 will directly or indirectly impact the Company's business, results of operations and financial condition, including manufacturing, clinical trials and research and development costs, depends on future developments that are highly uncertain at this time.

2. Summary of Significant Accounting Policies

Basis of Presentation

The condensed consolidated financial statements are prepared in conformity with accounting principles generally accepted in the United States ("GAAP") for interim financial information. Certain information and footnotes normally included in financial statements prepared in accordance with GAAP have been condensed or omitted pursuant to the rules and regulations of the Securities and Exchange Commission (the "SEC"). The financial statements include the consolidated accounts of the Company and its wholly-owned subsidiary, Onconova Europe GmbH. All significant intercompany transactions have been eliminated.

Unaudited Interim Financial Information

The accompanying condensed consolidated balance sheet as of June 30, 2021, the condensed consolidated statements of operations and comprehensive loss for the three and six months ended June 30, 2021 and 2020, the consolidated statements of stockholders' equity (deficit) for the three and six months ended June 30, 2021 and 2020 and the condensed consolidated statements of cash flows for the six months ended June 30, 2021 and 2020 are unaudited. The interim unaudited condensed consolidated financial statements have been prepared on the same basis as the annual audited consolidated financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary for the fair statement of the Company's financial position as of June 30, 2021, the results of its operations for the three and six months ended June 30, 2021 and 2020, and its cash flows for the six months ended June 30, 2021 and 2020. The financial data and other information disclosed in these notes related to the three and six months ended June 30, 2021 and 2020 are unaudited. The results for the three and six months ended June 30, 2021 are not necessarily indicative of results to be expected for the year ending December 31, 2021, any other interim periods, or any future year or period. These unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and the notes thereto for the year ended December 31, 2020 included in the Company's annual report on Form 10-K filed with the SEC on March 18, 2021.

All common stock, equity, share and per share amounts in the financial statements and notes have been retroactively adjusted to reflect a one-for-fifteen reverse stock split which was effective May 20, 2021.

Onconova Therapeutics, Inc.
Notes to Condensed Consolidated Financial Statements (Continued)
(Unaudited)

Segment Information

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company views its operations and manages its business in one segment, which is the identification and development of oncology therapeutics.

Significant Accounting Policies

The Company's significant accounting policies are disclosed in the audited consolidated financial statements for the year ended December 31, 2020 included in the Company's annual report on Form 10-K filed with the SEC on March 18, 2021. Since the date of such financial statements, there have been no changes to the Company's significant accounting policies.

Fair Value Measurements

The carrying amounts reported in the accompanying consolidated financial statements for cash and cash equivalents, accounts payable, and accrued liabilities approximate their respective fair values because of the short-term nature of these accounts. The fair value of the warrant liability is discussed in Note 7, "Fair Value Measurements."

Recent Accounting Pronouncements

In June 2016, the FASB issued new guidance on the accounting for credit losses on financial instruments. The guidance was amended in November 2019. The new guidance introduces an expected loss model for estimating credit losses, replacing the incurred loss model. The new guidance also changes the impairment model for available-for-sale debt securities, requiring the use of an allowance to record estimated credit losses (and subsequent recoveries). The guidance is effective for the Company in fiscal years beginning after December 15, 2022, and interim periods within those years, with early adoption permitted. The Company is evaluating the impact of the adoption of the standard on its consolidated financial statements.

3. Revenue

The Company's revenue during the three and six months ended June 30, 2021 and 2020 was from its license and collaboration agreement with SymBio.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Symbio				
Upfront license fee recognition over time	$ 57,000	$ 56,000	$ 113,000	$ 112,000
Supplies	—	—	—	(4,000)
	$ 57,000	$ 56,000	$ 113,000	$ 108,000

Onconova Therapeutics, Inc.
Notes to Condensed Consolidated Financial Statements (Continued)
(Unaudited)

Deferred revenue is as follows:

	Symbio Upfront Payment
Deferred balance at December 31, 2020	$ 3,695,000
Recognition to revenue	113,000
Deferred balance at June 30, 2021	$ 3,582,000

4. Net Loss Per Share of Common Stock

The following potentially dilutive securities outstanding at June 30, 2021 and 2020 have been excluded from the computation of diluted weighted average shares outstanding, as they would be antidilutive (reflects the number of common shares as if the dilutive securities had been converted to common stock):

	June 30,	
	2021	2020
Warrants	511,202	1,457,479
Stock options	60,431	69,640
	571,633	1,527,119

5. Warrants

Common Stock warrants are accounted for in accordance with applicable accounting guidance provided in ASC Topic 815, *Derivatives and Hedging - Contracts in Entity's Own Equity* (ASC Topic 815), as either derivative liabilities or as equity instruments depending on the specific terms of the warrant agreement. Some of the Company's warrants are classified as liabilities because in certain circumstances they could require cash settlement.

Warrants outstanding and warrant activity (reflects the number of common shares as if the warrants were converted to common stock) for the six months ended June 30, 2021 is as follows:

Description	Classification	Exercise Price	Expiration Date	Balance December 31, 2020	Warrants Issued	Warrants Exercised	Warrants Expired	Balance June 30, 2021
Non-tradable warrants	Liability	$ 2,587.50	July 2021	430	—	—	—	430
Tradable warrants	Liability	$ 1,107.00	July 2021	14,187	—	—	—	14,187
Non-tradable pre-funded warrants	Equity	$ 2.25	July 2023	26	—	—	—	26
Non-tradable warrants	Equity	$ 24.00	December 2022	26,189	—	—	—	26,189
Non-tradable warrants	Equity	$ 211.50	March 2021	333	—	—	(333)	—
Non-tradable warrants	Equity	$ 317.25	March 2021	556	—	—	(556)	—
Non-tradable warrants	Equity	$ 116.8425	June 2021	1,000	—	—	(1,000)	—
Non-tradable pre-funded warrants	Equity	$ 2.25	none	3,522	—	—	—	3,522
Non-tradable warrants	Equity	$ 24.00	December 2022	120,407	—	—	—	120,407
Non-tradable pre-funded warrants	Equity	$ 2.25	none	4,974	—	—	—	4,974
Non-tradable warrants	Equity	$ 30.00	September 2023	7,306	—	—	—	7,306
Non-tradable warrants	Equity	$ 3.00	November 2024	409,500	—	(160,000)	—	249,500
Non-tradable warrants	Equity	$ 6.54375	December 2024	16,953	—	—	—	16,953
Non-tradable warrants	Equity	$ 6.75450	December 2024	46,263	—	—	—	46,263
Non-tradable warrants	Equity	$ 6.77850	December 2023	29,968	—	—	—	29,968
				681,614	—	(160,000)	(1,889)	519,725

The tradable warrants which expired in July 2021 were issued in connection with a financing transaction completed in August 2016. Subsequent to the closing of that financing transaction, the Company executed a one-for-fifteen reverse stock split in September 2018. Subsequently, the Company executed a one-for-fifteen reverse stock split in May 2021. As a result, each of the 3,192,140 warrants is exercisable for 1/225 of one share of common stock at an exercise price of $4.92 per warrant. The table above shows the number of shares of common stock which could be

Onconova Therapeutics, Inc.
Notes to Condensed Consolidated Financial Statements (Continued)
(Unaudited)

obtained by the exercise of all of the outstanding warrants, 14,187; and shows the exercise price for 225 of the warrants, $1,107.00.

6. Balance Sheet Detail

Prepaid expenses and other current assets:

	June 30, 2021	December 31, 2020
Research and development	$ 42,000	$ 189,000
Manufacturing	144,000	90,000
Insurance	80,000	263,000
Other	191,000	180,000
	$ 457,000	$ 722,000

Property and equipment:

	June 30, 2021	December 31, 2020
Property and equipment	$ 70,000	$ 70,000
Accumulated depreciation	(25,000)	(18,000)
	$ 45,000	$ 52,000

Accrued expenses and other current liabilities:

	June 30, 2021	December 31, 2020
Research and development	$ 1,849,000	$ 2,541,000
Employee compensation	990,000	2,239,000
Professional fees	144,000	182,000
	$ 2,983,000	$ 4,962,000

7. Fair Value Measurements

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date.

The Company utilizes a valuation hierarchy for disclosure of the inputs to the valuations used to measure fair value. This hierarchy prioritizes the inputs into three broad levels as follows. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument. Level 3 inputs are unobservable inputs based on the Company's own assumptions used to measure assets and liabilities at fair value. A financial asset or liability's classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

On January 5, 2016, the Company entered into a securities purchase agreement (the "Securities Purchase Agreement") with an institutional investor providing for the issuance and sale by the Company of 861 shares of Common Stock, at a purchase price of $2,137.50 per share and warrants to purchase up to 430 shares of Common Stock

Onconova Therapeutics, Inc.
Notes to Condensed Consolidated Financial Statements (Continued)
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(the "Warrants") for aggregate gross proceeds of $1,840,000. The Company has classified the warrants as a liability (see Note 5). The estimated fair value using the Black-Scholes pricing model was approximately $0 at June 30, 2021 and December 31, 2020. These warrants expired in July 2021.

On July 29, 2016 the Company closed on a Rights Offering, issuing 16,000 shares of Common Stock, 14,187 Tradable Warrants and 2,918 Pre-Funded Warrants. The Tradable Warrants are exercisable for a period of five years for one share of Common Stock at an exercise price of $1,107 per share. After the one-year anniversary of issuance, the Company may redeem the Tradable Warrants for $0.015 per Tradable Warrant if the volume weighted average price of its Common Stock is above $2,767.50 for each of 10 consecutive trading days. The Company has classified the Tradable Warrants as a liability (see Note 5). The Tradable Warrants have been listed on the Nasdaq Capital Market since issuance and the Company regularly monitors the trading activity. The Company has determined that an active and orderly market for the Tradable Warrants has developed and that the Nasdaq Capital Market price is the best indicator of fair value of the warrant liability. The quoted market price was used to determine the fair value at December 31, 2020 and June 30, 2021. These warrants expired in July 2021.

The following fair value hierarchy table presents information about the Company's financial assets and liabilities measured at fair value on a recurring basis as of June 30, 2021 and December 31, 2020:

	Fair Value Measurement as of:							
	June 30, 2021				December 31, 2020			
	Level 1	Level 2	Level 3	Balance	Level 1	Level 2	Level 3	Balance
Tradable warrants liability	$ 530,000	$ —	$ —	$ 530,000	$ 321,000	$ —	$ —	$ 321,000
Non-tradable warrants liability	—	—	—	—	—	—	—	—
Total	$ 530,000	$ —	$ —	$ 530,000	$ 321,000	$ —	$ —	$ 321,000

There were no transfers between levels in any of the periods reported.

8. Stock-Based Compensation

The 2018 Omnibus Incentive Compensation Plan (the "2018 Plan") was unanimously approved by the Company's Board of Directors on May 24, 2018 and was approved by the Company's stockholders on June 27, 2018.

Under the 2018 Plan, the Company may grant incentive stock options, non-qualified stock options, stock awards, stock units, stock appreciation rights and other stock-based awards to employees, non-employee directors and consultants, and advisors. The maximum aggregate number of shares of the Company's common stock that may be issued under the 2018 Plan is 26,823.

The 2018 Plan was amended and restated following unanimous approval of the Company's Board of Directors on April 24, 2019 and was approved by the Company's shareholders on June 17, 2019. The amended 2018 Plan (the "Amended Plan") allowed for an additional 39,300 shares of the Company's common stock that may be issued under the Amended Plan with respect to awards made on and after June 17, 2019. At June 30, 2021, there were 5,205 shares available for future issuance.

Stock-based compensation expense includes stock options granted to employees and non-employees and has been reported in the Company's statements of operations and comprehensive loss in either research and development expenses or general and administrative expenses depending on the function performed by the optionee. No net tax benefits related to the stock-based compensation costs have been recognized since the Company's inception. The

Onconova Therapeutics, Inc.
Notes to Condensed Consolidated Financial Statements (Continued)
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Company recognized stock-based compensation expense as follows for the three and six months ended June 30, 2021 and 2020:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
General and administrative	$ 43,000	$ 46,000	$ 99,000	$ 91,000
Research and development	17,000	46,000	26,000	94,000
	$ 60,000	$ 92,000	$ 125,000	$ 185,000

A summary of stock option activity for the six months ended June 30, 2021 is as follows:

		Options Outstanding			
	Shares Available for Grant	Number of Shares	Weighted-Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Balance, December 31, 2020	12,339	57,939	$ 368.10	8.38	$ —
Authorized	—	—			
Granted	(21,000)	21,000	$ 7.80	9.94	21,636
Exercised	—	(4,642)	$ 4.65	8.47	
Forfeitures	13,866	(13,866)	$ 940.63	7.11	
Balance, June 30, 2021	5,205	60,431	$ 124.00	8.73	$ —
Vested or expected to vest, June 30, 2021		58,925	$ 124.00	8.73	$ —
Exercisable at June 30, 2021		24,261	$ 297.34	7.87	$ —

The Company accounts for all stock-based payments made to employees, non-employees and directors using an option pricing model for estimating fair value. Accordingly, stock-based compensation expense is measured based on the estimated fair value of the awards on the date of grant, net of forfeitures. Compensation expense is recognized for the portion that is ultimately expected to vest over the period during which the recipient renders the required services to the Company using the straight-line single option method.

The Company uses the Black-Scholes option-pricing model to estimate the fair value of stock options at the grant date. The Black-Scholes model requires the Company to make certain estimates and assumptions, including estimating the fair value of the Company's Common Stock, assumptions related to the expected price volatility of the Common Stock, the period during which the options will be outstanding, the rate of return on risk-free investments and the expected dividend yield for the Company's stock.

As of June 30, 2021, there was $102,000 of unrecognized compensation expense related to the unvested stock options which is expected to be recognized over a weighted-average period of approximately 2.29 years.

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Notes to Condensed Consolidated Financial Statements (Continued)
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The weighted-average assumptions underlying the Black-Scholes calculation of grant date fair value include the following:

	Six months ended June 30,	
	2021	2020
Risk-free interest rate	1.02 %	0.45 %
Expected volatility	123.32 %	105.14 %
Expected term	6.25 years	6.00 years
Expected dividend yield	0 %	0 %
Weighted average grant date fair value	$ 3.80	$ 3.75

The weighted-average valuation assumptions were determined as follows:

- Risk-free interest rate: The Company based the risk-free interest rate on the interest rate payable on U.S. Treasury securities in effect at the time of grant for a period that is commensurate with the assumed expected option term.
- Expected term of options: Due to its lack of sufficient historical data, the Company estimates the expected life of its employee stock options using the "simplified" method, as prescribed in Staff Accounting Bulletin (SAB) No. 107, whereby the expected life equals the arithmetic average of the vesting term and the original contractual term of the option.
- Expected stock price volatility: Expected volatility is based on the historical volatility of the Company's Common Stock since its IPO in July 2013.
- Expected annual dividend yield: The Company has never paid, and does not expect to pay, dividends in the foreseeable future. Accordingly, the Company assumed an expected dividend yield of 0.0%.
- Estimated forfeiture rate: The Company's estimated annual forfeiture rate on stock option grants was 4.14% in 2021 and 2020, based on the historical forfeiture experience.

Grants of PSUs and SARs

On July 9, 2020, the compensation committee of the board of directors and the board approved a cash bonus program of cash-settled stock appreciation right ("2020 SAR") awards and cash-settled performance stock unit ("2020 PSU") awards to the Company's employees. An aggregate of 2020 SAR awards with respect to 256,713 shares of common stock and 2020 PSU awards with respect to 124,220 shares of common stock were granted to the Company's employees. The 2020 SAR awards will be settled in cash, vest 33% on the first anniversary of the date of grant, and the remaining 67% monthly over the next 24 months, have a per-share base amount of $8.40, which was the closing sales price of a share of the Company's common stock on the grant date, and are in all cases subject to the terms and conditions of the Company's form of SAR award agreement.

The 2020 PSU awards vest 50% upon the submission of a new drug application ("NDA") to the U.S. FDA for rigosertib in higher-risk myelodysplastic syndromes ("HR-MDS") and 50% upon U.S. FDA approval of rigosertib for HR-MDS. The 2020 PSU awards have a maximum value of $21.60 per share. The maximum price per share is the per-share value based on the Company's market capitalization at $250 million and the Company's outstanding shares of common stock, which was 11,611,829 shares on July 9, 2020. In all cases, the 2020 PSU awards are subject to the terms and conditions of the Company's form of PSU award agreement.

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Notes to Condensed Consolidated Financial Statements (Continued)
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In addition, on July 9, 2020, based on the recommendation of the compensation committee, the board approved a change in the non-employee director compensation policy that would provide for an annual SAR award ("2020 Director SAR") with respect to 8,333 shares of common stock for each of the Company's non-employee directors. No other changes to the non-employee director compensation policy were approved and, on July 9, 2020, the Board approved the initial 8,333 2020 Director SAR award to each of the non-employee directors for an aggregate total of 58,333 2020 Directors SAR awards granted. The 2020 Director SAR awards vest on the first anniversary of grant subject to the director's continued service and will be settled in cash, have a per-share base amount of $8.40, and are in all cases subject to the terms and conditions of the Company's form of 2020 Director SAR award agreement.

Each SAR subject to a 2020 SAR award represents the right to a cash payment equal to the excess, if any, of (i) the fair market value of each underlying share of the Company's common stock, determined on the date of exercise of the SAR minus (ii) the base amount. Pursuant to the terms of the SAR awards, in no event may the cash payment for each SAR exceed $13.20, which is the maximum price per share of $21.60, minus the base amount of $8.40, subject to adjustment in accordance with the terms of the Stock Appreciation Right Award Agreement. The maximum price per share is the per-share value based on the Company's market capitalization at $250 million and the Company's outstanding shares of common stock, which was 11,611,829 shares on July 9, 2020.

On February 17, 2021, the compensation committee of the board of directors and the board approved a cash bonus program of cash-settled stock appreciation right ("2021 SAR") awards and cash-settled performance stock unit ("2021 PSU") awards to the Company's employees. An aggregate of 2021 SAR awards with respect to 100,000 shares of common stock and 2021 PSU awards with respect to 100,000 shares of common stock were granted to the Company's employees. The 2021 SAR awards will be settled in cash, vest 33% on the first anniversary of the date of grant, and the remaining 67% monthly over the next 24 months, have a per-share base amount of $22.65, which was the closing sales price of a share of the Company's common stock on the grant date, and are in all cases subject to the terms and conditions of the Company's form of SAR award agreement. Each SAR subject to a 2021 SAR award represents the right to a cash payment equal to the excess, if any, of (i) the fair market value of each underlying share of the Company's common stock, determined on the date of exercise of the 2021 SAR minus (ii) the base amount. Pursuant to the terms of the 2021 SAR awards, in no event may the cash payment for each SAR exceed $15.45, which is the maximum price per share of $38.10, minus the base amount of $22.65, subject to adjustment in accordance with the terms of the Stock Appreciation Right Award Agreement. The maximum price per share is the per-share value based on the Company's market capitalization at $600 million and the Company's outstanding shares of common stock, which was 15,767,492 shares on February 17, 2021.

The 2021 PSU awards vest 20% upon the initiation of a new clinical program with an in-licensed compound, 20% for reaching the recommended Phase 2 dose for any compound, 20% for the first patient enrolled in the expansion cohort of the Phase 1 ON123300 clinical trial, 20% for the first patient enrolled in a registrational study for any compound, and 20% for the topline data of a registrational study for any compound. The 2021 PSU awards have a maximum value of $38.10 per share. The maximum price per share is the per-share value based on the Company's approximate market capitalization at $600 million and the Company's outstanding shares of common stock, which was 15,767,492 shares on February 17, 2021. In all cases, the 2021 PSU awards are subject to the terms and conditions of the Company's form of PSU award agreement.

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Notes to Condensed Consolidated Financial Statements (Continued)
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The fair value of the 2021 SARs granted has been estimated using the Black-Scholes option-pricing model with the following weighted-average assumptions:

	Six months ended June 30, 2021
Risk-free interest rate	0.95 %
Expected volatility	129.79 %
Expected term	6.5 years
Expected dividend yield	0 %
Weighted average grant date fair value	$ 0.62

During the six months ended June 30, 2021, the Company recognized $521,000 of compensation expense related to the SARs and PSUs. Included in compensation expense related to SARs is $442,000 of expense resulting from the exercise of 2020 SARs during February 2021. As of June 30, 2021, the SARs and PSUs liability was $102,000 and is included in accrued expenses. As of June 30, 2021, there was $53,000 of unrecognized compensation cost related to the 2020 SARs and PSUs and $664,000 of unrecognized compensation cost related to the 2021 SARs and PSUs.

9. Research Agreements

The Company has entered into various licensing and right-to-sublicense agreements with educational institutions for the exclusive use of patents and patent applications, as well as any patents that may develop from research being conducted by such educational institutions in the field of anticancer therapy, genes and proteins. Results from this research have been licensed to the Company pursuant to these agreements. Under one of these agreements with Temple University (“Temple”), the Company is required to make annual maintenance payments to Temple and royalty payments based upon a percentage of sales generated from any products covered by the licensed patents, with minimum specified royalty payments. As no sales had been generated through June 30, 2021 under the licensed patents, the Company has not incurred any royalty expenses related to this agreement. In addition, the Company is required to pay Temple a percentage of any sublicensing fees received by the Company.

10. Related-Party Transactions

The Company entered into a research agreement, as subsequently amended, with the Mount Sinai School of Medicine (“Mount Sinai”), with which a former member of its board of directors and a stockholder is affiliated. The agreement expired in June 2020 and was not renewed. The board member left the Company’s board in August 2020. Mount Sinai is undertaking research on behalf of the Company on the terms set forth in the agreements. Mount Sinai, in connection with the Company, will prepare applications for patents generated from the research. Results from all projects will belong exclusively to Mount Sinai, but the Company will have an exclusive option to license any inventions. Payments to Mount Sinai under this research agreement for the three months ended June 30, 2021 and 2020 were $0 and $77,000, respectively, and for the six months ended June 30, 2021 and 2020 were $0 and $201,000, respectively. At both June 30, 2021 and December 31, 2020, the Company had $77,000 payable to Mount Sinai under this agreement.

11. Securities Registrations and Sales Agreements

January 2020 Offering

On December 31, 2019, the Company entered into definitive securities purchase agreements with institutional investors for the issuance and sale in a registered direct offering of 1,844,168 shares of the Company's common stock at an offering price of $5.4225 per share.

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Pursuant to the December 2019 HCW Engagement Letter, HCW agreed to serve as exclusive placement agent for the offering. In connection with the offering, the Company paid HCW an aggregate cash fee equal to 7.0% of the gross proceeds in the offering, management fee equal to 1.0% of the gross proceeds raised in the offering, $85,000 for non-accountable expenses; and $10,000 for clearing fees. The Company also issued to HCW or its designees placement agent warrant to purchase up to 92,208 shares of common stock at an exercise price of $6.7785 per share. The placement agent warrants are immediately exercisable and will expire on December 31, 2023.

The net proceeds to the Company from the offering, after deducting HCW's placement agent fees and expenses and other estimated offering expenses payable by the Company were approximately $9.0 million and were received in January 2020.

The offering was pursuant to a prospectus dated December 28, 2017, and a prospectus supplement dated as of December 31, 2019 filed in connection with a takedown from the Company's shelf registration statement on Form S-3 (File No. 333-221684). The offering closed on January 3, 2020.

January 7, 2021 Offering

On January 7, 2021, the Company entered into a purchase agreement with certain institutional and accredited investors for the sale of an aggregate of 1,303,408 shares of the Company’s common stock, at a purchase price of $6.675 per share.

Under the purchase agreement, subject to certain exceptions, the Company is prohibited from effecting or entering into an agreement to effect any “variable rate transactions” as defined in the purchase agreement for a period of five years following the closing of the offering.

In connection with the offering, pursuant to the purchase agreement we reimbursed Lincoln Park Capital Fund, LLC, as the lead investor (“Lincoln Park”), an aggregate of $100,000 for expenses incurred in connection with the offering, including any due diligence expenses and legal fees. Furthermore, pursuant to the purchase agreement, we have granted Lincoln Park certain rights to participate at fair value with other investors in up to 50% of the amount of any future offerings of common stock or securities exercisable for or convertible into common stock that the Company seeks to complete within one year after the closing of the offering, other than a firm commitment public offering.

The net proceeds to the Company from the offering, after deducting Lincoln Park’s expenses and other estimated offering expenses payable by the Company were approximately $8.5 million.

The shares sold in the offering were offered and sold by the Company directly to the investors, without a placement agent, underwriter, broker or dealer, pursuant to an effective shelf registration statement on Form S-3 (File No. 333-237844) declared effective by the SEC on May 18, 2020, and the base prospectus contained therein. The offering closed on January 11, 2021.

February 10, 2021 Offering

On February 10, 2021, the Company entered into an underwriting agreement with Guggenheim Securities, LLC , as representative of several underwriters, for the public offering of 1,666,667 shares of the Company’s common stock, at a public offering price of $15.00 per share. Under the terms of the underwriting agreement, the Company granted the underwriters an option, exercisable for 30 days, to purchase up to an additional 250,000 shares of common stock at the same price. The option was exercised prior to closing.

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In connection with the offering, the Company paid the underwriters a cash fee equal to 6% of the gross proceeds in the offering and $100,000 in legal fees and expenses.

The net proceeds to the Company from the offering, including exercise of the underwriters' option, were approximately $26.7 million, after deducting fees and estimated offering expenses payable by the Company.

The offering was made pursuant to a registration statement (No. 333-237844) on Form S-3, which was initially filed by the Company with the SEC on April 24, 2020, amended on Form S-3/A that was filed with the SEC on May 15, 2020, and was declared effective by the SEC on May 18, 2020. The offering closed on February 16, 2021.

12. Subsequent Event

On July 30, 2021, stockholders approved the Onconova Therapeutics, Inc. 2021 Incentive Compensation Plan (the "2021Plan"). The 2021 Plan is a successor to the Onconova Therapeutics, Inc. 2018 Omnibus Incentive Compensation Plan, as amended and restated. The 2021 Plan makes available 1,300,000 new shares for incentive compensation.

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

The following Management's Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with interim unaudited condensed consolidated financial statements contained in Part I, Item 1 of this quarterly report, and the audited consolidated financial statements and notes thereto for the year ended December 31, 2020 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 filed with the SEC on March 18, 2021. As used in this report, unless the context suggests otherwise, "we," "us," "our," "the Company" or "Onconova" refer to Onconova Therapeutics, Inc. and its consolidated subsidiaries.

All common stock, equity, share and per share amounts have been retroactively adjusted to reflect a one-for-fifteen reverse stock split which was effective May 20, 2021.

Cautionary Note Regarding Forward-Looking Statements

This quarterly report on Form 10-Q includes forward-looking statements. We may, in some cases, use terms such as "believes," "estimates," "anticipates," "expects," "plans," "intends," "may," "could," "might," "will," "should," "approximately" or other words that convey uncertainty of future events or outcomes to identify these forward-looking statements. Forward-looking statements appear in a number of places throughout this report and include statements regarding our intentions, beliefs, projections, outlook, analyses or current expectations concerning, among other things, our ongoing and planned preclinical development and clinical trials, the timing of and our ability to make regulatory filings and obtain and maintain regulatory approvals for our product candidates, protection of our intellectual property portfolio, the degree of clinical utility of our products, particularly in specific patient populations, our ability to develop commercial and manufacturing functions, expectations regarding clinical trial data, our results of operations, cash needs, financial condition, liquidity, collaborations, partnerships, prospects, growth and strategies, the industry in which we operate and the trends that may affect the industry or us.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events, competitive dynamics and industry change, and depend on the economic circumstances that may or may not occur in the future or may occur on longer or shorter timelines than anticipated. Although we believe that we have a reasonable basis for each forward-looking statement contained in this report, we caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate may differ materially from the forward-looking statements contained in this report. In addition, even if our results of operations, financial condition and liquidity, and events in the industry in which we operate are consistent with the forward-looking statements contained in this report, they may not be predictive of results or developments in future periods.

Actual results could differ materially from our forward-looking statements due to a number of factors, including risks related to:

- our need for additional financing for our INSPIRE trial and other operations, and our ability to obtain sufficient funds on acceptable terms when needed, and our plans and future needs to scale back operations if adequate financing is not obtained;
- our estimates regarding expenses, future revenues, capital requirements and needs for additional financing;
- the success and timing of our preclinical studies and clinical trials, including site initiation and patient enrollment, and regulatory approval of protocols for future clinical trials;
- our ability to enter into, maintain and perform collaboration agreements with other pharmaceutical companies, for funding and commercialization of our clinical product candidates or preclinical compounds, and our ability to achieve certain milestones under those agreements;

- the difficulties in obtaining and maintaining regulatory approval of our product candidates, and the labeling under any approval we may obtain;
- our plans and ability to develop, manufacture and commercialize our product candidates;
- our failure to recruit or retain key scientific or management personnel or to retain our executive officers;
- the size and growth of the potential markets for our product candidates and our ability to serve those markets;
- regulatory developments in the United States and foreign countries;
- the rate and degree of market acceptance of any of our product candidates;
- obtaining and maintaining intellectual property protection for our product candidates and our proprietary technology;
- the successful development of our commercialization capabilities, including sales and marketing capabilities;
- recently enacted and future legislation and regulation regarding the healthcare system;
- the success of competing therapies and products that are or become available;
- our ability to maintain the listing of our securities on a national securities exchange;
- the potential for third party disputes and litigation;
- the performance of third parties, including contract research organizations (“CROs”) and third-party manufacturers; and
- the impact of the novel coronavirus disease, COVID-19, to global economy and capital markets, and to our business and our financial results.

Any forward-looking statements that we make in this report speak only as of the date of such statement, and we undertake no obligation to update such statements to reflect events or circumstances after the date of this report or to reflect the occurrence of unanticipated events. Comparisons of results for current and any prior periods are not intended to express any future trends or indications of future performance, unless expressed as such, and should only be viewed as historical data.

You should also read carefully the factors described in the “Risk Factors” in our most recent annual report on Form 10-K and quarterly reports on Form 10-Q, to better understand significant risks and uncertainties inherent in our business and underlying any forward-looking statements. As a result of these factors, actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements in this report and you should not place undue reliance on any forward-looking statements.

Overview

We are a clinical-stage biopharmaceutical company focused on discovering and developing novel products for patients with cancer. We have proprietary targeted anti-cancer agents designed to disrupt specific cellular pathways that are important for cancer cell proliferation. We believe that the product candidates in our pipeline have the potential to be efficacious in a variety of cancers with unmet medical need. We have the following two clinical-stage programs: 1. ON 123300, multi-kinase inhibitor in solid tumors; and 2. rigosertib alone or in combination with PD-1 inhibitors for treatment of solid tumors. We are currently evaluating potential compounds for in-licensing opportunities.

Our net losses were $8.9 million and $12.5 million for the six months ended June 30, 2021 and 2020, respectively. As of June 30, 2021, we had an accumulated deficit of $437.4 million. We expect to incur significant expenses and operating losses for the foreseeable future as we continue the development of, and seek regulatory approval for, our product candidates, even if milestones under our license and collaboration agreements may be met. As of June 30, 2021, we had $43.7 million in cash and cash equivalents.

On January 12, 2021, we closed on an offering of common stock. We issued 1,303,408 shares of common stock. Net proceeds were approximately $8.5 million.

On February 16, 2021, we closed on an offering of common stock. We issued 1,916,667 shares of common stock. Net proceeds were approximately $26.7 million.

On May 20, 2021, we amended our certificate of incorporation to effect a one-for-fifteen reverse stock split of our common stock. All common stock, equity, share and per share amounts in the financial statements and notes have been retroactively adjusted to reflect the reverse stock split.

On May 20, 2021, we amended our certificate of incorporation to decrease the number of authorized shares of common stock from 250,000,000 to 125,000,000.

We believe that our cash and cash equivalents of $43.7 million, at June 30, 2021, will be sufficient to fund our operations and ongoing trials for more than eighteen months from the date of this filing. We do not have a recurring source of revenue to fund our operations and will need to raise additional funds to continue to develop and apply for regulatory approval for our drug candidates.

We are exploring various sources of funding for development and applying for regulatory approval of our research compounds as well as for our ongoing operations. If we raise additional funds through strategic collaborations and alliances or licensing arrangements with third parties, which may include existing collaboration partners, we may have to relinquish valuable rights to our technologies or product candidates or grant licenses on terms that are not favorable to us. There can be no assurance, however, that we will be successful in obtaining such financing in sufficient amounts, on terms acceptable to us, or at all. In addition, there can be no assurance that we will obtain approvals necessary to market our product candidates or achieve profitability or sustainable, positive cash flow. If we are unable to successfully raise sufficient additional capital, through future financings or through strategic and collaborative arrangements, we will not have sufficient cash to fund our ongoing trials and operations.

Product Candidates / Compounds

ON 123300 — Differentiated Multi-Kinase Inhibitor Targeting CDK4/6

We believe based on data from preclinical studies, that ON 123300 has the potential to overcome the limitations of the current generation of approved cyclin dependent kinase (CDK 4/6) inhibitors. Pursuant to a license agreement with Temple University dated January 1, 1999 as amended March 21, 2013, we licensed compounds including ON 123300 from Temple University. ON 123300 monolactate (ON 123300) is a novel multi kinase inhibitor that targets both CDK4/6 as well as other tyrosine kinases believed to drive tumor proliferation. The below table depicts the half-maximal inhibitory concentration (IC_{50}) of ON 123300 and Palbociclib, which is a quantitative measure indicating the concentration of each drug needed to inhibit, in vitro, these listed kinases by 50%.

Kinase	ON 123300 IC_{50} (nM)	PALBOCICLIB IC_{50} (nM)
CDK 4/cyclin D1	3.87	5.36
CDK 6/cyclin D1	9.82	3.76
ARK 5	4.95	>5,000.00
FLT3	12.22	>10,000.00
FYN	11.09	>10,000.00
FMS	10.00	>10,000.00
PDGFRβ	26.00	>10,000.00
FGFR1	26.00	>10,000.00
ABL	53.32	>10,000.00
PI3K-δ	144.00	>10,000.00

- ON 123300 Investigator Brochure v1.

One such tyrosine kinase ARK5, also known as NUAK1, regulates AKT dependent cell survival and migration (perhaps involved with metastases) through inhibition of cellular metabolism. The combination of CDK and ARK5 inhibitors in the same molecular entity is proposed to have a differentiated effect on cancer cells by simultaneously inhibiting both cell cycle (cytostatic) and cellular metabolism (cytotoxic) pathways through CDK and ARK5, respectively. We and our partner, HanX Biopharmaceuticals, Inc. (“HanX”), have recently initiated clinical studies to begin evaluating whether these findings from preclinical studies may translate to clinical activity or clinical benefit in cancer patients.

In certain in vitro models, the kinase inhibitory profile of ON 123300 had the highest activity against CDK4, CDK6, ARK5, FGFR1, PDGFRß and PI3K-δ, all of which are associated with the growth, survival and metastasis of human tumor cells (Reddy, 2014). In an in vitro investigation of ON 123300 against a broad spectrum of human tumor cell lines, ON 123300 displayed potent antiproliferative activity, with 50% growth inhibitory concentrations (GI50) ranging from 0.02 µM to 1.5 µM. In these in vitro models, ON 123300 exhibited a broad range of activity against a wide spectrum of cell lines of both hematological origin (lymphoma, leukemia and myeloma) as well as solid tumors derived from multiple organ sites. Studies on drug-resistant human tumor cell lines suggested that ON 123300 is not a multidrug resistance gene (mdr1) substrate and may be active against drug-resistant tumor cell lines (IBv.1 2020; Reddy, 2014). The activity of ON 123300 does not appear to be affected by the overexpression of MDR-1 and induced apoptosis in both ibrutinib-sensitive and ibrutinib-resistant patient derived cells (Divakar, 2016). The ability of ON 123300 to inhibit the CDK4/6/RB1 pathway has also been shown in pre-clinical testing of mantle cell lymphoma (Divakar, 2016), multiple myeloma (Perumal, 2016) and colorectal cancer (IBv.1 2020).

The effectiveness of first-generation non-selective CDK inhibitors (Selicilib/roscovitine and Alvocidib/ flavopiridol) in early trials was limited due to toxicities (Blachly 2013). Second-generation compounds (palbociclib, ribociclib and abemaciclib) specifically inhibit CDK4 and 6, thereby inhibiting retinoblastoma (RB) protein phosphorylation. The second generation CDK4/6 inhibitors have substantially improved clinical outcomes for patients with hormonal-receptor (HR) positive metastatic breast cancer (Hortobagyi 2018, Sledge 2017, Finn 2016). Several CDK4/6 inhibitors (palbociclib, ribociclib and abemaciclib) have been approved and are now standard of care either alone (abemaciclib) or in combination with anti-estrogen therapy for patients with HR-positive, HER2-negative metastatic breast cancer. Another CDK4/6 inhibitor has recently been approved, trilaciclib, in the supportive care space, for the prevention of myelosuppression following chemotherapy.

In December 2017, we entered into a license and collaboration agreement with HanX, a company focused on development of novel oncology products, for the further development, registration and commercialization in China of ON 123300. Under the terms of the agreement, we received an upfront payment, and will receive regulatory and commercial milestone payments, as well as royalties on any future Chinese sales if the drug is approved. The key feature of the 2017 collaboration was that HanX provided all funding required for the Chinese Investigational New Drug

Application (a “IND”) thereby enabling the studies necessary in order to seek IND approval by the National Medical Products Administration (Chinese FDA). In the fourth quarter of 2019, HanX filed an IND with the Chinese FDA which was approved on January 6, 2020. We and HanX also intended for these studies underlying the Chinese IND approval, to meet the US Food and Drug Administration (“FDA”) standards for IND approval. Accordingly, such studies were used by us for an IND filing with the US FDA. In September 2020, a Phase 1 Study with ON123300 in cancer patients was initiated in China. We maintain global rights to the study and study data outside of China.

Our IND submission to the US FDA was submitted in November 2020 and the FDA Study May Proceed letter was issued in December 2020. Enrollment into the US phase 1 study commenced in May 2021. Enrollment in the first cohort of the Phase 1 solid tumor study of ON 123300 is complete with no dose limiting toxicities (DLT’s) observed. The second cohort is currently open for enrollment. The study will assess the safety, tolerability and pharmacokinetics of ON 123300 administered orally at increasing doses starting at 40 mg daily for consecutive 28-day cycles in patients (n=36) with relapsed/refractory advanced cancer, including but not limited to, patients with breast cancer that is resistant to approved second generation CDK 4/6 inhibitors as well as patients diagnosed with advanced Non-Hodgkin’s lymphoma. In partnership with HanX, a complementary Phase 1 study for patients with advanced relapsed/refractory cancer has been initiated in China at three sites and the first patient was enrolled on September 15, 2020. The first two dose cohorts have been completed and the third dose cohort is ongoing. No dose limiting toxicities have been observed to date. Collectively, these two Phase 1 studies are expected to provide data regarding the safety profile of ON 123300 and potentially preliminary efficacy signals in patients with advanced cancer.

Positive preclinical data was announced at the American Association for Cancer Research (AACR) annual meeting, which took place April 1-5, 2017 in Washington, DC, for ON 123300. We believe our CDK inhibitor is differentiated from other agents in the market or in development due to its multi-kinase inhibition.

Retinoblastoma (Rb) protein is a master regulator of cell division and is critical to several cellular processes including senescence, self-renewal, replication and apoptosis (Engel, 2015). It is believed that inactivation of Rb by CDKs leads to malignant cell formation and occurs in the pathogenesis of most cancers. In a preclinical Retinoblastoma (Rb) positive xenograft model for breast cancer, ON 123300 activity was shown to be similar to palbociclib (Pfizer’s Ibrance ®). Moreover, based on the same preclinical model, ON 123300 may have the potential advantage of reduced neutropenia when compared to palbociclib. Whereas both compounds resulted in decreased RBC and platelet counts in this preclinical model system, palbociclib was found to have a more prominent and statistically significant ($P< 0.05$) inhibitory effect on neutrophil counts when compared to ON 123300. These results would need to be replicated in clinical trials.

In vitro studies compared the growth inhibitory activity of ON 123300 and palbociclib in breast cancer cell lines with mutated or deleted RB, which demonstrated resistance to palbociclib but retained sensitivity towards ON 123300 (IBv.1 2020). Further analyses using mantle cell lymphoma cells indicated that ON 123300 was able to induce cell death via induction of apoptosis by inhibiting the AKT/PI3K pathway while palbociclib treatment was only able to induce cell cycle arrest due to the inhibition of CDK4/6 (Divakar, 2016). ON 123300 treatment was associated with the presence of several apoptotic markers (PARP, caspase 3, caspase 7 and caspase 9) and ON 123300 (but not palbociclib) led to the generation of apoptotic cells. Overall, apoptosis following ON 123300 exposure has been observed in the following cell lines: breast cancer (IBv.1 2020, Reddy, 2014), mantle cell lymphoma (Divakar, 2016), multiple myeloma (Perumal, 2016) and colorectal cancer (IBv.1 2020).

In addition to CDK4/6 and PI3 Kinase, ON 123300 may inhibit ARK5 (NUAK1) (IC50 of 4.95 nM) (IBv.1 2020, Reddy, 2014) while palbociclib does not. ARK5 is a member of the AMP -activated protein kinase (AMPK) family and is thought to function as a key regulator of cellular energy homeo-stasis (Liu, 2012) and is important in a number of cancer cell survival pathways. Overexpression of ARK5 is associated with poor prognosis in hepatocellular carcinoma (Cui, 2013), ovarian cancers (Phippen, 2016) and glioblastoma (Lu, 2013). ARK5 is involved in the increased invasiveness, migration and metastatic potential of breast cancer cells (Chang, 2012), colorectal cancer (Kusakai, 2004), gastric cancer (Chen, 2017), and multiple myeloma (Suzuki et al., 2005) . ON 123300 inhibits ARK5 resulting in down regulation of the mTOR/MYC/RB1 pathways leading to cell cycle arrest and apoptosis.

Because ARK5 activity is now recognized as crucial in promoting cancer cell migration and invasion (Kusaki, 2004) the effect of ON 123300 treatment may have an impact on cell migration and wound healing. In certain in vitro models, ON 123300 was able to inhibit the percent migration of U87 cells in a concentration- dependent manner. The time and concentrations that were tested did not result in cell death but did inhibit cell division at the higher concentrations (IBv.1 2020). The ability of ON 123300 to inhibit cell migration was compared to palbociclib using a wound healing model. Triple negative cancer cell migration was inhibited for 72 hours in the presence of ON 123300 but not in the presence of palbociclib (IBv.1 2020).

The pathogenesis and progression of breast cancer is linked to C-Myc expression which is subsequently dependent on ARK5 activity. The inhibition of ARK5 has been shown to be lethal in MYC overexpressing tumors (Liu, 2012) and targeting ARK5 in the inhibitory profile of ON 123300 has the potential to overcome the emergence of resistance to CDK4/6 inhibitors due to the loss of retinoblastoma function and C-Myc overexpression. Preclinical studies with tumor cell lines suggest that several malignancies including HR-positive breast cancer, colorectal carcinoma, hepatocellular carcinoma, mantle cell lymphoma and multiple myeloma, may be clinically responsive to ON 123300 exposure (Reddy, 2014, Divakar, 2016, Perumal, 2016). Furthermore, ON 123300 has been tested in five murine xenograft models (breast cancer including triple negative disease, colorectal, mantle cell lymphoma and multiple myeloma) and was found to have on-target activity and be non-toxic to the animals (Reddy, 2014; Divakar, 2016; Perumal, 2016; and IBv.1 2020).

Cancer cells can lose RB function through mutation and become resistant or insensitive to palbociclib. Generally, second generation agents have not been shown to be suitable for single agent therapy and must be used in combination with hormonal therapy. In addition, the rate of disease progression that occurs, especially in patients with visceral disease (Hortobagyi 2018), may benefit from the novel inhibitory effects of ON 123300. This hypothesis needs to be proven in a clinical trial.

Unfortunately, mechanisms of acquired resistance are emerging with the approved CDK4/6 inhibitors leading to progression in patients with breast cancer (Spring, 2019; Knudsen, 2020). Therefore, the unmet medical need supports development of the next (third) generation CDK4/6 inhibitors in advanced HR+/HER- breast cancer. The inhibitory effect of ON 123300 may provide a therapeutic strategy to optimize efficacy of CDK 4/6 inhibition and reduce emergence of resistance.

We believe ON 123300 has a favorable kinase inhibitory profile in comparison to the approved CDK4/6 inhibitors (palbociclib, ribociclib, and abemaciclib) and highest single agent cytotoxicity (Perumal, 2016, Divakar, 2016).

Based on data from continuous dosing studies in rats and monkeys the safety profile of ON 123300 is anticipated to be similar to the approved CDK4/6 inhibitors with myelosuppression and gastrointestinal toxicity being most common. Management of these adverse events is expected to follow that used for the approved CDK 4/6 inhibitors. We believe that the proposed mechanism of action of ON 123300, the unmet medical need of the advanced cancers potentially targeted by ON 123300 and the anticipated safety profile of ON 123300 as seen in pre-clinical studies, support conducting Phase 1 clinical studies.

Clinical development of ON 123300 for both breast cancer as well as other solid tumors in clinical trials is warranted based on the preclinical in vitro studies as well as the xenograft models. Onconova plans to advance testing whether ON 123300 will demonstrate improved activity and/or safety in patients with advanced malignancies.

Oral Rigosertib and PD-1 Combination in KRAS-Mutated Cancers

We are currently supporting investigator-initiated studies that are exploring the use of rigosertib for cancers driven by mutated Ras genes including a Phase 1/2a study of rigosertib in combination with a PD-1 inhibitor for patients with progressive K-Ras mutated non-small cell lung cancer (NSCLC). The NSCLC study is open and continues to enroll patients. The objectives of this study are to identify the recommended Phase 2 dose (RP2D) for future studies and characterize the safety profile of the combination treatment. Results are expected in 2021. On June 28, 2021, we announced an update regarding this NSCLC study, with an expansion of the trial underway at highest dose in the current

protocol, and continued dose escalation planned with a protocol amendment as the maximum tolerated dose has not been reached. In addition, preliminary efficacy data support the preclinical observation of rigosertib augmenting the response to checkpoint inhibition (CPI) in patients who had previously failed all standard of care treatment, including CPI. We look forward to the presentation of preliminary data at the upcoming 3rd Annual RAS Targeted Drug Development Summit taking place September 21-23, 2021, and at a future major medical meeting as the data mature.

On June 17, 2021, we announced a publication in Molecular Cancer (Yan, C., Saleh, N., Yang, J. *et al.* Novel induction of CD40 expression by tumor cells with RAS/RAF/PI3K pathway inhibition augments response to checkpoint blockade. *Mol Cancer* **20,** 85; 2021) demonstrating that rigosertib synergistically combined with CPI to improve tumor growth inhibition and survival in a murine melanoma model that did not respond to CPI alone. Rigosertib's anti-cancer activity was due to its ability to reverse immunosuppressive tumor microenvironments. This pre-clinical data support the clinical evaluation of rigosertib in combination with checkpoint inhibitors. We anticipate, additional investigator initiated studies in RAS driven cancers in combination with PD-1 inhibitors, including in metastatic melanoma.

Rigosertib as monotherapy

An investigator-initiated Phase 1b/2 study with rigosertib monotherapy in advanced squamous cell carcinoma associated with recessive dystrophic epidermolysis bullosa (RDEB-SCC) has enrolled its first patient.. A preclinical study is also currently investigating rigosertib in clear cell renal carcinoma (ccRCC).

Rare Disease Program in "RASopathies"

Based on the mechanism of action data published in the journal Cell in 2016, we initiated a collaborative development program focusing on a group of rare diseases with a well- defined molecular basis in expression or defects involving the Ras effector pathways. Since RASopathies are rare congenital diseases affecting young children, we embarked on a multifaceted collaborative program involving patient advocacy, government and academic organizations. RASopathies are usually caused by germline mutations in genes that alter the RAS subfamily and mitogen-activated protein kinases (MAPK) that control signal transduction and are among the most common genetic syndromes. Together, this group of diseases can impact more than 1 in 1,000 individuals, according to RASopathies.Net.

The NCI has conducted preclinical studies with cell lines from two pediatric solid tumors (rhabdomyosarcoma and neuroblastoma), including xenograft models. For both tumor cell lines, in vitro rigosertib exposure was associated with reduced cell viability associated with destabilization of microtubules, mitotic arrest and apoptosis. In a rhabdomyosarcoma xenograft model, rigosertib treatment delayed time to tumor progression and prolonged survival in the animals treated with rigosertib. (Kowalczyk, 2020)

Studies using leukemia cells from the rare childhood RASopathy, known as Juvenile Myelomonocytic Leukemia (JMML), have been conducted. In preliminary in vitro studies performed at Notable Labs, JMML cell killing was observed following rigosertib exposure. Murine xenograft studies performed at the University of California, San Francisco and funded through the Leukemia Lymphoma Society, evaluated rigosertib in this Ras-mutated disease. Further studies with JMML and rigosertib are under consideration.

Critical Accounting Policies and Significant Judgments and Estimates

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

conditions. There have been no significant changes in our critical accounting policies as discussed in our annual report on Form 10-K filed with the SEC on March 18, 2021.

The full extent to which COVID-19 will directly or indirectly impact our business, results of operations and financial condition, including expenses and manufacturing, clinical trials and research and development costs, depends on future developments that are highly uncertain at this time.

Results of Operations

Comparison of the Three Months Ended June 30, 2021 and 2020

	Three Months Ended June 30,		
	2021	2020	Change
Revenue	$ 57,000	$ 56,000	$ 1,000
Operating expenses:			
General and administrative	2,850,000	2,594,000	(256,000)
Research and development	1,852,000	4,801,000	2,949,000
Total operating expenses	4,702,000	7,395,000	2,693,000
Loss from operations	(4,645,000)	(7,339,000)	2,694,000
Change in fair value of warrant liability	427,000	(56,000)	483,000
Other income (expense), net	(13,000)	—	(13,000)
Net loss	$ (4,231,000)	$ (7,395,000)	$ 3,164,000

Revenues

Revenues increased by $1,000, or 2%, for the three months ended June 30, 2021 when compared to the same period in 2020 because of a clinical supply credit from SymBio in the 2020 period.

General and administrative expenses

General and administrative expenses increased by $0.3 million, or 10%, to $2.9 million for the three months ended June 30, 2021 from $2.6 million for the three months ended June 30, 2020. The increase was attributable primarily to $0.8 million of expenses for investor relations, proxy solicitation, and fees related to our special meeting by proxy in the 2021 period, and also to $0.1 million higher insurance expenses. These increases were partially offset by $0.3 million lower commercialization expenses in the 2021 period.

The details of our general and administrative expenses are:

	Three Months Ended June 30,	
	2021	2020
Professional & consulting fees	$ 423,000	$ 708,000
Stock based compensation	86,000	46,000
Personnel related	772,000	692,000
Commercial	—	359,000
Public company costs	1,324,000	550,000
Insurance & other	245,000	239,000
	$ 2,850,000	$ 2,594,000

Research and development expenses

Research and development expenses decreased by $2.9 million, or 61%, to $1.9 million for the three months ended June 30, 2021 from $4.8 million for the three months ended June 30, 2020. This decrease was caused primarily by $2.0 million lower clinical development and consulting expenses on the INSPIRE program in the 2021 period, and also by $0.7 million lower personnel and stock compensation expense during the 2021 period, following reductions in our

workforce completed in the third and fourth quarter of 2020 and $0.2 million lower manufacturing and development expenses related to rigosertib.

The details of our research and development expenses are:

	Three Months Ended June 30,	
	2021	2020
Preclinical & clinical development	$ 594,000	$ 2,002,000
Personnel related	296,000	993,000
Manufacturing, formulation & development	553,000	739,000
Stock based compensation	7,000	47,000
Consulting fees	402,000	1,020,000
	$ 1,852,000	$ 4,801,000

Change in fair value of warrant liability

The fair value of the warrant liability decreased $427,000 for the three months ended June 30, 2021, compared to an increase of $56,000 for the three months ended June 30, 2020. This change was caused by a decrease in the 2021 period of the fair market value of the warrants issued in our rights offering in 2016. These warrants expired in July 2021.

Other income (expense), net

Other income (expense), net, was a $13,000 loss for the three months ended June 30, 2021 and $0 for the three months ended June 30, 2020. The change of $13,000 was due to $6,000 lower net interest income in the 2021 period and $7,000 higher foreign currency exchange losses in the 2021 period.

Comparison of the Six Months Ended June 30, 2021 and 2020

	Six Months Ended June 30,		
	2021	2020	Change
Revenue	$ 113,000	$ 108,000	$ 5,000
Operating expenses:			
General and administrative	5,067,000	4,401,000	(666,000)
Research and development	3,789,000	8,171,000	4,382,000
Total operating expenses	8,856,000	12,572,000	3,716,000
Loss from operations	(8,743,000)	(12,464,000)	3,721,000
Change in fair value of warrant liability	(209,000)	(119,000)	(90,000)
Other income (expense), net	6,000	96,000	(90,000)
Net loss	$ (8,946,000)	$ (12,487,000)	$ 3,541,000

Revenues

Revenues increased by $5,000, or 5%, for the six months ended June 30, 2021 when compared to the same period in 2020 because of a clinical supply credit from SymBio in the 2020 period.

General and administrative expenses

General and administrative expenses increased by $0.7 million, or 15%, to $5.1 million for the six months ended June 30, 2021 from $4.4 million for the six months ended June 30, 2020. The increase was attributable primarily to $1.1 million of expenses for investor relations, proxy solicitation, and fees related to our special meeting by proxy in the 2021 period, to $0.1 million higher personnel related costs, and also to $0.2 million higher insurance expenses. These increases were partially offset by $0.3 million lower professional and consulting fees, and $0.4 million of commercial expenses during the 2020 period.

The details of our general and administrative expenses are:

	Six Months Ended June 30,	
	2021	2020
Professional & consulting fees	$ 941,000	$ 1,202,000
Stock based compensation	120,000	90,000
Personnel related	1,573,000	1,420,000
Commercial	—	423,000
Public company costs	1,855,000	738,000
Insurance & other	578,000	528,000
	$ 5,067,000	$ 4,401,000

Research and development expenses

Research and development expenses decreased by $4.4 million, or 54%, to $3.8 million for the six months ended June 30, 2021 from $8.2 million for the six months ended June 30, 2020. This decrease was caused primarily by $3.6 million lower clinical development and consulting expenses on the INSPIRE program in the 2021 period, and also by $0.8 million lower personnel and stock compensation expense during the 2021 period, following reductions in our workforce completed in the third and fourth quarter of 2020.

The details of our research and development expenses are:

	Six Months Ended June 30,	
	2021	2020
Preclinical & clinical development	$ 1,160,000	$ 3,911,000
Personnel related	1,117,000	1,849,000
Manufacturing, formulation & development	708,000	799,000
Stock based compensation	16,000	94,000
Consulting fees	788,000	1,518,000
	$ 3,789,000	$ 8,171,000

Change in fair value of warrant liability

The fair value of the warrant liability increased $0.2 million for the six months ended June 30, 2021, compared to an increased of $0.1 million for the six months ended June 30, 2020. This change was caused by a larger increase in the 2021 period of the fair market value of the warrants issued in our rights offering in 2016.

Other income (expense), net

Other income (expense), net, was income of $6,000 for the three months ended June 30, 2021 and $96,000 for the six months ended June 30, 2020. The change of $90,000 was due to $103,000 lower net interest income in the 2021 period due to lower average cash balances, partially offset by $13,000 lower foreign currency exchange losses and other items in the 2021 period.

Liquidity and Capital Resources

Since our inception, we have incurred net losses and experienced negative cash flows from our operations. We incurred net losses of $8.9 million and $12.5 million for the six months ended June 30, 2021 and 2020, respectively. Our operating activities used $11.0 million and $11.8 million of net cash during the six months ended June 30, 2021 and 2020, respectively. At June 30, 2021, we had an accumulated deficit of $437.5 million, working capital of $36.7 million, and cash and cash equivalents of $43.7 million. We believe that our cash and cash equivalents as of June 30, 2021, will be sufficient to fund our operations and ongoing trials for more than eighteen months from the date of this filing.

Cash Flows

The following table summarizes our cash flows for the six months ended June 30, 2021 and 2020:

	Six Months Ended June 30,	
	2021	2020
Net cash (used in) provided by:		
Operating activities	$ (10,955,000)	$ (11,844,000)
Investing activities	—	(15,000)
Financing activities	35,651,000	16,360,000
Effect of foreign currency translation	(12,000)	1,000
Net increase in cash and cash equivalents	$ 24,684,000	$ 4,502,000

Net cash used in operating activities

Net cash used in operating activities was $11.0 million for the six months ended June 30, 2021 and consisted primarily of a net loss of $8.9 million, including an increase in the fair value of warrant liability of $0.2 million, and $0.1 million of both noncash stock-based compensation and depreciation expense. Changes in operating assets and liabilities resulted in a net decrease in cash of $2.3 million. Significant changes in operating assets and liabilities included a decrease in prepaid expenses and other current assets of $0.3 million, a decrease in accounts payable and accrued liabilities of $2.5 million due to timing of invoices and payments to our vendors, and a decrease in deferred revenue of $0.1 million due to recognition of the unamortized portion of the upfront payment under our collaboration agreement with SymBio.

Net cash used in operating activities was $11.8 million for the six months ended June 30, 2020 and consisted primarily of a net loss of $12.5 million, including an increase in the fair value of warrant liability of $0.1, and $0.2 million of both noncash stock-based compensation and depreciation expense. Changes in operating assets and liabilities resulted in a net increase in cash of $0.3 million. Significant changes in operating assets and liabilities included an increase in accounts payable and accrued liabilities of $0.4 million due to timing of invoices and payments to our vendors, and a decrease in deferred revenue of $0.1 million due to recognition of the unamortized portion of the upfront payment under our collaboration agreement with SymBio.

Net cash used in investing activities

There was no cash used in investing activities during the six months ended June 30, 2021. Net cash used in investing activities was $15,000 related to computer equipment during the six months ended June 30, 2020.

Net cash provided by financing activities

Net cash provided by financing activities was $35.7 million and $16.4 million for the six months ended June 30, 2021 and 2020, respectively. The net cash provided by financing activities in the 2021 period resulted from proceeds received from the sales of common stock and the exercise of warrants. The net cash provided by financing activities in the 2020 period of $16.4 million resulted from the sale of common stock and the exercise of warrants.

Operating and Capital Expenditure Requirements

We believe that our cash and cash equivalents of $43.7 million at June 30, 2021, will be sufficient to fund our operations and ongoing trials for more than eighteen months from the date of this filing. The consolidated financial statements do not include any adjustments relating to recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might be necessary should we be unable to continue in existence.

We have not achieved profitability since our inception and we expect to continue to incur net losses for the foreseeable future. We expect our net cash expenditures in 2021 to be lower than they were in 2020, due primarily to the INSPIRE study being completed in 2020, reductions in our workforce during 2020, and having an earlier clinical stage,

and therefore less expensive to develop, pipeline in 2021. The nature, design, size, and cost of further studies will depend in large part on the outcome of ongoing studies, discussions with regulators, and the potential in-license of any additional compounds or product candidates.

For additional risks, please see “Risk Factors” in Part II of this report and in previously disclosed in our most recent annual report on Form 10-K.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

As a smaller reporting company, the Company is not required to provide the information otherwise required by this Item.

Item 4. Controls and Procedures

Managements’ Evaluation of our Disclosure Controls and Procedures

Our management, with the participation of our principal executive and principal financial officers, evaluated the effectiveness of our disclosure controls and procedures as of June 30, 2021. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the 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 a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Based on the evaluation of our disclosure controls and procedures as of June 30, 2021, our principal executive and principal financial officers concluded that, as of such date, our disclosure controls and procedures were effective.

Changes in Internal Control Over Financial Reporting

Our management, with the participation of our principal executive and principal financial officers, evaluated any changes in our internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during our most recently completed fiscal quarter. Based on that evaluation, our principal executive and principal financial officers concluded that no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the fiscal quarter ended June 30, 2021 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II — OTHER INFORMATION

Item 1. Legal Proceedings

We are not party to any pending material legal proceedings and are not aware of any such proceedings contemplated by governmental authorities.

Item 1A. Risk Factors

The following risk factor should be read in conjunction with the “Risk Factors” previously disclosed in our annual report on Form 10-K filed with the SEC on March 18, 2021 and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021.

The COVID-19 pandemic, including new variants that may be more contagious, could adversely impact our business, including our clinical trials, drug manufacturing and nonclinical activities.

As the COVID-19 pandemic continues to spread around the globe, we may experience disruptions that could severely impact our business, clinical trials, drug manufacturing and nonclinical activities. These potential disruptions may include but are not limited to delays or difficulties in clinical site initiation and patient recruitment, patient withdrawals, postponement of planned clinical or preclinical studies, redirection of site resources from studies, study modification, suspension, or termination, the introduction of remote study procedures and modified informed consent procedures, study site changes, direct delivery of investigational products to patient homes requiring state licensing, study deviations or noncompliance, diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials, delays in receiving approval from local regulatory authorities to initiate our planned clinical trials, and changes or delays in site monitoring. The foregoing may require that we consult with relevant review and ethics committees, IRBs, and the FDA. The foregoing may also impact the integrity of our study data. The effects of the COVID-19 pandemic may also increase the need for clinical trial patient monitoring and regulatory reporting of adverse effects.

The COVID-19 pandemic may also impact our ability to obtain supplies of our product candidates or other materials that may be necessary for the conduct of our development program. If any of our suppliers are adversely impacted by the COVID-19 pandemic or the restrictions resulting from the outbreak, if they cannot obtain the necessary supplies, or if such third parties need to prioritize other products or customers over us, including under the Defense Production Act, we may experience delays or disruptions in our supply chain, which could have a material and adverse impact on our business. Third party manufacturers may also need to implement measures and changes, or deviate from typical requirements because of the COVID-19 pandemic that may otherwise adversely impact our supply chains or the quality of the resulting products or supplies. Depending on the change, we may need to obtain FDA pre-approval or otherwise provide FDA with a notification of the change.

The pandemic could further impact our ability to interact with the FDA or other regulatory authorities and obtain any necessary inspections. Due to the potential impact of the COVID -19 outbreak on clinical trials, drug development, and manufacturing, FDA issued a number of guidance documents concerning how sponsors and investigators may address these challenges. FDA has also issued guidance on the development of products to treat COVID-19. FDA's guidance is continually evolving.

The COVID-19 pandemic may also result in changes in laws and regulations. By example, in March 2020, the U.S. Congress passed the Coronavirus Aid, Relief, and Economic Security Act, or CARES Act, which includes various provisions regarding FDA drug shortage reporting requirements, as well as provisions regarding supply chain security, such as risk management plan requirements, and the promotion of supply chain redundancy and domestic manufacturing. This and any future changes in law may require that we change our internal processes and procedures to ensure continued compliance.

The COVID-19 pandemic continues to rapidly evolve. The extent to which the COVID-19 may impact our business, including our drug manufacturing, nonclinical activities, clinical trials and financial condition will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the disease, the duration of the pandemic, travel restrictions and social distancing in the United States and other countries, business closures or business disruptions and the effectiveness of actions taken in the United States and other countries to contain and treat the disease.

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

Not applicable.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Not applicable.

Item 6. Exhibits

EXHIBIT INDEX

Exhibit Number	Description
3.1	Certificate of Amendment to the Tenth Amended and Restated Certificate of Incorporation of Onconova Therapeutics, Inc., as amended (Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on May 20, 2021).
3.2	Certificate of Amendment to the Tenth Amended and Restated Certificate of Incorporation of Onconova Therapeutics, Inc., as amended (Incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed on May 20, 2021).
10.1	Employment Agreement, dated June 14, 2021, by and between Onconova Therapeutics, Inc. and Mark Stephen Gelder,M.D.
10.2	Employment Agreement, dated March 9, 2021, by and between Onconova Therapeutics, Inc. and Abraham N. Oler
31.1	Rule 13a-14(a)/15d-14(a) Certifications of Principal Executive Officer
31.2	Rule 13a-14(a)/15d-14(a) Certifications of Principal Financial Officer
32.1	Section 1350 Certifications of Principal Executive Officer
32.2	Section 1350 Certifications of Principal Financial Officer
101.INS	XBRL Instance – The instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

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.

ONCONOVA THERAPEUTICS, INC.

Dated: August 16, 2021

/s/ STEVEN M. FRUCMTMAN, M. D.
Steven M. Fruchtman, M.D.
President and Chief Executive Officer
(*Principal Executive and Principal Operating Officer*)

Dated: August 16, 2021

/s/ MARK GUERIN
Mark Guerin
Chief Financial Officer
(*Principal Financial Officer*)

Exhibit 10.1

ONCONOVA THERAPEUTICS, INC.

EMPLOYMENT AGREEMENT

This Employment Agreement (the "***Agreement***") between Onconova Therapeutics, Inc., a Delaware corporation (the "***Company***") and Mark Stephen Gelder, M.D. ("***Employee***") is effective as of the date of the Employee's commencement of employment with the Company, which is expected to be no later than June 14th, 2021 (the "***Effective Date***").

WHEREAS, the Company desires to employ Employee and Employee desires to be so employed by the Company upon the terms and conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the mutual promises and undertakings herein contained, and intending to be legally bound hereby, the parties hereto agree as follows:

1. Duration of Agreement. This Agreement is effective on the date set forth above and has no specific expiration date. Unless terminated or amended in writing by the parties, this Agreement will govern Employee's continued employment by the Company until that employment ceases in accordance with Section 4 hereof.

2. Duties. Subject to all the terms and conditions hereof, the Company shall employ Employee, and Employee shall serve the Company as Chief Medical Officer. Employee shall report directly to the President and Chief Executive Officer of the Company. As Employee's position is a full-time position, Employee agrees to devote Employee's full-time effort, attention, and energies, from such location to be mutually agreed upon between Employee and the President and Chief Executive Officer, to this position and to the promotion of the business and interests of the Company. Employee will not render any professional services or engage in any activity which might be competitive with, adverse to the best interest of, or create the appearance of a conflict of interest with the Company. Employee agrees to abide by the policies, rules and regulations of the Company as they may be amended from time to time. Employee may not engage in outside employment or consulting without first obtaining prior express permission of the Company.

3. Compensation and Other Benefits.

(a) Salary. For all services rendered by Employee under this Agreement, the Company agrees to pay Employee at an initial annualized rate of three hundred and ninety-five thousand dollars ($395,000), as may be adjusted from time to time (the "***Base Salary***"), in bi-weekly installments in accordance with the Company's normal payroll cycle, less customary and legally required withholdings.

(b) Annual Bonus. In addition to Employee's other remuneration, Employee shall be eligible to receive an annual bonus (the "***Bonus***"), based on the performance of Employee and the Company. The determination of such performance and the amount of the Bonus, if any, shall be at the sole discretion of the Compensation Committee of the Board of Directors of the Company (the "***Committee***") but shall not exceed forty percent (40%) of Employee's Base Salary (the "***Target Bonus***"). In the event that Employee has earned a Bonus for a particular year, such Bonus shall be paid to Employee in the form of cash, stock options, shares of the Company's stock, or a

combination thereof, at the Committee's discretion no later than sixty (60) days following the end of such year.

(c) Stock Option. Subject to the approval of the Committee, Employee will be granted a Nonqualified Stock Option (as defined in the Company 2018 Omnibus Incentive Compensation Plan (the "***Plan***")) (the "***Option***"), pursuant to the terms of the Plan and/or a new plan or agreement under Nasdaq Listing Rule 5635(c)(4) and subject to the Company's standard form of Nonqualified Stock Option Award Agreement ("***Option Agreement***"). The number of shares of Company common stock subject to the Option is 20,000 shares. Vesting of the Option will be over four (4) years from the date of grant, with twenty-five percent (25%) vesting on the first anniversary of the date of grant and the remainder vesting in equal monthly installments for three (3) years thereafter, in each case subject to Employee's continued service with the Company through each applicable vesting date. The exercise of the Option shall be subject to the provisions of the Option Agreement, the Plan, and/or the new plan or agreement under Nasdaq Listing Rule 5635(c)(4).

(d) Employee Benefits. During the term of this Agreement, Employee shall be entitled to participate in any employee benefit plans or programs of the Company that are made generally available from time to time by the Company to similarly situated employees, including, but not limited to, health insurance, a flexible spending account and 401(k) participation.

(e) Vacation and Holidays. The Employee shall be entitled each year to four (4) weeks of vacation, and to those holidays observed by the Company. Vacation shall be taken by the Employee at such time or times as are mutually convenient to the Employee and the Company.

(f) Reimbursement of Expenses. The Company shall reimburse the Employee for all reasonable expenses incurred by Employee in connection with Employee's employment hereunder, *provided*, *however*, that such expenses were incurred in conformance with the policies of the Company, as established from time to time, and that Employee submits detailed vouchers and other records reasonably required by the Company in support of the amount and nature of such expense.

(g) Taxes and Withholding. All compensation payable and other benefits provided under this Agreement shall be subject to customary and legally required withholding for income, F.I.C.A., and other employment taxes.

4. Termination of Employment.

(a) Death of Employee. If Employee dies during the term of this Agreement, this Agreement shall terminate immediately and the Company shall pay to Employee's then-current spouse, if such spouse survives Employee, or if not, to Employee's estate, the balance of Employee's accrued and unpaid salary, unreimbursed expenses and unused accrued vacation time through the termination date.

(b) Disability of Employee. If Employee is unable to perform Employee's full-time regular duties by reason of incapacity, either physical or mental, for a period of twelve (12) consecutive weeks or ninety (90) days within any twelve (12)-month period, the Company shall have the right to terminate Employee's employment upon written notice to the Employee. If the Company decides to terminate Employee's employment under this Section 4(b), the Company shall pay to

Employee only the balance of Employee's accrued and unpaid salary, unreimbursed expenses and unused, accrued vacation time through the termination date. If the Company decides not to terminate Employee's employment as allowed under this Section, the Company shall have the option of reducing the salary thereafter payable to Employee by the amount of payment the Employee receives pursuant to any disability insurance policy or program.

(c) Termination for Cause. If Employee's employment is terminated by the Company for "Cause," as defined below, the Company shall pay Employee only the balance of Employee's accrued, but unpaid salary, unreimbursed expenses and unused, accrued vacation time through the termination date. The Company shall have the right to set off any amounts due to Employee by any amounts owed by Employee to the Company at the time Employee's employment terminates, and Employee hereby authorizes the Company to make this setoff. Employee's employment may be terminated for "Cause" at any time upon delivery of written notice to Employee. "***Cause***" means the occurrence of any of the following events: (i) any gross failure on the part of Employee (other than by reason of disability as provided in Section 4(b)) to faithfully and professionally carry out Employee's duties or to comply with any other material provision of this Agreement, which failure continues after written notice thereof by the Company, *provided* that the Company shall not be required to provide such notice in the event that such failure (A) is not susceptible to remedy or (B) relates to the same type of acts or omissions as to which such notice has been given on a prior occasion; (ii) Employee's dishonesty (which shall include, without limitation, any misuse or misappropriation of the Company's assets), or other willful misconduct (including, without limitation, any conduct on the part of Employee intended to or likely to injure the business of the Company); (iii) Employee's conviction for any felony or for any other crime involving moral turpitude, whether or not relating to Employee's employment; (iv) in accordance with applicable federal, state or local laws, Employee's insobriety or use of illegal drugs, chemicals or controlled substances either (A) in the course of performing Employee's duties and responsibilities under this Agreement, or (B) otherwise affecting the ability of Employee to perform the same; (v) Employee's failure to comply with a lawful written direction of the Company; or (vi) any wanton and willful dereliction of duties by Employee. The existence of any of the foregoing events or conditions shall be determined by the Company in the exercise of its reasonable judgment.

(d) Termination by the Company without Cause or by Employee for Good Reason. If Employee's employment by the Company ceases due to a termination by the Company without Cause (as defined above) or a resignation by Employee for Good Reason (as defined below), in each case following the one-year anniversary of the Effective Date, the Company shall:

(i) pay to Employee all accrued and unpaid Base Salary through the date of such cessation of employment at the time such Base Salary would otherwise be paid according to the Company's usual payroll practices;

(ii) to the extent then unpaid, pay to Employee the annual Bonus (if any) with respect to the fiscal year ended immediately prior to the cessation of Employee's employment, which such Bonus shall be paid at the time such Bonus would have otherwise been paid absent Employee's cessation of employment;

(iii) pay to Employee, subject to Employee's delivery to the Company of a waiver and release of claims agreement in a form acceptable to the Company (the "***Release***") that becomes effective and irrevocable in accordance with Section 17(d) (the "***Release Requirement***") and

Employee's continued compliance with the restrictive covenants in Sections 5, 6 and 7 in this Agreement,

(A) in the event Employee's employment by the Company ceases due to a termination by the Company without Cause or by Employee for Good Reason other than during the Change in Control Protection Period (as defined below) (and, for the avoidance of doubt, following the one-year anniversary of the Effective Date), monthly severance payments equal to one-twelfth of the sum of (x) Employee's then current Base Salary, and (y) an amount equal to the Target Bonus for the fiscal year during which Employee's employment by the Company ceases, which severance payments shall be paid for the duration of the Severance Period (as defined below) in accordance with the Company's usual payroll practices; or

(B) in the event Employee's employment by the Company ceases due to a termination by the Company without Cause or by Employee for Good Reason during the Change in Control Protection Period (and, for the avoidance of doubt, following the one-year anniversary of the Effective Date), a severance payment amount equal to the sum of (x) the Employee's then current Base Salary plus (y) an amount equal to the Target Bonus for the fiscal year during which Employee's employment by the Company ceases, in a lump sum payment less all applicable withholding taxes, within seventy-five (75) days following the later of the date of his termination of employment or the Change in Control;

(iv) subject to the Release Requirement and Employee's continued compliance with the restrictive covenants in Sections 5, 6 and 7 in this Agreement, cause any outstanding unvested options to purchase shares of stock of the Company previously awarded to Employee to become fully vested as of the date of his termination of employment pursuant to this Section 4(d); and

(v) subject to the Release Requirement and Employee's continued compliance with the restrictive covenants in Sections 5, 6 and 7 in this Agreement, if Employee validly elects to receive continuation coverage under the Company's group health plan pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985 ("***COBRA***"), reimburse Employee for a portion of the applicable premium payable for such COBRA continuation coverage for the duration of the Severance Period in an amount equal to the employer's portion of such premiums at the rate in effect on Employee's termination date; *provided*, *however*, that if the Company determines that it cannot continue to provide Employee with such benefit (either pursuant to the terms of the applicable group health plan, as a result of applicable law, or otherwise), the Company shall make supplemental monthly severance payments to Employee in an amount equal to the monthly amount the Company would have otherwise reimbursed to Employee for his participation in such group health plan for the duration of the Severance Period.

For purposes of this Agreement:

"***Change in Control***" has the same meaning ascribed to it in the Plan.

"***Change in Control Protection Period***" shall mean the twelve (12)-month period following a Change in Control.

"***Good Reason***" shall mean: (i) the breach by the Company of any material provision of this Agreement (*provided*, *however*, that a reduction in Employee's Base Salary by less than twenty percent (20%) in and for any twelve month period shall not be a material breach by the

Company if it is made in connection with a reduction in base salaries imposed on a majority of other senior executives of the Company and Employee's Base Salary is not reduced by a percentage that is greater than the percentage by which the base salary of a majority of other senior executives of the Company is reduced in and for that same twelve month period); (ii) a relocation of Employee's principal business location to a location more than fifty (50) miles from Employee's then-current business location; or (iii) at any time there occurs any of the following which results in a material adverse change in Employee's duties, position, or compensation without the express prior written consent of Employee: (1) the sale or transfer, whether in one transaction or in a series of transactions, of substantially all of the assets of the Company; or (2) the merger or consolidation of the Company with or into any other person or entity under circumstances where the Company is not the surviving entity in such merger or where persons having control of the Company immediately prior to the transaction are not in control of the Company immediately after the transaction. None of the foregoing events or conditions will constitute Good Reason unless Employee provides the Company with written objection to the event or condition within thirty (30) days following the occurrence thereof, the Company does not cure the event or condition within thirty (30) days of receiving that written objection, and Employee resigns Employee's employment within thirty (30) days following the expiration of that cure period.

"***Severance Period***" shall mean the nine (9)-month period immediately following the date Employee's employment with the Company ceases due to a termination by the Company without Cause or by Employee for Good Reason; *provided*, *however*, that in the event Employee's employment by the Company ceases due to a termination by the Company without Cause or by Employee for Good Reason during the Change in Control Protection Period, the Severance Period will equal twelve (12) months.

(e) Code Section 280G. It is the intention of Employee and of the Company that no payments by the Company to or for the benefit of Employee under this Agreement or any other agreement or plan, if any, pursuant to which Employee is entitled to receive payments or benefits shall be nondeductible to the Company by reason of the operation of Section 280G of the Internal Revenue Code of 1986, as amended, and the regulations and guidance promulgated thereunder (the "***Code***") relating to parachute payments or any like statutory or regulatory provision. Accordingly, and notwithstanding any other provision of this Agreement or any such agreement or plan, if by reason of the operation of said Section 280G of the Code or any like statutory or regulatory provision, any such payments exceed the amount which can be deducted by the Company, such payments shall be reduced to the maximum amount which can be deducted by the Company. The Company shall make all reasonable efforts to avoid rendering such payments or benefits nondeductible. To the extent that payments exceeding such maximum deductible amount have been made to or for the benefit of Employee, such excess payments shall be refunded to the Company with interest thereon at the applicable Federal rate determined under Section 1274(d) of the Code, compounded annually, or at such other rate as may be required so that no such payments shall be nondeductible to the Company by reason of the operation of Section 280G of the Code or any like statutory or regulatory provision. To the extent any such reduction in payments is necessary, any amounts subject to Code Section 409A will be reduced first, then to the extent any remaining reduction is necessary such further reduction shall occur to the payments or benefits in the order that results in the greatest economic present value of all payments actually made to Employee.

(f) Voluntary Resignation. Employee may voluntarily resign from employment with the Company at any time. In the event Employee voluntarily resigns from employment with the Company, Employee shall provide the Company with thirty (30) days' notice of Employee's intent to resign. The Company shall pay Employee only the balance of Employee's accrued, but unpaid salary, unreimbursed expenses and any unused, accrued vacation time through Employee's last day of work.

(g) Deemed Resignation. Upon termination of Employee's employment for any reason, Employee shall be deemed to have resigned from all offices and board memberships, if any, then held with the Company or any of its affiliates, and, at the Company's request, Employee shall execute such documents as are necessary or desirable to effectuate such resignations.

(h) No Other Severance. Upon termination of Employee's employment for any reason, the Company will have no severance obligations under this Agreement other than as provided in this Section 4, which shall supersede any prior or contemporaneous oral or written severance plan, policy, program, or other arrangement maintained by the Company to the extent such benefits would provide for duplication of benefits to Employee.

5. Non-Competition.

(a) For purposes of this Agreement, "***Competitor***" shall mean any person, company, or entity whose primary business at the time is, or whose then-current business plan contemplates engaging in activities which may be, competitive with products and services that were or were being designed, conceived, marketed, sold, distributed and/or developed by the Company during Employee's employment by the Company or at the time of termination of Employee's employment by the Company.

(b) Employee agrees that so long as Employee is employed by the Company, and for a period of twelve (12) months after the termination of his employment, Employee will not, directly or indirectly, whether for compensation or not, own, manage, operate, join, control, work for, or participate in, or be connected as a stockholder, officer, employee, partner, creditor, guarantor, advisor or otherwise, with a Competitor. The foregoing shall not be construed, however, as preventing Employee from investing his assets in such form or manner as will not require services on the part of Employee in the operations of the businesses in which such investments are made, *provided* that any such business is publicly owned and the interest of Employee therein is solely that of an investor owning not more than five percent (5%) of the outstanding equity securities of any such business. Should Employee breach the provisions of this Paragraph, the Company shall, in addition to any equitable or legal relief to which it is otherwise entitled, be entitled to cease all payments and benefits under the terms of this Agreement and shall be entitled to pursue all remedies it might have including, but not limited to, those contained in this Agreement.

(c) For the period of twelve (12) months after the termination of this Agreement for any reason whatsoever, Employee shall not hire, retain or engage as a director, officer, employee, agent or in any other capacity any person or persons who are employed by the Company or who were at any time (within a period of six (6) months immediately prior to the date of Employee's termination) employed by the Company or otherwise interfere with the relationship between such persons and the Company.

(d) If the period of time or area herein specified should be adjudged unreasonable in any court proceeding, then the period of time shall be reduced by such number of months or the area shall be reduced by elimination of such portion thereof as deemed unreasonable, so that this covenant may be enforced during such period of time and in such area as is adjudged to be reasonable.

6. Confidential Information.

(a) At all times during Employee's employment and thereafter, Employee will hold in strictest confidence and will not disclose, use, lecture upon or publish any of the Company's Proprietary Information (defined below), except as such use may be required in connection with Employee's work for the Company, or unless an officer of the Company expressly authorizes such disclosure in writing. Employee will obtain Company's written approval before publishing or submitting for publication any material (written, verbal, or otherwise) that relates to Employee's work for Company and/or incorporates any Proprietary Information. Employee hereby assigns to the Company any rights Employee may have or acquire in such Proprietary Information and recognizes that all Proprietary Information shall be the sole property of the Company and its assigns.

(b) The term "***Proprietary Information***" shall mean any and all confidential and/or proprietary knowledge, data or information of the Company, whether acquired by Employee while employed by the Company, during Employee's prior service as a consultant to the Company, or otherwise. By way of illustration but not limitation, "Proprietary Information" includes but is not limited to (i) trade secrets, inventions, mask works, ideas, methods, processes, formulas, chemical structures and methods for chemical synthesis, structure-activity relationships, assay methodologies, characteristics, equipment and equipment designs, results, formulations and biological, pharmacological, toxicological and clinical data, physical, chemical or biological materials, source and object codes, data, programs, other works of authorship, know-how, improvements, discoveries, developments, compilations, shop practices, supplier lists, designs and techniques (hereinafter collectively referred to as "***Inventions***"); and (ii) information regarding plans for research, development, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers; and (iii) information regarding the skills and compensation of other employees of the Company. Notwithstanding the foregoing, it is understood that, at all times, Employee is free to use information which is generally known in the trade or industry, which is not gained as a result of a breach of this Agreement, and which is acquired as a result of Employee's own skill, knowledge, know-how and experience.

(c) Employee understands, in addition, that the Company has received and in the future will receive from third parties confidential or proprietary information ("***Third Party Information***") subject to a duty on the Company's part to maintain the confidentiality of such information and to use it only for certain limited purposes. During the period of Employee's employment and thereafter, Employee will hold Third Party Information in the strictest confidence and will not disclose to anyone (other than Company personnel who need to know such information in connection with their work for the Company) or use, except in connection with Employee's work for the Company, Third Party Information unless expressly authorized by an officer of the Company in writing.

(d) During Employee's employment by the Company, Employee will not improperly use or disclose any confidential information or trade secrets, if any, of any of his former employers or any other person to whom Employee has an obligation of confidentiality, and Employee will not bring onto the premises of the Company any unpublished documents or any property belonging to any former employer or any other person to whom Employee has an obligation of confidentiality, unless such action is consented to in writing by all persons to whom the relevant obligation of confidentiality is owed. Employee shall not work on Company projects on the grounds of, or using the equipment of, any third party, unless such work is agreed to by the Company in writing.

(e) Upon termination of his employment, Employee shall return to the Company all Proprietary Information in any tangible form in Employee's possession, including copies thereof.

7. Company Right to Inventions.

(a) Inventions, if any, patented or unpatented, which Employee made prior to the commencement of Employee's employment with the Company are excluded from the scope of this Agreement. To preclude any possible uncertainty, Employee has provided on Appendix A (Previous Inventions) attached hereto a complete list of all Inventions that Employee has, alone or jointly with others, conceived, developed or reduced to practice or caused to be conceived, developed or reduced to practice prior to the commencement of Employee's employment with the Company, that Employee considers to be Employee's property or the property of third parties, and that Employee wishes to have excluded from the scope of this Agreement (collectively referred to as "***Prior Inventions***"). If disclosure of any such Prior Invention would cause Employee to violate any prior confidentiality agreement, Employee understands that Employee shall not list such Prior Inventions in Appendix A but shall only disclose a cursory name for each such invention (bearing in mind that where necessary the naming shall not be so specific as to violate the confidentiality obligation), a listing of the party(ies) to whom the invention belongs, and the fact that full disclosure as to such invention has not been made for that reason. Space is provided on Appendix A for this purpose. If, in the course of Employee's employment with the Company, Employee incorporates a Prior Invention into a Company product, process or machine, the Company is hereby granted and shall have, to the extent of Employee's right to make such grant, a nonexclusive, royalty-free, irrevocable, perpetual, worldwide license (with rights to sublicense through multiple tiers of sublicensees) to make, have made, modify, use, import, sell and offer to sell such Prior Invention. Notwithstanding the foregoing, Employee agrees that Employee will not incorporate, or permit to be incorporated, Prior Inventions in any Company Inventions without the Company's prior written consent.

(b) Subject to Section 7(d), Employee hereby assigns and agrees to assign in the future (when any such Inventions are first reduced to practice or a description thereof first fixed in a tangible medium, as applicable) to the Company all of Employee's right, title and interest in and to any and all Inventions, whether or not patentable or registerable under patent, intellectual property, copyright or similar statutes, made or conceived or reduced to practice or learned by Employee, either alone or jointly with others, during the period of Employee's employment with the Company. Inventions assigned to the Company, or to a third party as directed by the Company pursuant to this Section 7(b), are hereinafter referred to as "***Company Inventions***."

(c) During the period of Employee's employment, Employee will promptly disclose to the Company fully and in writing all Inventions authored, conceived or reduced to practice by

Employee, either alone or jointly with others. In addition, Employee will promptly disclose to the Company all patent applications filed by Employee or on Employee's behalf during Employee's employment and within one (1) year after termination of employment. At the time of each such disclosure, Employee will advise the Company in writing of any Inventions that Employee believes qualify for exclusion from Employee's obligation to assign hereunder; and Employee will at that time provide to the Company in writing all evidence necessary to substantiate that belief.

(d) As directed by the Company, Employee agrees to assign all Employee's right, title and interest in and to any particular Company Invention to a third party, including without limitation the United States.

(e) Employee acknowledges that all original works of authorship which are made by Employee (solely or jointly with others) within the scope of Employee's employment and which are protectable by copyright are "works made for hire," pursuant to United States Copyright Act (17 U.S.C. § 101).

(f) Employee will assist the Company in every proper way to obtain, and from time to time enforce, United States and foreign trade secret, patent, copyright, mask work and other intellectual property rights ("***Proprietary Rights***") relating to Company Inventions in any and all countries. To that end, Employee will execute, verify and deliver such documents and perform such other acts (including appearances as a witness) as the Company may reasonably request for use in applying for, obtaining, perfecting, evidencing, sustaining and enforcing such Proprietary Rights and the assignment thereof. In addition, Employee will execute, verify and deliver assignments of such Proprietary Rights to the Company, its successor in interest, or its designee. Employee's obligation to assist the Company with respect to Proprietary Rights relating to such Company Inventions in any and all countries shall continue beyond the termination of Employee's employment.

In the event the Company is unable for any reason, after reasonable effort, to secure Employee's signature on any document needed in connection with the actions specified in this Section 7(f), Employee hereby irrevocably designates and appoints the Company and its duly authorized officers and agents as Employee's agent and attorney-in-fact, which appointment is coupled with an interest, to act for and on Employee's behalf to execute, verify and file any such documents and to do all other lawfully permitted acts to further the purposes of the preceding paragraph with the same legal force and effect as if executed by Employee.

(g) Employee agrees to keep and maintain adequate and current records (in the form of notes, sketches, drawings and in any other form that may be required by the Company) of all Proprietary Information developed by Employee and all Inventions made by Employee during the period of Employee's employment at the Company, which records shall be available to and remain the sole property of the Company at all times.

(h) Employee represents that Employee's performance of all the terms of this Agreement and as an employee of the Company does not and will not breach any agreement to keep in confidence information acquired by Employee in confidence or in trust prior to Employee's employment by the Company. Employee has not entered into, and Employee agrees that Employee will not enter into, any agreement either written or oral in conflict herewith.

8. Remedies. Because Employee's services are personal and unique and because Employee may have access to and become acquainted with the Proprietary Information of the Company, the Company shall have the right to enforce this Agreement and any of its provisions by injunction, or other equitable relief, without bond (if allowed by applicable law), and without prejudice to any other rights and remedies that the Company may have for a breach of this Agreement. In the event that Employee performs services for other entities while employed by the Company or leaves the employ of the Company, Employee hereby consents to the notification of Employee's new employer of Employee's rights and obligations under this Agreement.

9. Arbitration. Any and all disputes between the parties (except actions to enforce the provisions of Sections 5, 6 or 7 of this Agreement), arising under or relating to this Agreement or any other dispute arising between the parties, including claims arising under any employment discrimination laws, shall be adjudicated and resolved exclusively through binding arbitration before the American Arbitration Association pursuant to the American Arbitration Association's then-in-effect National Rules for the Resolution of Employment Disputes (hereafter "***Rules***"), available at https://www.adr.org/sites/default/files/National%20Rules%20for%20the%20Resolution%20of%20Employment%20Disputes%20Jan%2001%2C%202004.pdf as of the date hereof. The initiation and conduct of any arbitration hereunder shall be in accordance with the Rules and each side shall bear its own costs and counsel fees in such arbitration. Any arbitration hereunder shall be conducted in Philadelphia, Pennsylvania, and any arbitration award shall be final and binding on the Parties. The arbitrator shall have no authority to depart from, modify, or add to the written terms of this Agreement. The arbitration provisions of this Section 9 shall be interpreted according to, and governed by, the Federal Arbitration Act, 9 U.S.C. § 1 *et seq.*, and any action pursuant to such Act to enforce any rights hereunder shall be brought exclusively in the United States District Court for the Eastern District of Pennsylvania. The parties consent to the jurisdiction of (and the laying of venue in) such court.

10. General Indemnification. The Company shall indemnify the Employee against any and all demands, claims, damages and suits, actions and legal proceedings brought against the Employee, in his individual capacity or in his official capacity, as agent and/or Employee of the Company for claims arising during his employment. In addition, the Company shall advance to the Employee reasonable attorney's fees in connection with the foregoing.

11. Severability. The terms of this Agreement and each Paragraph thereof shall be considered severable and the invalidity or unenforceability of any part thereof shall not affect the validity or enforceability of the remaining portions or provisions hereof.

12. Notices. Any notice required or permitted to be given under this Agreement shall be sufficient, if in writing and delivered by registered or certified mail or overnight delivery service to his residence in the case of Employee, or to its principal office in the case of the Company.

13. Assignment. The rights and obligations of the Company under this Agreement shall inure to the benefit of and be binding upon its successors and assigns. Neither this Agreement nor any rights or interests herein or created hereby may be assigned or otherwise transferred voluntarily or involuntarily by Employee.

14. Waiver. The waiver by the Company or Employee of a breach of any provision of this Agreement by the other shall not operate or be construed as a waiver of any subsequent breach.

15. Applicable Law. This Agreement shall be interpreted and construed under the laws of the Commonwealth of Pennsylvania.

16. Entire Agreement; Prior Agreements. This instrument contains the entire agreement of the parties with respect to the subject matter hereof and supersedes any and all prior or contemporaneous agreements, oral or written, concerning the subject matter contained herein, including without limitation any prior agreements between the Company and Employee. It may not be changed or altered, except by an agreement in writing signed by the party against whom enforcement of any waiver, change, modification, extension or discharge is sought.

17. Code Section 409A.

(a) Notwithstanding anything herein to the contrary, this Agreement is intended to be interpreted and applied so that the payments and benefits set forth herein shall either be exempt from the requirements of Code Section 409A or shall comply with the requirements of Code Section 409A and, accordingly, to the maximum extent permitted, this Agreement shall be interpreted to be exempt from or in compliance with Code Section 409A. The parties hereto agree that the payments and benefits set forth herein comply with or are exempt from the requirements of Code Section 409A and agree not to take any position, and to cause their affiliates, successors and assigns not to take any position, inconsistent with such interpretation for any reporting purposes, whether internal or external.

(b) Notwithstanding anything in this Agreement or elsewhere to the contrary, a termination of employment shall not be deemed to have occurred for purposes of any provision of this Agreement providing for the payment of any amounts or benefits that constitute "non-qualified deferred compensation" within the meaning of Code Section 409A upon or following a termination of the Employee's employment unless such termination is also a "separation from service" within the meaning of Code Section 409A and, for purposes of any such provision of this Agreement, references to a "termination," "termination of employment" or like terms shall mean "separation from service" and the date of such separation from service shall be treated as the date of termination for purposes of any such payment or benefits. Notwithstanding any other provision of this Agreement to the contrary, if the Employee is a "specified employee" within the meaning of Code Section 409A and the regulations issued thereunder, and a payment or benefit provided for in this Agreement would be subject to additional tax under Code Section 409A if such payment or benefit is paid within six (6) months after the Employee's "separation from service" (within the meaning of Code Section 409A), then such payment or benefit required under this Agreement shall not be paid (or commence) during the six-month period immediately following the Employee's separation from service except as provided in the immediately following sentence. In such an event, any payments or benefits that would otherwise have been made or provided during such six (6)-month period and which would have incurred such additional tax under Code Section 409A shall instead be paid to the Employee in a lump-sum cash payment on the earlier of (i) the first regular payroll date of the seventh (7^{th}) month following the Employee's separation from service or (ii) the tenth (10^{th}) business day following the Employee's death.

(c) It is intended that each installment of any severance payments and benefits provided under this Agreement shall be treated as a separate "payment" for purposes of Code Section 409A. Neither the Employee nor the Company shall have the right to accelerate or defer the delivery of any such payments or benefits except to the extent specifically permitted or required by Code Section 409A. All reimbursements and in-kind benefits provided under this Agreement shall be made or provided in accordance with the requirements of Code Section 409A to the extent that such reimbursements or in-kind benefits are subject to Code Section 409A, including, where applicable, the requirements that (i) the amount of expenses eligible for reimbursement during a calendar year may not affect the expenses eligible for reimbursement in any other calendar year, (ii) the reimbursement of an eligible expense shall be made promptly and in all cases on or before the last day of the calendar year following the year in which the expense is incurred and (iii) the right to reimbursement is not subject to set off or liquidation or exchange for any other benefit.

(d) Notwithstanding anything contained herein to the contrary in this Agreement, to the extent that any payments due under this Agreement as a result of Employee's termination of employment are subject to Employee's execution and delivery of the Release, (i) if Employee fails to execute the Release on or prior to the Release Expiration Date (as defined below) or timely revokes Employee's acceptance of the Release thereafter, Employee shall not be entitled to any payments or benefits otherwise conditioned on the Release, and (ii) in any case where Employee's date of termination and the last day the Release may be considered or, if applicable, revoked, fall in two separate taxable years, any payments required to be made to Employee that are conditioned on the Release and are treated as nonqualified deferred compensation for purposes of Code Section 409A shall be made in the later taxable year. For purposes of this Section 17(d), "***Release Expiration Date***" shall mean (x) if Employee is under 40 years old as of the date of termination, the date that is seven (7) days following the date upon which the Company timely delivers the Release to Employee, and (y) if Employee is 40 years or older as of the date of termination, the date that is twenty-one (21) days following the date upon which the Company timely delivers the Release to Employee, or, in the event that Employee's termination of employment is "in connection with an exit incentive or other employment termination program" (as such phrase is defined in the Age Discrimination in Employment Act of 1967), the date that is forty-five (45) days following such delivery date. To the extent that any payments of nonqualified deferred compensation (within the meaning of Code Section 409A) due under this Agreement as a result of Employee's termination of employment are delayed pursuant to this Section 17(d), such amounts shall be paid in a lump sum on the first payroll date following the date that Employee executes and does not revoke the Release (and the applicable revocation period has expired) or, in the case of any payments subject to Section 17(d)(ii), on the first payroll period to occur in the subsequent taxable year, if later.

18. Whistleblower Protections and Trade Secrets. Notwithstanding anything to the contrary contained herein, nothing in this Agreement prohibits Employee from reporting possible violations of federal law or regulation to any United States governmental agency or entity in accordance with the provisions of and rules promulgated under Section 21F of the Securities Exchange Act of 1934 or Section 806 of the Sarbanes-Oxley Act of 2002, or any other whistleblower protection provisions of state or federal law or regulation (including the right to receive an award for information provided to any such government agencies). Furthermore, in accordance with 18 U.S.C. § 1833, notwithstanding anything to the contrary in this Agreement: (i) Employee shall not be in breach of this Agreement, and shall not be held criminally or civilly liable under any federal

or state trade secret law (x) for the disclosure of a trade secret that is made in confidence to a federal, state, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of law, or (y) for the disclosure of a trade secret that is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal; and (ii) if Employee files a lawsuit for retaliation by the Company for reporting a suspected violation of law, Employee may disclose the trade secret to Employee's attorney, and may use the trade secret information in the court proceeding, if Employee files any document containing the trade secret under seal, and does not disclose the trade secret, except pursuant to court order.

19. Counterparts. This Amendment may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original and all of which shall constitute the same instrument. Any and all counterparts may be executed by facsimile.

[*signature page follows*]

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

ONCONOVA THERAPEUTICS, INC.

By: /s/ Steven Fruchtman
Name: Steven M. Fruchtman, M.D.
Title: President and CEO

EMPLOYEE:

By: /s/ Mark S. Gelder
Mark Stephen Gelder, M.D.

APPENDIX A

TO: Steven M. Fruchtman, M.D.

FROM: Mark Stephen Gelder, M.D.

DATE:

SUBJECT: PREVIOUS INVENTIONS

1. Except as listed in Section 2 below, the following is a complete list of all inventions or improvements relevant to the subject matter of my employment by Onconova Therapeutics, Inc. (the "***Company***") that have been made or conceived or first reduced to practice by me alone or jointly with others prior to my engagement by the Company:

[ ] No inventions or improvements.

[ ] See below:

[ ] Additional sheet(s) attached.

2. Due to a prior confidentiality agreement, I cannot complete the disclosure under Section 1 above with respect to inventions or improvements generally listed below, the proprietary rights and duty of confidentiality with respect to which I owe to the following party(ies):

INVENTION OR IMPROVEMENT	PARTY(IES)	RELATIONSHIP
1.		
2.		
3.		
4.		
5.		
6.		

[ ] Additional sheet(s) attached.

ONCONOVA THERAPEUTICS, INC.

EMPLOYMENT AGREEMENT

This Employment Agreement (the "***Agreement***") is effective as of March 9, 2021 (the "***Effective Date***") between Onconova Therapeutics, Inc., a Delaware corporation (the "***Company***") and Abraham N. Oler ("***Employee***").

WHEREAS, the Company desires to employ Employee and Employee desires to be so employed by the Company upon the terms and conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the mutual promises and undertakings herein contained, and intending to be legally bound hereby, the parties hereto agree as follows:

1. Duration of Agreement. This Agreement is effective on the date set forth above and has no specific expiration date. Unless terminated or amended in writing by the parties, this Agreement will govern Employee's continued employment by the Company until that employment ceases in accordance with Section 4 hereof.

2. Duties. Subject to all the terms and conditions hereof, the Company shall employ Employee, and Employee shall serve the Company as Senior Vice President of Corporate Development and General Counsel. Employee shall report directly to the Chief Executive Officer of the Company. As Employee's position is a full-time position, Employee agrees to devote Employee's full-time effort, attention, and energies, from such location to be mutually agreed upon between Employee and the Chief Executive Officer, to this position and to the promotion of the business and interests of the Company. Employee will not render any professional services or engage in any activity which might be competitive with, adverse to the best interest of, or create the appearance of a conflict of interest with the Company. Employee agrees to abide by the policies, rules and regulations of the Company as they may be amended from time to time. Employee may not engage in outside employment or consulting without first obtaining prior express permission of the Company.

3. Compensation and Other Benefits.

(a) Salary. For all services rendered by Employee under this Agreement, the Company agrees to pay Employee at an initial annualized rate of three hundred and seventy-five thousand dollars ($375,000), as may be adjusted from time to time (the "***Base Salary***"), in bi-weekly installments in accordance with the Company's normal payroll cycle, less customary and legally required withholdings.

(b) Annual Bonus. In addition to Employee's other remuneration, Employee shall be eligible to receive an annual bonus (the "***Bonus***"), based on the performance of Employee and the Company. The determination of such performance and the amount of the Bonus, if any, shall be at the sole discretion of the Compensation Committee of the Board of Directors of the Company (the "***Committee***") but shall not exceed forty percent (40%) of Employee's Base Salary (the "***Target Bonus***"). In the event that Employee has earned a Bonus for a particular year, such Bonus shall be paid to Employee in the form of cash, stock options, shares of the Company's stock, or a combination thereof, at the Committee's discretion no later than sixty (60) days following the end of such year.

(c) Employee Benefits. During the term of this Agreement, Employee shall be entitled to participate in any employee benefit plans or programs of the Company that are made generally available from time to time by the Company to similarly situated employees, including, but not limited to, health insurance, a flexible spending account and 401(k) participation.

(d) Vacation and Holidays. The Employee shall be entitled each year to four (4) weeks of vacation, and to those holidays observed by the Company. Vacation shall be taken by the Employee at such time or times as are mutually convenient to the Employee and the Company.

(e) Reimbursement of Expenses. The Company shall reimburse the Employee for all reasonable expenses incurred by Employee in connection with Employee's employment hereunder, *provided*, *however*, that such expenses were incurred in conformance with the policies of the Company, as established from time to time, and that Employee submits detailed vouchers and other records reasonably required by the Company in support of the amount and nature of such expense.

(f) Taxes and Withholding. All compensation payable and other benefits provided under this Agreement shall be subject to customary and legally required withholding for income, F.I.C.A., and other employment taxes.

4. Termination of Employment.

(a) Death of Employee. If Employee dies during the term of this Agreement, this Agreement shall terminate immediately and the Company shall pay to Employee's then-current spouse, if such spouse survives Employee, or if not, to Employee's estate, the balance of Employee's accrued and unpaid salary, unreimbursed expenses and unused accrued vacation time through the termination date.

(b) Disability of Employee. If Employee is unable to perform Employee's full-time regular duties by reason of incapacity, either physical or mental, for a period of twelve (12) consecutive weeks or ninety (90) days within any twelve (12)-month period, the Company shall have the right to terminate Employee's employment upon written notice to the Employee. If the Company decides to terminate Employee's employment under this Section 4(b), the Company shall pay to Employee only the balance of Employee's accrued and unpaid salary, unreimbursed expenses and unused, accrued vacation time through the termination date. If the Company decides not to terminate Employee's employment as allowed under this Section, the Company shall have the option of reducing the salary thereafter payable to Employee by the amount of payment the Employee receives pursuant to any disability insurance policy or program.

(c) Termination for Cause. If Employee's employment is terminated by the Company for "Cause," as defined below, the Company shall pay Employee only the balance of Employee's accrued, but unpaid salary, unreimbursed expenses and unused, accrued vacation time through the termination date. The Company shall have the right to set off any amounts due to Employee by any amounts owed by Employee to the Company at the time Employee's employment terminates, and Employee hereby authorizes the Company to make this setoff. Employee's employment may be terminated for "Cause" at any time upon delivery of written notice to Employee. "***Cause***" means the occurrence of any of the following events: (i) any gross failure on the part of Employee (other than by reason of disability as provided in Section 4(b)) to faithfully and professionally carry out Employee's duties or to comply with any other material provision of this Agreement, which failure continues after written notice thereof by the Company, *provided* that the Company shall not be required to provide such notice in the event that such failure (A) is not susceptible to remedy or (B) relates to the same type of acts or omissions as to which such notice has been given on a prior occasion; (ii) Employee's dishonesty

(which shall include, without limitation, any misuse or misappropriation of the Company's assets), or other willful misconduct (including, without limitation, any conduct on the part of Employee intended to or likely to injure the business of the Company); (iii) Employee's conviction for any felony or for any other crime involving moral turpitude, whether or not relating to Employee's employment; (iv) in accordance with applicable federal, state or local laws, Employee's insobriety or use of illegal drugs, chemicals or controlled substances either (A) in the course of performing Employee's duties and responsibilities under this Agreement, or (B) otherwise affecting the ability of Employee to perform the same; (v) Employee's failure to comply with a lawful written direction of the Company; or (vi) any wanton and willful dereliction of duties by Employee. The existence of any of the foregoing events or conditions shall be determined by the Company in the exercise of its reasonable judgment.

(d) Termination by the Company without Cause or by Employee for Good Reason. If Employee's employment by the Company ceases due to a termination by the Company without Cause (as defined above) or a resignation by Employee for Good Reason (as defined below), the Company shall:

(i) pay to Employee all accrued and unpaid Base Salary through the date of such cessation of employment at the time such Base Salary would otherwise be paid according to the Company's usual payroll practices;

(ii) to the extent then unpaid, pay to Employee the annual Bonus (if any) with respect to the fiscal year ended immediately prior to the cessation of Employee's employment, which such Bonus shall be paid at the time such Bonus would have otherwise been paid absent Employee's cessation of employment;

(iii) pay to Employee, subject to Employee's delivery to the Company of a waiver and release of claims agreement in a form acceptable to the Company (the "***Release***") that becomes effective and irrevocable in accordance with Section 17(d) (the "***Release Requirement***") and Employee's continued compliance with the restrictive covenants in Sections 5, 6 and 7 in this Agreement,

(A) in the event Employee's employment by the Company ceases due to a termination by the Company without Cause or by Employee for Good Reason other than during the Change in Control Protection Period (as defined below), monthly severance payments equal to one-twelfth of the sum of (x) Employee's then current Base Salary, and (y) an amount equal to the Target Bonus for the fiscal year during which Employee's employment by the Company ceases, which severance payments shall be paid for the duration of the Severance Period (as defined below) in accordance with the Company's usual payroll practices; or

(B) in the event Employee's employment by the Company ceases due to a termination by the Company without Cause or by Employee for Good Reason during the Change in Control Protection Period, a severance payment amount equal to the sum of (x) the Employee's then current Base Salary plus (y) an amount equal to the Target Bonus for the fiscal year during which Employee's employment by the Company ceases, in a lump sum payment less all applicable withholding taxes, within seventy-five (75) days following the later of the date of his termination of employment or the Change in Control;

(iv) subject to the Release Requirement and Employee's continued compliance with the restrictive covenants in Sections 5, 6 and 7 in this Agreement, cause any outstanding unvested options

to purchase shares of stock of the Company previously awarded to Employee to become fully vested as of the date of his termination of employment pursuant to this Section 4(d); and

(v) subject to the Release Requirement and Employee's continued compliance with the restrictive covenants in Sections 5, 6 and 7 in this Agreement, if Employee validly elects to receive continuation coverage under the Company's group health plan pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985 ("***COBRA***"), reimburse Employee for a portion of the applicable premium payable for such COBRA continuation coverage for the duration of the Severance Period in an amount equal to the employer's portion of such premiums at the rate in effect on Employee's termination date; *provided*, *however*, that if the Company determines that it cannot continue to provide Employee with such benefit (either pursuant to the terms of the applicable group health plan, as a result of applicable law, or otherwise), the Company shall make supplemental monthly severance payments to Employee in an amount equal to the monthly amount the Company would have otherwise reimbursed to Employee for his participation in such group health plan for the duration of the Severance Period.

For purposes of this Agreement:

"***Change in Control***" has the same meaning ascribed to it in the Onconova Therapeutics, Inc. 2018 Equity Compensation Plan.

"***Change in Control Protection Period***" shall mean the twelve (12)-month period following a Change in Control.

"***Good Reason***" shall mean: (i) the breach by the Company of any material provision of this Agreement (*provided*, *however*, that a reduction in Employee's Base Salary by less than twenty percent (20%) in and for any twelve month period shall not be a material breach by the Company if it is made in connection with a reduction in base salaries imposed on a majority of other senior executives of the Company and Employee's Base Salary is not reduced by a percentage that is greater than the percentage by which the base salary of a majority of other senior executives of the Company is reduced in and for that same twelve month period); (ii) a relocation of Employee's principal business location to a location more than fifty (50) miles from Employee's then-current business location; or (iii) at any time there occurs any of the following which results in a material adverse change in Employee's duties, position, or compensation without the express prior written consent of Employee: (1) the sale or transfer, whether in one transaction or in a series of transactions, of substantially all of the assets of the Company; (2) the merger or consolidation of the Company with or into any other person or entity under circumstances where the Company is not the surviving entity in such merger or where persons having control of the Company immediately prior to the transaction are not in control of the Company immediately after the transaction. None of the foregoing events or conditions will constitute Good Reason unless Employee provides the Company with written objection to the event or condition within thirty (30) days following the occurrence thereof, the Company does not cure the event or condition within thirty (30) days of receiving that written objection, and Employee resigns Employee's employment within thirty (30) days following the expiration of that cure period.

"***Severance Period***" shall mean the nine (9)-month period immediately following the date Employee's employment with the Company ceases due to a termination by the Company without Cause or by Employee for Good Reason; *provided*, *however*, that in the event Employee's employment by the Company ceases due to a termination by the Company without Cause or by Employee for Good Reason during the Change in Control Protection Period, the Severance Period will equal twelve (12) months.

(e) Code Section 280G. It is the intention of Employee and of the Company that no payments by the Company to or for the benefit of Employee under this Agreement or any other agreement or plan, if any, pursuant to which Employee is entitled to receive payments or benefits shall be nondeductible to the Company by reason of the operation of Section 280G of the Internal Revenue Code of 1986, as amended, and the regulations and guidance promulgated thereunder (the "***Code***") relating to parachute payments or any like statutory or regulatory provision. Accordingly, and notwithstanding any other provision of this Agreement or any such agreement or plan, if by reason of the operation of said Section 280G of the Code or any like statutory or regulatory provision, any such payments exceed the amount which can be deducted by the Company, such payments shall be reduced to the maximum amount which can be deducted by the Company. The Company shall make all reasonable efforts to avoid rendering such payments or benefits nondeductible. To the extent that payments exceeding such maximum deductible amount have been made to or for the benefit of Employee, such excess payments shall be refunded to the Company with interest thereon at the applicable Federal rate determined under Section 1274(d) of the Code, compounded annually, or at such other rate as may be required so that no such payments shall be nondeductible to the Company by reason of the operation of Section 280G of the Code or any like statutory or regulatory provision. To the extent any such reduction in payments is necessary, any amounts subject to Code Section 409A will be reduced first, then to the extent any remaining reduction is necessary such further reduction shall occur to the payments or benefits in the order that results in the greatest economic present value of all payments actually made to Employee.

(f) Voluntary Resignation. Employee may voluntarily resign from employment with the Company at any time. In the event Employee voluntarily resigns from employment with the Company, Employee shall provide the Company with thirty (30) days' notice of Employee's intent to resign. The Company shall pay Employee only the balance of Employee's accrued, but unpaid salary, unreimbursed expenses and any unused, accrued vacation time through Employee's last day of work.

(g) Deemed Resignation. Upon termination of Employee's employment for any reason, Employee shall be deemed to have resigned from all offices and board memberships, if any, then held with the Company or any of its affiliates, and, at the Company's request, Employee shall execute such documents as are necessary or desirable to effectuate such resignations.

(h) No Other Severance. Upon termination of Employee's employment for any reason, the Company will have no severance obligations under this Agreement other than as provided in this Section 4, which shall supersede any prior or contemporaneous oral or written severance plan, policy, program, or other arrangement maintained by the Company to the extent such benefits would provide for duplication of benefits to Employee.

5. Non-Competition.

(a) For purposes of this Agreement, "***Competitor***" shall mean any person, company, or entity whose primary business at the time is, or whose then-current business plan contemplates engaging in activities which may be, competitive with products and services that were or were being designed, conceived, marketed, sold, distributed and/or developed by the Company during Employee's employment by the Company or at the time of termination of Employee's employment by the Company.

(b) Employee agrees that so long as Employee is employed by the Company, and for a period of twelve (12) months after the termination of his employment, Employee will not, directly or indirectly, whether for compensation or not, own, manage, operate, join, control, work for, or

participate in, or be connected as a stockholder, officer, employee, partner, creditor, guarantor, advisor or otherwise, with a Competitor. The foregoing shall not be construed, however, as preventing Employee from investing his assets in such form or manner as will not require services on the part of Employee in the operations of the businesses in which such investments are made, *provided* that any such business is publicly owned and the interest of Employee therein is solely that of an investor owning not more than five percent (5%) of the outstanding equity securities of any such business. Should Employee breach the provisions of this Paragraph, the Company shall, in addition to any equitable or legal relief to which it is otherwise entitled, be entitled to cease all payments and benefits under the terms of this Agreement and shall be entitled to pursue all remedies it might have including, but not limited to, those contained in this Agreement.

(c) For the period of twelve (12) months after the termination of this Agreement for any reason whatsoever, Employee shall not hire, retain or engage as a director, officer, employee, agent or in any other capacity any person or persons who are employed by the Company or who were at any time (within a period of six (6) months immediately prior to the date of Employee's termination) employed by the Company or otherwise interfere with the relationship between such persons and the Company.

(d) If the period of time or area herein specified should be adjudged unreasonable in any court proceeding, then the period of time shall be reduced by such number of months or the area shall be reduced by elimination of such portion thereof as deemed unreasonable, so that this covenant may be enforced during such period of time and in such area as is adjudged to be reasonable.

6. Confidential Information.

(a) At all times during Employee's employment and thereafter, Employee will hold in strictest confidence and will not disclose, use, lecture upon or publish any of the Company's Proprietary Information (defined below), except as such use may be required in connection with Employee's work for the Company, or unless an officer of the Company expressly authorizes such disclosure in writing. Employee will obtain Company's written approval before publishing or submitting for publication any material (written, verbal, or otherwise) that relates to Employee's work for Company and/or incorporates any Proprietary Information. Employee hereby assigns to the Company any rights Employee may have or acquire in such Proprietary Information and recognizes that all Proprietary Information shall be the sole property of the Company and its assigns.

(b) The term "***Proprietary Information***" shall mean any and all confidential and/or proprietary knowledge, data or information of the Company, whether acquired by Employee while employed by the Company, during Employee's prior service as a consultant to the Company, or otherwise. By way of illustration but not limitation, "Proprietary Information" includes but is not limited to (i) trade secrets, inventions, mask works, ideas, methods, processes, formulas, chemical structures and methods for chemical synthesis, structure-activity relationships, assay methodologies, characteristics, equipment and equipment designs, results, formulations and biological, pharmacological, toxicological and clinical data, physical, chemical or biological materials, source and object codes, data, programs, other works of authorship, know-how, improvements, discoveries, developments, compilations, shop practices, supplier lists, designs and techniques (hereinafter collectively referred to as "***Inventions***"); and (ii) information regarding plans for research, development, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers; and (iii) information regarding the skills and compensation of other employees of the Company. Notwithstanding the foregoing, it is understood that, at all times, Employee is free to use information which is generally known in the trade or industry, which is not

gained as a result of a breach of this Agreement, and which is acquired as a result of Employee's own skill, knowledge, know-how and experience.

(c) Employee understands, in addition, that the Company has received and in the future will receive from third parties confidential or proprietary information ("***Third Party Information***") subject to a duty on the Company's part to maintain the confidentiality of such information and to use it only for certain limited purposes. During the period of Employee's employment and thereafter, Employee will hold Third Party Information in the strictest confidence and will not disclose to anyone (other than Company personnel who need to know such information in connection with their work for the Company) or use, except in connection with Employee's work for the Company, Third Party Information unless expressly authorized by an officer of the Company in writing.

(d) During Employee's employment by the Company, Employee will not improperly use or disclose any confidential information or trade secrets, if any, of any of his former employers or any other person to whom Employee has an obligation of confidentiality, and Employee will not bring onto the premises of the Company any unpublished documents or any property belonging to any former employer or any other person to whom Employee has an obligation of confidentiality, unless such action is consented to in writing by all persons to whom the relevant obligation of confidentiality is owed. Employee shall not work on Company projects on the grounds of, or using the equipment of, any third party, unless such work is agreed to by the Company in writing.

(e) Upon termination of his employment, Employee shall return to the Company all Proprietary Information in any tangible form in Employee's possession, including copies thereof.

7. Company Right to Inventions.

(a) Inventions, if any, patented or unpatented, which Employee made prior to the commencement of Employee's employment with the Company are excluded from the scope of this Agreement. To preclude any possible uncertainty, Employee has provided on Appendix A (Previous Inventions) attached hereto a complete list of all Inventions that Employee has, alone or jointly with others, conceived, developed or reduced to practice or caused to be conceived, developed or reduced to practice prior to the commencement of Employee's employment with the Company, that Employee considers to be Employee's property or the property of third parties, and that Employee wishes to have excluded from the scope of this Agreement (collectively referred to as "***Prior Inventions***"). If disclosure of any such Prior Invention would cause Employee to violate any prior confidentiality agreement, Employee understands that Employee shall not list such Prior Inventions in Appendix A but shall only disclose a cursory name for each such invention (bearing in mind that where necessary the naming shall not be so specific as to violate the confidentiality obligation), a listing of the party(ies) to whom the invention belongs, and the fact that full disclosure as to such invention has not been made for that reason. Space is provided on Appendix A for this purpose. If, in the course of Employee's employment with the Company, Employee incorporates a Prior Invention into a Company product, process or machine, the Company is hereby granted and shall have, to the extent of Employee's right to make such grant, a nonexclusive, royalty-free, irrevocable, perpetual, worldwide license (with rights to sublicense through multiple tiers of sublicensees) to make, have made, modify, use, import, sell and offer to sell such Prior Invention. Notwithstanding the foregoing, Employee agrees that Employee will not incorporate, or permit to be incorporated, Prior Inventions in any Company Inventions without the Company's prior written consent.

(b) Subject to Section 7(d), Employee hereby assigns and agrees to assign in the future (when any such Inventions are first reduced to practice or a description thereof first fixed in a tangible

medium, as applicable) to the Company all of Employee's right, title and interest in and to any and all Inventions, whether or not patentable or registerable under patent, intellectual property, copyright or similar statutes, made or conceived or reduced to practice or learned by Employee, either alone or jointly with others, during the period of Employee's employment with the Company. Inventions assigned to the Company, or to a third party as directed by the Company pursuant to this Section 7(b), are hereinafter referred to as "***Company Inventions***."

(c) During the period of Employee's employment, Employee will promptly disclose to the Company fully and in writing all Inventions authored, conceived or reduced to practice by Employee, either alone or jointly with others. In addition, Employee will promptly disclose to the Company all patent applications filed by Employee or on Employee's behalf during Employee's employment and within one (1) year after termination of employment. At the time of each such disclosure, Employee will advise the Company in writing of any Inventions that Employee believes qualify for exclusion from Employee's obligation to assign hereunder; and Employee will at that time provide to the Company in writing all evidence necessary to substantiate that belief.

(d) As directed by the Company, Employee agrees to assign all Employee's right, title and interest in and to any particular Company Invention to a third party, including without limitation the United States.

(e) Employee acknowledges that all original works of authorship which are made by Employee (solely or jointly with others) within the scope of Employee's employment and which are protectable by copyright are "works made for hire," pursuant to United States Copyright Act (17 U.S.C. § 101).

(f) Employee will assist the Company in every proper way to obtain, and from time to time enforce, United States and foreign trade secret, patent, copyright, mask work and other intellectual property rights ("***Proprietary Rights***") relating to Company Inventions in any and all countries. To that end, Employee will execute, verify and deliver such documents and perform such other acts (including appearances as a witness) as the Company may reasonably request for use in applying for, obtaining, perfecting, evidencing, sustaining and enforcing such Proprietary Rights and the assignment thereof. In addition, Employee will execute, verify and deliver assignments of such Proprietary Rights to the Company, its successor in interest, or its designee. Employee's obligation to assist the Company with respect to Proprietary Rights relating to such Company Inventions in any and all countries shall continue beyond the termination of Employee's employment.

In the event the Company is unable for any reason, after reasonable effort, to secure Employee's signature on any document needed in connection with the actions specified in this Section 7(f), Employee hereby irrevocably designates and appoints the Company and its duly authorized officers and agents as Employee's agent and attorney-in-fact, which appointment is coupled with an interest, to act for and on Employee's behalf to execute, verify and file any such documents and to do all other lawfully permitted acts to further the purposes of the preceding paragraph with the same legal force and effect as if executed by Employee.

(g) Employee agrees to keep and maintain adequate and current records (in the form of notes, sketches, drawings and in any other form that may be required by the Company) of all Proprietary Information developed by Employee and all Inventions made by Employee during the period of Employee's employment at the Company, which records shall be available to and remain the sole property of the Company at all times.

(h) Employee represents that Employee's performance of all the terms of this Agreement and as an employee of the Company does not and will not breach any agreement to keep in confidence information acquired by Employee in confidence or in trust prior to Employee's employment by the Company. Employee has not entered into, and Employee agrees that Employee will not enter into, any agreement either written or oral in conflict herewith.

8. Remedies. Because Employee's services are personal and unique and because Employee may have access to and become acquainted with the Proprietary Information of the Company, the Company shall have the right to enforce this Agreement and any of its provisions by injunction, or other equitable relief, without bond (if allowed by applicable law), and without prejudice to any other rights and remedies that the Company may have for a breach of this Agreement. In the event that Employee performs services for other entities while employed by the Company or leaves the employ of the Company, Employee hereby consents to the notification of Employee's new employer of Employee's rights and obligations under this Agreement.

9. Arbitration. Any and all disputes between the parties (except actions to enforce the provisions of Sections 5, 6 or 7 of this Agreement), arising under or relating to this Agreement or any other dispute arising between the parties, including claims arising under any employment discrimination laws, shall be adjudicated and resolved exclusively through binding arbitration before the American Arbitration Association pursuant to the American Arbitration Association's then-in-effect National Rules for the Resolution of Employment Disputes (hereafter "***Rules***"), available at https://www.adr.org/sites/default/files/National%20Rules%20for%20the%20Resolution%20of%20Employment%20Disputes%20Jan%2001%2C%202004 as of the date hereof. The initiation and conduct of any arbitration hereunder shall be in accordance with the Rules and each side shall bear its own costs and counsel fees in such arbitration. Any arbitration hereunder shall be conducted in Philadelphia, Pennsylvania, and any arbitration award shall be final and binding on the Parties. The arbitrator shall have no authority to depart from, modify, or add to the written terms of this Agreement. The arbitration provisions of this Section 9 shall be interpreted according to, and governed by, the Federal Arbitration Act, 9 U.S.C. § 1 *et seq.*, and any action pursuant to such Act to enforce any rights hereunder shall be brought exclusively in the United States District Court for the Eastern District of Pennsylvania. The parties consent to the jurisdiction of (and the laying of venue in) such court.

10. General Indemnification. The Company shall indemnify the Employee against any and all demands, claims, damages and suits, actions and legal proceedings brought against the Employee, in his individual capacity or in his official capacity, as agent and/or Employee of the Company for claims arising during his employment. In addition, the Company shall advance to the Employee reasonable attorney's fees in connection with the foregoing.

11. Severability. The terms of this Agreement and each Paragraph thereof shall be considered severable and the invalidity or unenforceability of any part thereof shall not affect the validity or enforceability of the remaining portions or provisions hereof.

12. Notices. Any notice required or permitted to be given under this Agreement shall be sufficient, if in writing and delivered by registered or certified mail or overnight delivery service to his residence in the case of Employee, or to its principal office in the case of the Company.

13. Assignment. The rights and obligations of the Company under this Agreement shall inure to the benefit of and be binding upon its successors and assigns. Neither this Agreement nor any rights or interests herein or created hereby may be assigned or otherwise transferred voluntarily or involuntarily by Employee.

14. Waiver. The waiver by the Company or Employee of a breach of any provision of this Agreement by the other shall not operate or be construed as a waiver of any subsequent breach.

15. Applicable Law. This Agreement shall be interpreted and construed under the laws of the Commonwealth of Pennsylvania.

16. Entire Agreement; Prior Agreements. This instrument contains the entire agreement of the parties with respect to the subject matter hereof and supersedes any and all prior or contemporaneous agreements, oral or written, concerning the subject matter contained herein, including without limitation any prior agreements between the Company and Employee. It may not be changed or altered, except by an agreement in writing signed by the party against whom enforcement of any waiver, change, modification, extension or discharge is sought.

17. Code Section 409A.

(a) Notwithstanding anything herein to the contrary, this Agreement is intended to be interpreted and applied so that the payments and benefits set forth herein shall either be exempt from the requirements of Code Section 409A or shall comply with the requirements of Code Section 409A and, accordingly, to the maximum extent permitted, this Agreement shall be interpreted to be exempt from or in compliance with Code Section 409A. The parties hereto agree that the payments and benefits set forth herein comply with or are exempt from the requirements of Code Section 409A and agree not to take any position, and to cause their affiliates, successors and assigns not to take any position, inconsistent with such interpretation for any reporting purposes, whether internal or external.

(b) Notwithstanding anything in this Agreement or elsewhere to the contrary, a termination of employment shall not be deemed to have occurred for purposes of any provision of this Agreement providing for the payment of any amounts or benefits that constitute "non-qualified deferred compensation" within the meaning of Code Section 409A upon or following a termination of the Employee's employment unless such termination is also a "separation from service" within the meaning of Code Section 409A and, for purposes of any such provision of this Agreement, references to a "termination," "termination of employment" or like terms shall mean "separation from service" and the date of such separation from service shall be treated as the date of termination for purposes of any such payment or benefits. Notwithstanding any other provision of this Agreement to the contrary, if the Employee is a "specified employee" within the meaning of Code Section 409A and the regulations issued thereunder, and a payment or benefit provided for in this Agreement would be subject to additional tax under Code Section 409A if such payment or benefit is paid within six (6) months after the Employee's "separation from service" (within the meaning of Code Section 409A), then such payment or benefit required under this Agreement shall not be paid (or commence) during the six-month period immediately following the Employee's separation from service except as provided in the immediately following sentence. In such an event, any payments or benefits that would otherwise have been made or provided during such six (6)-month period and which would have incurred such additional tax under Code Section 409A shall instead be paid to the Employee in a lump-sum cash payment on the earlier of (i) the first regular payroll date of the seventh (7^{th}) month following the Employee's separation from service or (ii) the tenth (10^{th}) business day following the Employee's death.

(c) It is intended that each installment of any severance payments and benefits provided under this Agreement shall be treated as a separate "payment" for purposes of Code Section 409A. Neither the Employee nor the Company shall have the right to accelerate or defer the delivery of any such payments or benefits except to the extent specifically permitted or required by Code Section 409A.

All reimbursements and in-kind benefits provided under this Agreement shall be made or provided in accordance with the requirements of Code Section 409A to the extent that such reimbursements or in-kind benefits are subject to Code Section 409A, including, where applicable, the requirements that (i) the amount of expenses eligible for reimbursement during a calendar year may not affect the expenses eligible for reimbursement in any other calendar year, (ii) the reimbursement of an eligible expense shall be made promptly and in all cases on or before the last day of the calendar year following the year in which the expense is incurred and (iii) the right to reimbursement is not subject to set off or liquidation or exchange for any other benefit.

(d) Notwithstanding anything contained herein to the contrary in this Agreement, to the extent that any payments due under this Agreement as a result of Employee's termination of employment are subject to Employee's execution and delivery of the Release, (i) if Employee fails to execute the Release on or prior to the Release Expiration Date (as defined below) or timely revokes Employee's acceptance of the Release thereafter, Employee shall not be entitled to any payments or benefits otherwise conditioned on the Release, and (ii) in any case where Employee's date of termination and the last day the Release may be considered or, if applicable, revoked, fall in two separate taxable years, any payments required to be made to Employee that are conditioned on the Release and are treated as nonqualified deferred compensation for purposes of Code Section 409A shall be made in the later taxable year. For purposes of this Section 17(d), "***Release Expiration Date***" shall mean (x) if Employee is under 40 years old as of the date of termination, the date that is seven (7) days following the date upon which the Company timely delivers the Release to Employee, and (y) if Employee is 40 years or older as of the date of termination, the date that is twenty-one (21) days following the date upon which the Company timely delivers the Release to Employee, or, in the event that Employee's termination of employment is "in connection with an exit incentive or other employment termination program" (as such phrase is defined in the Age Discrimination in Employment Act of 1967), the date that is forty-five (45) days following such delivery date. To the extent that any payments of nonqualified deferred compensation (within the meaning of Code Section 409A) due under this Agreement as a result of Employee's termination of employment are delayed pursuant to this Section 17(d), such amounts shall be paid in a lump sum on the first payroll date following the date that Employee executes and does not revoke the Release (and the applicable revocation period has expired) or, in the case of any payments subject to Section 17(d)(ii), on the first payroll period to occur in the subsequent taxable year, if later.

18. Whistleblower Protections and Trade Secrets. Notwithstanding anything to the contrary contained herein, nothing in this Agreement prohibits Employee from reporting possible violations of federal law or regulation to any United States governmental agency or entity in accordance with the provisions of and rules promulgated under Section 21F of the Securities Exchange Act of 1934 or Section 806 of the Sarbanes-Oxley Act of 2002, or any other whistleblower protection provisions of state or federal law or regulation (including the right to receive an award for information provided to any such government agencies). Furthermore, in accordance with 18 U.S.C. § 1833, notwithstanding anything to the contrary in this Agreement: (i) Employee shall not be in breach of this Agreement, and shall not be held criminally or civilly liable under any federal or state trade secret law (x) for the disclosure of a trade secret that is made in confidence to a federal, state, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of law, or (y) for the disclosure of a trade secret that is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal; and (ii) if Employee files a lawsuit for retaliation by the Company for reporting a suspected violation of law, Employee may disclose the trade secret to Employee's attorney, and may use the trade secret information in the court proceeding, if Employee

files any document containing the trade secret under seal, and does not disclose the trade secret, except pursuant to court order.

19. Counterparts. This Amendment may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original and all of which shall constitute the same instrument. Any and all counterparts may be executed by facsimile.

[*signature page follows*]

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

ONCONOVA THERAPEUTICS, INC.
By: /s/ Steven Fruchtman
Name: Steven M. Fruchtman
Title: President and CEO
EMPLOYEE:
By: /s/ Abraham Oler
Abraham N. Oler

APPENDIX A

TO: [•]
FROM: Abraham N. Oler
DATE:
SUBJECT: PREVIOUS INVENTIONS

1. Except as listed in Section 2 below, the following is a complete list of all inventions or improvements relevant to the subject matter of my employment by Onconova Therapeutics, Inc. (the "***Company***") that have been made or conceived or first reduced to practice by me alone or jointly with others prior to my engagement by the Company:

[ ] No inventions or improvements.
[ ] See below:

[ ] Additional sheet(s) attached.

Due to a prior confidentiality agreement, I cannot complete the disclosure under Section 1 above with respect to inventions or improvements generally listed below, the proprietary rights and duty of confidentiality with respect to which I owe to the following party(ies):

INVENTION OR IMPROVEMENT	PARTY(IES)	RELATIONSHIP
1.		
2.		
3.		
4.		
5.		
6.		

[ ] Additional sheet(s) attached.

Exhibit 31.1

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

I, Steven Fruchtman, certify that:

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

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

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

4. The registrant's other certifying officer(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.

Dated: August 16, 2021

/s/ Steven M. Fruchtman, M.D.
Steven M. Fruchtman, M.D.
President and Chief Executive Officer
(*Principal Executive and Principal Operating Officer*)

Exhibit 31.2

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

I, Mark Guerin, certify that:

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

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

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

4. The registrant's other certifying officer(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.

Dated: August 16, 2021

/s/ Mark Guerin
Mark Guerin
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

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

In connection with the Quarterly Report of Onconova Therapeutics, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2021, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Steven Fruchtman, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

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

Dated: August 16, 2021

/s/ Steven M. Fruchtman, M.D.
Steven M. Fruchtman, M.D.
President and Chief Executive Officer
(*Principal Executive and Principal Operating Officer*)

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. § 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.

Exhibit 32.2

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

In connection with the Quarterly Report of Onconova Therapeutics, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2021, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Mark Guerin, 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. That information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: August 16, 2021

/s/ Mark Guerin
Mark Guerin
Chief Financial Officer
(Principal Financial Officer)

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. § 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.