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

FORM 10-Q

(Mark One)

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

For the Quarterly Period Ended March 31, 2020

or

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

For the Transition Period from _____ to _____

Commission file number: 001-36019

TONIX PHARMACEUTICALS HOLDING CORP.

(Exact name of registrant as specified in its charter)

Nevada	**26-1434750**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
509 Madison Avenue, Suite 1608 **New York, New York**	**10022**
(Address of principal executive offices)	(zip code)

(212) 980-9155
(Registrant's telephone number, including area code)

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☐

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

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

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	TNXP	The NASDAQ Global Market

As of May 11, 2020, there were 52,302,475 shares of registrant's common stock outstanding.

TONIX PHARMACEUTICALS HOLDING CORP.

INDEX

PART I – FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

TONIX PHARMACEUTICALS HOLDING CORP.
CONDENSED CONSOLIDATED BALANCE SHEETS
(In Thousands, Except Par Value and Share Amounts)

	March 31, 2020 (unaudited)	December 31, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 30,665	$ 11,249
Prepaid expenses and other	2,731	2,699
Total current assets	33,396	13,948
Property and equipment, net	28	34
Right of use assets, net	281	356
Security deposit	7	—
Restricted cash	100	100
Intangible asset	120	120
Total assets	$ 33,932	$ 14,558
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,408	$ 3,070
Accrued expenses and other current liabilities	996	1,713
Lease liability, current	256	352
Total current liabilities	2,660	5,135
Lease liability, net of current	25	6
Total liabilities	2,685	5,141
Commitments (See Note 11)		
Stockholders' equity:		
Preferred stock, 5,000,000 shares authorized Series B Convertible Preferred stock, $0.001 par value; 5,313 shares designated; 0 issued and outstanding as of March 31, 2020, Series A Convertible Preferred stock, $0.001 par value; 7,938 shares designated; 0 issued and outstanding as of December 31, 2019	—	—
Common stock, $0.001 par value; 150,000,000 shares authorized; 49,353,134 and 8,531,504 shares issued and outstanding as of March 31, 2020 and December 31, 2019, respectively, and 1,578 shares to be issued as of December 31, 2019	49	9
Additional paid in capital	255,601	226,524
Accumulated deficit	(224,343)	(217,070)
Accumulated other comprehensive loss	(60)	(46)
Total stockholders' equity	31,247	9,417
Total liabilities and stockholders' equity	$ 33,932	$ 14,558

See the accompanying notes to the condensed consolidated financial statements

TONIX PHARMACEUTICALS HOLDING CORP.
CONDENSED CONSOLIDATE D STATEMENTS OF OPERATIONS
(In Thousands, Except Share and Per Share Amounts)
(unaudited)

	Three Months Ended March 31,	
	2020	**2019**
COSTS AND EXPENSES:		
Research and development	$ 4,676	$ 3,896
General and administrative	2,621	2,401
	7,297	6,297
Operating Loss	(7,297)	(6,297)
Interest income, net	24	64
Net loss	(7,273)	(6,233)
Warrant deemed dividend	451	—
Preferred stock deemed dividend	1,260	—
Net loss available to common stockholders	$ (8,984)	$ (6,233)
Net loss per common share, basic and diluted	$ (0.37)	$ (12.76)
Weighted average common shares outstanding, basic and diluted	24,028,970	488,315

See the accompanying notes to the condensed consolidated financial statements

TONIX PHARMACEUTICALS HOLDING CORP.
CONDENSED CONSOLIDA TED STATEMENTS OF COMPREHENSIVE LOSS
(In Thousands)
(unaudited)

	Three Months Ended March 31,	
	2020	**2019**
Net loss	$ (7,273)	$ (6,233)
Other comprehensive (loss) gain:		
Foreign currency translation (loss) gain	(14)	2
Total other comprehensive (loss) gain	(14)	2
Comprehensive loss	$ (7,287)	$ (6,231)

See the accompanying notes to the condensed consolidated financial statements

TONIX PHARMACEUTICALS HOLDING CORP.
CONDENSED CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY
THREE MONTHS ENDED MARCH 31, 2020 AND 2019
(In Thousands, Except Share and Per Share Amounts)
(unaudited)

	Series B Convertible Preferred stock		Common stock		Additional Paid in Capital	Accumulated Other Comprehensive Gain (loss)	Accumulated Deficit	Total
	Shares	Amount	Shares	Amount				
Balance, December 31, 2019	—	$ —	8,531,504	$ 9	$ 226,524	$ (46)	$ (217,070)	$ 9,417
Issuance of common stock in exchange for exercise of warrants in February and March 2020 ($0.57 per share)	—	—	13,111,999	13	7,461	—	—	7,474
Deemed dividend in connection with repricing of November 2019 warrants	—	—	—	—	451	—	—	451
Warrant deemed dividend	—	—	—	—	(451)	—	—	(451)
Issuance of Series B Convertible preferred stock and common stock warrants in February 2020 ($1,000.00 per share, net of transactional expenses of $711)	5,313	—	—	—	4,602	—	—	4,602
Beneficial conversion feature in connection with issuance of Series B Convertible preferred stock	—	—	—	—	1,260	—	—	1,260
Preferred stock deemed dividend	—	—	—	—	(1,260)	—	—	(1,260)
Issuance of common stock and common stock warrants in February 2020 ($0.57 per share, net of transactional expenses of $292)	—	—	3,837,000	4	1,891	—	—	1,895
Issuance of common stock upon conversion of Series B Convertible preferred stock	(5,313)	—	9,321,053	9	(9)	—	—	—
Issuance of common stock in March 2020 ($1.10 per share, net of transactional expenses of $1,221)	—	—	14,550,000	14	14,770	—	—	14,784
Employee stock purchase plan	—	—	1,578	—	2	—	—	2
Stock-based compensation	—	—	—	—	360	—	—	360
Foreign currency transaction gain	—	—	—	—	—	(14)	—	(14)
Net loss	—	—	—	—	—	—	(7,273)	(7,273)
Balance, March 31, 2020	—	$ —	49,353,134	$ 49	$ 255,601	$ (60)	$ (224,343)	$ 31,247

See the accompanying notes to the condensed consolidated financial statements

TONIX PHARMACEUTICALS HOLDING CORP.
CONDENSED CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY
THREE MONTHS ENDED MARCH 31, 2020 AND 2019
(In Thousands, Except Share and Per Share Amounts)
(unaudited)

	Series A Convertible Preferred stock		Common stock		Additional Paid in Capital	Accumulated Other Comprehensive Gain (loss)	Accumulated Deficit	Total
	Shares	Amount	Shares	Amount				
Balance, December 31, 2018	9,856	$ —	328,689	$ —	$ 212,157	$ (41)	$ (188,452)	$ 23,664
Issuance of common stock upon conversion of Series A Convertible preferred stock	(9,856)	—	281,610	1	(1)	—	—	—
Issuance of common stock in exchange for exercise of warrants in March 2019 ($35.00 per share)	—	—	2,000	—	70	—	—	70
Employee stock purchase plan	—	—	177	—	3	—	—	3
Stock-based compensation	—	—	—	—	305	—	—	305
Foreign currency transaction gain	—	—	—	—	—	2	—	2
Net loss	—	—	—	—	—	—	(6,233)	(6,233)
Balance, March 31, 2019	—	$ —	612,476	$ 1	$ 212,534	$ (39)	$ (194,685)	$ 17,811

See the accompanying notes to the condensed consolidated financial statements

TONIX PHARMACEUTICALS HOLDING CORP.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands)
(unaudited)

	Three Months Ended March 31,	
	2020	**2019**
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (7,273)	$ (6,233)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	6	9
Stock-based compensation	360	305
Changes in operating assets and liabilities:		
Prepaid expenses and other	(39)	(1,700)
Accounts payable	(1,662)	(270)
Lease liabilities and ROU asset, net	(2)	—
Accrued expenses and other current liabilities	(716)	(753)
Net cash used in operating activities	(9,326)	(8,642)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchase of furniture and fixtures	—	(7)
Net cash used by investing activities	—	(7)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from the exercise of warrants	7,474	70
Proceeds, net of expenses of $711 and $0, from the sale of preferred stock	4,602	—
Proceeds, net of expenses of $1,513 and $0, from sale of common stock and warrants	16,681	3
Net cash provided by financing activities	28,757	73
Effect of currency rate change on cash	(15)	(10)
Net decrease in cash, cash equivalents and restricted cash	19,416	(8,586)
Cash, cash equivalents and restricted cash beginning of the period	11,349	25,134
Cash, cash equivalents and restricted cash end of period	$ 30,765	$ 16,548
Supplemental disclosures of cash flow information:		
Non-cash financing activities:		
Series B Convertible preferred stock deemed dividend	$ 1,260	$ —
Warrants deemed dividend	$ 451	$ —

See the accompanying notes to the condensed consolidated financial statements

NOTE 1 – BUSINESS

Tonix Pharmaceuticals Holding Corp., through its wholly owned subsidiary Tonix Pharmaceuticals, Inc. ("Tonix Sub"), is a clinical-stage biopharmaceutical company focused on discovering and developing small molecules and biologics to treat pain, addiction and psychiatric conditions. All drug product candidates are still in development.

The consolidated financial statements include the accounts of Tonix Pharmaceuticals Holding Corp. and its wholly owned subsidiaries, Tonix Sub, Krele LLC, Tonix Pharmaceuticals (Canada), Inc., Tonix Medicines, Inc., Tonix Pharma Holdings Limited and Tonix Pharma Limited (collectively hereafter referred to as the "Company" or "Tonix"). All intercompany balances and transactions have been eliminated in consolidation.

Going Concern

The accompanying financial statements have been prepared on a basis which assumes that the Company will continue as a going concern and which contemplates the realization of assets and satisfaction of liabilities and commitments in the normal course of business. The Company has suffered recurring losses from operations and negative cash flows from operating activities. At March 31, 2020, the Company had working capital of approximately $30.7 million. At March 31, 2020, the Company had an accumulated deficit of approximately $224.3 million. The Company held cash and cash equivalents of approximately $30.7 million as of March 31, 2020.

The Company believes that its cash resources will be sufficient to meet its projected operating requirements through the end of 2020, but it will not have enough resources to meet its operating requirements for the one-year period from the date of filing of this Form 10-Q. These factors raise substantial doubt about the Company's ability to continue as a going concern. The Company continues to face significant challenges and uncertainties and, as a result, its available capital resources may be consumed more rapidly than currently expected due to changes it may make in its research and development spending plans. The Company has the ability to obtain additional funding through public or private financing or collaborative arrangements with strategic partners to increase the funds available to fund operations. However, the Company may not be able to raise capital with terms acceptable to the Company. Without additional funds, it may be forced to delay, scale back or eliminate some of our research and development activities, or other operations and potentially delay product development in an effort to provide sufficient funds to continue our operations. If any of these events occurs, our ability to achieve our development and commercialization goals would be adversely affected. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

In December 2019, a novel strain of Coronavirus ("COVID-19") emerged that has caused significant disruptions to the U.S. and global economy. The spread of COVID-19 has led to regional quarantines, business shutdowns, labor shortages, disruptions to supply chains, and overall economic instability. Any of these events may in the future have a material adverse effect on our business, operations and financial condition. The extent to which COVID-19 impacts our operations will depend on future developments, which are highly uncertain and cannot be predicted with confidence, including the duration of the outbreak, new information that may emerge concerning the severity of COVID-19 and the actions taken to contain COVID-19 or treat its impact, among other things.

NOTE 2 – SIGNIFICANT ACCOUNTING POLICIES

Interim financial statements

The unaudited condensed consolidated interim financial statements of the Company have been prepared in accordance with accounting principles generally accepted in the United States ("GAAP") for interim financial information and the instructions to Form 10-Q and Article 8 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by GAAP for complete financial statements. In the opinion of management, all adjustments (consisting of normal recurring accruals) considered necessary for a fair presentation have been included.

The condensed consolidated balance sheet as of December 31, 2019 contained herein has been derived from audited financial statements.

Operating results for the three months ended March 31, 2020 are not necessarily indicative of results that may be expected for the year ending December 31, 2020. These condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto for the year ended December 31, 2019 included in the Company's Annual Report on Form 10-K, filed with the Securities and Exchange Commission ("SEC") on March 24, 2020.

Risks and uncertainties

The Company's primary efforts are devoted to conducting research and development of innovative pharmaceutical and biological products to address public health challenges. The Company has experienced net losses and negative cash flows from operations since inception and expects these conditions to continue for the foreseeable future. Further, the Company does not have any commercial products available for sale and has not generated revenues, and there is no assurance that if its products are approved for sale, that the Company will be able to generate cash flow to fund operations. In addition, there can be no assurance that the Company's research and development will be successfully completed or that any product will be approved or commercially viable. Moreover, the extent to which COVID-19 impacts the Company's operations will depend on future developments, which are highly uncertain and cannot be predicted with confidence at this time.

Use of estimates

The preparation of financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, and the reported amounts of expenses during the reporting period. Actual results could differ from those estimates. Significant estimates include the useful life of fixed assets, assumptions used in the fair value of stock-based compensation and other equity instruments, and the percent of completion of research and development contracts.

Cash Equivalents and Restricted Cash

The Company considers cash equivalents to be those investments which are highly liquid, readily convertible to cash and have an original maturity of three months or less when purchased. At March 31, 2020 and December 31, 2019, cash equivalents, which consisted of money market funds, amounted to $25.4 million and $5.4 million, respectively. Restricted cash at both March 31, 2020 and December 31, 2019 of approximately $100,000 collateralizes a letter of credit issued in connection with the lease of office space in New York City (see Note 10).

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the condensed consolidated balance sheets that sum to the total of the same amounts shown in the condensed consolidated statement of cash flow:

	March 31, 2020	December 31, 2019
	(in thousands)	
Cash and cash equivalents	$ 30,665	$ 11,249
Restricted cash	100	100
Total	$ 30,765	$ 11,349

Property and equipment

Property and equipment are stated at cost, less accumulated depreciation. Depreciation is calculated using the straight-line method over the asset's estimated useful life, which is three years for computer assets, five years for furniture and all other equipment and term of lease for leasehold improvements. Expenditures for maintenance and repairs are expensed as incurred. Depreciation and amortization expense for the quarters ended March 31, 2020 and 2019 was $6,000 and $9,000, respectively. All property and equipment is located in the United States and Ireland.

Intangible assets with indefinite lives

During the year ended December 31, 2015, the Company purchased certain internet domain rights, which were determined to have an indefinite life. Identifiable intangibles with indefinite lives are not amortized but are tested for impairment annually or whenever events or changes in circumstances indicate that its carrying amount may be less than fair value. As of March 31, 2020, the Company believed that no impairment existed.

Leases

The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease right-of-use ("ROU") assets, operating lease liabilities, current and operating lease liabilities, noncurrent in the Company's condensed consolidated balance sheets. ROU assets represent the Company's right to use an underlying asset for the lease term and lease liabilities represent its obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. As the Company's leases do not provide an implicit rate, the Company uses an incremental borrowing rate based on the information available at the transition date and subsequent lease commencement dates in determining the present value of lease payments. This is the rate the Company would have to pay if borrowing on a collateralized basis over a similar term to each lease. The operating lease ROU asset excludes lease incentives. The Company's lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Lease expense for lease payments made under operating leases is recognized on a straight-line basis over the lease term.

Research and Development Costs

The Company outsources certain of its research and development efforts and expenses these costs as incurred, including the cost of manufacturing products for testing, as well as licensing fees and costs associated with planning and conducting clinical trials. The value ascribed to patents and other intellectual property acquired has been expensed as research and development costs, as such property related to particular research and development projects and had no alternative future uses.

The Company estimates its expenses resulting from its obligations under contracts with vendors, clinical research organizations and consultants and under clinical site agreements in connection with conducting clinical trials. The financial terms of these contracts are subject to negotiations, which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided under such contracts. The Company accounts for trial expenses according to the timing of various aspects of the trial. The Company determines accrual estimates taking into account discussion with applicable personnel and outside service providers as to the progress or state of consummation of trials, or the services completed.

During the course of a clinical trial, the Company adjusts its clinical expense recognition if actual results differ from its estimates. The Company makes estimates of its accrued expenses as of each balance sheet date based on the facts and circumstances known to it at that time. The Company's clinical trial accruals are dependent upon the timely and accurate reporting of contract research organizations and other third-party vendors.

Stock-based compensation

All stock-based payments to employees and to nonemployee directors for their services as directors, including grants of restricted stock units ("RSUs"), and stock options, are measured at fair value on the grant date and recognized in the condensed consolidated statements of operations as compensation or other expense over the relevant service period. In addition, for awards that vest immediately and are non-forfeitable, the measurement date is the date the award is issued.

Foreign Currency Translation

Operations of the Canadian subsidiary are conducted in local currency, which represents its functional currency. The U.S. dollar is the functional currency of the other foreign subsidiaries. Balance sheet accounts of the Canadian subsidiary were translated from foreign currency into U.S. dollars at the exchange rate in effect at the balance sheet date and income statement accounts were translated at the average rate of exchange prevailing during the period. Translation adjustments resulting from this process were included in accumulated other comprehensive loss on the consolidated balance sheets.

Comprehensive Income (Loss)

Comprehensive income (loss) is defined as the change in equity of a business during a period from transactions and other events and circumstances from non-owners sources. It includes all changes in equity during a period except those resulting from investments by owners and distributions to owners. Other comprehensive income (loss) represents foreign currency translation adjustments.

Income Taxes

Deferred income tax assets and liabilities are determined based on the estimated future tax effects of net operating loss and credit carryforwards and temporary differences between the tax basis of assets and liabilities and their respective financial reporting amounts measured at the current enacted tax rates. The Company records a valuation allowance on its deferred income tax assets if it is not more likely than not that these deferred income tax assets will be realized.

The Company recognizes a tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by taxing authorities, based on the technical merits of the position. The tax benefits recognized in the consolidated financial statements from such a position are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. As of March 31, 2020, the Company has not recorded any unrecognized tax benefits. The Company's policy is to recognize interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense.

On March 27, 2020, President Trump signed into law the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act"). The CARES Act, among other things, includes provisions relating to refundable payroll tax credits, deferment of employer side social security payments, net operating loss carryback periods, alternative minimum tax credit refunds, modifications to the net interest deduction limitations, increased limitations on qualified charitable contributions, and technical corrections to tax depreciation methods for qualified improvement property. We continue to examine the impact that the CARES Act may have on our business. Currently, we do not believe the CARES Act will have a material impact on our accounting for income taxes.

Per Share Data

Basic and diluted net loss per common share is calculated by dividing net loss, by the weighted average number of outstanding shares of common stock, adjusted to give retroactive effect to the 1-for-10 reverse stock split, which was effected on November 1, 2019 (see Note 4).

The computation of basic and diluted loss per share as of March 31, 2020 and 2019 excludes potentially dilutive securities when their inclusion would be anti-dilutive, or if their exercise prices were greater than the average market price of the common stock during the period.

All warrants issued participate on a one-for-one basis with common stock in the distribution of dividends, if and when declared by the Board of Directors, on the Company's common stock. For purposes of computing EPS, these warrants are considered to participate with common stock in earnings of the Company. Therefore, the Company calculates basic and diluted EPS using the two-class method. Under the two-class method, net income for the period is allocated between common stockholders and participating securities according to dividends declared and participation rights in undistributed earnings. No income was allocated to the warrants for the three months ended March 31, 2020, as results of operations were a loss for the period.

Potentially dilutive securities excluded from the computation of basic and diluted net loss per share, as of March 31, 2020 and 2019, are as follows:

	2020	2019
Warrants to purchase common stock	5,184,210	496,486
Options to purchase common stock	665,536	24,861
Totals	5,849,746	521,347

NOTE 3 – FAIR VALUE MEASUREMENTS

Fair value measurements affect the Company's accounting for certain of its financial assets. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date and is measured according to a hierarchy that includes:

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

Level 2: Inputs, other than quoted prices in active markets, that are observable either directly or indirectly. Level 2 assets and liabilities include debt securities with quoted market prices that are traded less frequently than exchange-traded instruments. This category includes U.S. government agency-backed debt securities and corporate-debt securities.

Level 3: Unobservable inputs in which there is little or no market data.

As of March 31, 2020, and December 31, 2019, the Company used Level 1 quoted prices in active markets to value cash equivalents of $25.4 million and $5.4 million, respectively.

NOTE 4 – STOCKHOLDERS' EQUITY

On October 31, 2019, the Company filed a Certificate of Change with the Nevada Secretary of State, which was effective November 1, 2019. Pursuant to the Certificate of Change, the Company effected a 1-for-10 reverse stock split of its issued and outstanding shares of common stock, $0.001 par value, whereby 15,717,402 outstanding shares of the Company's common stock were exchanged for 1,575,246 shares of the Company's common stock. In connection with the reverse stock split, the Company issued an additional 3,457 shares of the Company's common stock due to rounding. All per share amounts and number of shares in the condensed consolidated financial statements and related notes have been retroactively restated to reflect the reverse stock split. On January 16, 2020, the Company filed an amendment to its articles of incorporation, as amended, to increase the number of shares of common stock authorized from 15,000,000 to 150,000,000.

NOTE 5 – ASSET PURCHASE AGREEMENT WITH TRIMARAN

On August 19, 2019, the Company entered into an asset purchase agreement (the "Asset Purchase Agreement") with TRImaran Pharma, Inc. ("TRImaran") and the selling shareholders named therein (the "Selling Shareholders") pursuant to which Tonix acquired TRImaran's assets related to certain pyran-based compounds (the "Assets"). In connection with the acquisition of the Assets, Tonix entered into a First Amended and Restated Exclusive License Agreement (the "WSU License Agreement") with Wayne State University ("WSU") on August 19, 2019. As consideration for entering into the Asset Purchase Agreement, Tonix paid $100,000 to TRImaran and has assumed certain liabilities of TRImaran totaling $68,500. Upon the achievement of specified development, regulatory and sales milestones, Tonix also agreed to pay TRImaran and the Selling Shareholders, in restricted stock or cash, at Tonix's option, a total of approximately $3.4 million. Pursuant to the terms of the Asset Purchase Agreement, TRImaran and the Selling Shareholders are prohibited from disclosing confidential information related to the Assets and are restricted from engaging, for a period of three years, in the development or commercialization of any therapeutic containing any pyran-based drug compound for the treatment of post-traumatic stress disorder, attention deficit hyperactivity disorder or major depressive disorder. Also for a period of three years, if TRImaran or any Selling Shareholder engage in the research or development of any potential therapeutic compound for the treatment of any central nervous system disorder, TRImaran or such Selling Shareholder is obliged to provide notice and opportunity to Tonix to make an offer to acquire or license rights with respect to such product candidate.

Pursuant to the terms of the WSU License Agreement, WSU has granted to Tonix an exclusive license, with the right to sublicense, certain patents, technical information and material (collectively, the "Technology") related to the Assets. WSU has reserved for itself the right to practice the Technology for academic research and educational purposes. Tonix is obligated to use commercially reasonable efforts to obtain regulatory approval for one or more products utilizing the Technology ("WSU Products") and to use commercially reasonable marketing efforts throughout the term of the WSU License Agreement. The WSU License Agreement specifies developmental milestones and the period of time during which such milestones must be completed and provides for an annual maintenance fee payable to WSU. Tonix is obligated to substantially manufacture WSU Products in the United States if WSU Products will be sold in the United States.

Pursuant to the WSU License Agreement, Tonix has agreed to pay $75,000 to WSU as reimbursement of certain patent expenses, and, upon the achievement of specified development, regulatory and sales milestones, the Company also agreed to pay WSU, milestone payments totaling approximately $3.4 million. Tonix has also agreed to pay WSU single-digit royalties on net sales of WSU Products sold by Tonix or a sublicensee on a tiered basis based on net sales, and additional sublicense fees on certain consideration received from sublicensees. Royalties on each particular WSU Product are payable on a country-by-country and Product-by-Product basis until the date of expiration of the last valid claim in the last to expire of the issued patents covered by the WSU License Agreement. Royalties payable on net sales of WSU Products may be reduced by 50% of the royalties payable by Tonix to any third party for intellectual property rights which are necessary for the practice of the rights licensed to Tonix under the WSU License Agreement, provided that the royalty payable on a WSU Product may not be reduced by more than 50%. Each party also has the right to terminate the agreement for customary reasons such as material breach and bankruptcy. The WSU License Agreement contains provisions relating to termination, indemnification, confidentiality and other customary matters for an agreement of this kind.

As of March 31, 2020, no milestone payments have been accrued or paid in relation to this agreement.

NOTE 6 – LICENSE AGREEMENTS WITH COLUMBIA UNIVERSITY

On September 16, 2019, the Company entered into an exclusive License Agreement (the "Columbia License Agreement") with the Trustees of Columbia University in the City of New York ("Columbia") pursuant to which Columbia granted to Tonix an exclusive license, with the right to sublicense, certain patents and technical information (collectively, the "TFF2 Technology") related to a recombinant Trefoil Family Factor 2 (TFF2), and to develop and commercialize products thereunder (each, a "TFF2 Product"). Pursuant to the terms of the Columbia License Agreement, Columbia has reserved for itself the right to practice the TFF2 Technology for academic research and educational purposes.

The Company has paid a five-digit license fee to Columbia as consideration for entering into the Columbia License Agreement, which was recorded to non-clinical expenses in the statement of operations for the year ended December 31, 2019. The Company is obligated to use Commercially Reasonable Efforts, as defined in the Columbia License Agreement, to develop and commercialize the TFF2 Product, and to achieve specified developmental milestones.

The Company has agreed to pay Columbia single-digit royalties on net sales of (i) TFF2 Products sold by Tonix or a sublicensee and (ii) any other products that involve material or technical information related to the TFF2 Product and transferred to Tonix pursuant to the Columbia License Agreement ("Other Products") sold by Tonix or a sublicensee. Royalties on each particular TFF2 Product are payable on a country-by-country and Product-by-Product basis until the latest of (i) the date of expiration of the last valid claim in the last to expire of the issued patents covered by the Columbia License Agreement, and (ii) a specified period of time after the first commercial sale of a TFF2 Product in the country in question. Royalties on each particular Other Product are payable on a country-by-country and product-by-product basis until a specified period of time after the first commercial sale of such particular Other Product in such country. Royalties payable on net sales of the TFF2 Product and Other Products may be reduced by 50% of the royalties payable by Tonix to any third party for intellectual property rights which are necessary for the practice of the rights licensed to Tonix under the Columbia License Agreement, provided that the royalty payable on a Product or Other Product may not be reduced by more than 50%.

The Company is also obligated to make contingent milestone payments to Columbia totaling $4.1 million on a Product-by-Product basis upon the achievement of certain development, approval and sales milestones related to a TFF2 Product. In addition, the Company shall pay Columbia 5% of consideration, other than royalty payments and certain other categories of consideration, payable to the Company by a sublicensee. As of March 31, 2020, no milestone payments have been accrued or paid in relation to this agreement.

On May 20, 2019, the Company entered into an exclusive License Agreement (the "License Agreement") with Columbia pursuant to which Columbia, for itself and on behalf of the University of Kentucky and the University of Michigan (collectively, the "Institutions") granted to the Company an exclusive license, with the right to sublicense, certain patents, technical information and material (collectively, the "Technology") related to a double-mutant cocaine esterase, and to develop and commercialize products thereunder (each, a "Product"). Pursuant to the terms of the License Agreement, Columbia has reserved for itself and the Institutions the right to practice the Technology for academic research and educational purposes.

The Company agreed to pay a six-digit license fee to Columbia as consideration for entering into the License Agreement. The Company is obligated to use Commercially Reasonable Efforts, as defined in the License Agreement, to develop and commercialize the Product, and to achieve specified developmental milestones. The first 50% of the license fee was paid by June 30, 2019, while the remaining 50% license fee, which is expected to be paid during the second quarter of 2020, has been accrued for within accrued expenses and other current liabilities as of March 31, 2020. Both installments of the license fee were recorded to clinical expenses in the statement of operations for the year ended December 31, 2019.

The Company has agreed to pay Columbia single-digit royalties on net sales of (i) Products sold by the Company or a sublicensee and (ii) any other products that involve material or technical information related to the Product and transferred to the Company pursuant to the License Agreement ("Other Products") sold by the Company or a sublicensee. Royalties on each particular Product are payable on a country-by-country and Product-by-Product basis until the latest of (i) the date of expiration of the last valid claim in the last to expire of the issued patents covered by the License Agreement, (ii) a specified period of time after the first commercial sale of a Product in the country in question, or (iii) expiration of any market exclusivity period granted by a regulatory agency. Royalties on each particular Other Product are payable on a country-by-country and product-by-product basis until the later of (i) a specified period of time after the first commercial sale of such particular Other Product in such country or (ii) expiration of any market exclusivity period granted by a regulatory agency. Royalties payable on net sales of the Product and Other Products may be reduced by 50% of the royalties payable by the Company to any third party for intellectual property rights which are necessary for the practice of the rights licensed to the Company under the License Agreement, provided that the royalty payable on a Product or Other Product may not be reduced by more than 50%.

The Company is also obligated to make contingent milestone payments to Columbia totaling $3 million on a Product-by-Product basis upon the achievement of certain development, approval and sales milestones related to a Product. In addition, the Company shall pay Columbia 5% of consideration, other than royalty payments and certain other categories of consideration, payable to the Company by a sublicensee. As of March 31, 2020, no milestone payments have been accrued or paid in relation to this agreement.

NOTE 7 – SALE OF COMMON STOCK

February 7th Financing

On February 7, 2020, the Company entered into an underwriting agreement ("the February 7th financing") with A.G.P/Alliance Global Partners ("AGP") pursuant to which the Company sold securities consisting of 3,837,000 Class A Units at a public offering price of $0.57 per unit, with each unit consisting of one share of common stock and one warrant to purchase one share of common stock, and 5,313 Class B Units at a public offering price of $1,000 per unit, with each unit consisting of one share of Series B Convertible Preferred Stock, with a conversion price of $0.57 per share, convertible into 1,754.386 shares of common stock and warrants to purchase 1,754.386 shares of common stock. The warrants have an exercise price of $0.57, are immediately exercisable and expire five years from the date of issuance.

The February 7th financing closed on February 11, 2020. AGP purchased the Class A and Class B Units at a seven-percent discount to the public offering price, for an aggregate discount of approximately $0.5 million. The Company incurred other offering expenses of approximately $0.5 million. The Company received net proceeds of approximately $6.5 million, after deducting the underwriting discount and other offering expenses.

After allocating proceeds to the warrants issued with the Series B Convertible Preferred Stock, the effective conversion price of the Series B Convertible Preferred Stock was determined to be less than the fair value of the underlying common stock at the date of commitment, resulting in a beneficial conversion feature ("BCF") at that date. Since the Series B Preferred Stock has no stated maturity or redemption date and is immediately convertible at the option of the holder, the discount created by the BCF of $1.3 million, based on intrinsic value, was charged to additional paid in capital as a "deemed dividend" and included in net loss to common stockholders.

During the first quarter of 2020, all 5,313 shares of Series B Convertible Preferred Stock were converted into common stock.

During February and March 2020, 10.8 million of the warrants issued in the February 7th financing, with an exercise price of $0.57, were exercised for proceeds of approximately $6.2 million.

February 28th Financing

On February 28, 2020, the Company entered into an underwriting agreement ("the February 28th Financing") with AGP, relating to the issuance and sale of 14,550,000 shares of common stock, in a registered direct public offering. The public offering price for each share of common stock was $1.10. The February 28th Financing closed on March 3, 2020. AGP purchased the shares at a seven percent discount to the then current public price, for an aggregate discount of $1.1 million. The Company incurred other offering expenses of approximately $0.1 million. The Company received net proceeds of approximately $14.8 million, after deducting the underwriting discount and other offering expenses.

November 2019 Financing

On November 14, 2019, the Company entered into an underwriting agreement with AGP pursuant to which the Company sold securities consisting of 547,420 Class A Units at a public offering price of $1.94 per unit, with each unit consisting of one share of common stock, one warrant to purchase one share of common stock ("primary warrant") and one-half of one warrant to purchase one half of one share common stock ("common warrant"), and 7,938 Class B Units at a public offering price of $1,000 per unit, with each unit consisting of one share of Series A Convertible Preferred Stock, with a conversion price of $1.94 per share, convertible into 515.464 shares of common stock, primary warrants to purchase 515.464 shares of common stock, and common warrants to purchase 257.732 shares of common stock. The primary warrants have an exercise price of $1.94, are immediately exercisable and expire five years from the date of issuance. The common warrants have an exercise price of $1.94, are exercisable and expire 12 months from the date of issuance. The common warrants are exercisable on a cashless basis at the option of the holder on the earlier of 30 days from issuance and the date by which an aggregate of $9.0 million of our securities were traded.

The November 2019 Financing closed on November 19, 2019. AGP purchased the Class A and Class B Units at a seven-percent discount to the public offering price, for an aggregate discount of approximately $0.6 million. The Company incurred other offering expenses of approximately $0.5 million. The Company received net proceeds from the November 2019 Financing of approximately $7.9 million, after deducting the underwriting discount and other offering expenses.

After allocating proceeds to the warrants issued with the Series A Convertible Preferred Stock, the effective conversion price of the Series A Convertible Preferred Stock was determined to be less than the fair value of the underlying common stock at the date of commitment, resulting in a BCF at that date. Since the Series A Preferred Stock has no stated maturity or redemption date and is immediately convertible at the option of the holder, the discount created by the BCF of $2.5 million, based on the intrinsic value, was charged to additional paid in capital as a "deemed dividend" and included in net loss to common stockholders.

As of December 31, 2019, all 7,938 shares of Series A Convertible Preferred Stock were converted into common stock.

With the February 7th financing, warrants that were issued as part of the November 2019 financing were repriced at $0.57. As a result of the issuance of common stock in February 2020 for less than the November 2019 warrant exercise price, a repricing of the warrants issued in the November 2019 financing was triggered. The Company recognized a one-time non-cash "deemed dividend" of $0.5 million, representing the increase in the fair value of the warrants. The "deemed dividend" was charged to additional paid in capital and included in net loss to stockholders. During February and March 2020, 2.3 million of the warrants issued in the November 2019 financing, with an exercise price of $0.57, were exercised for proceeds of approximately $1.3 million.

December 2018 Financing

On December 7, 2018, the Company entered into an underwriting agreement with AGP and Dawson James Securities, Inc. (collectively, the"Underwriters") pursuant to which the Company sold securities consisting of 86,171 Class A Units at a public offering price of $35.00 per unit, with each unit consisting of one share of common stock and a warrant to purchase one share of common stock, and 11,984 Class B Units at a public offering price of $1,000 per unit, with each unit consisting of one share of Series A Convertible Preferred Stock, with a conversion price of $35.00 per share convertible into 28.5714 shares of common stock, and warrants to purchase 28.5714 shares of Common Stock. The warrants have an exercise price of $35.00, are immediately exercisable and expire five years from the date of issuance.

The Company also granted the Underwriters a 45-day option to purchase up to 64,286 shares of common stock and/or additional warrants to purchase up to 64,286 additional shares of common stock.

The December 2018 Financing closed on December 11, 2018. The Underwriters purchased the Class A and Class B Units at a seven-percent discount to the public offering price, for an aggregate discount of approximately $1.1 million (or $2.40 per share). The Company incurred other offering expenses of approximately $0.4 million. The Company received net proceeds from the December 2018 Financing of approximately $13.6 million, after deducting the underwriting discount and other offering expenses.

Additionally, the Underwriters fully exercised the over-allotment option related to the warrants and purchased additional warrants to acquire 64,000 shares of common stock for net proceeds of approximately $6,000.

On December 13, 2018, the Underwriters partially exercised the over-allotment option and purchased 25,000 shares of common stock for net proceeds of approximately $0.8 million, net of an aggregate discount of $0.1 million (or $2.40 per share).

After allocating proceeds to the warrants issued with the Series A convertible preferred stock, the effective conversion price of the Series A Convertible Preferred Stock, after the bifurcation of the warrants, was determined to be less than the fair value of the underlying common stock at the date of commitment, resulting in a BCF at that date. Since the Series A Preferred Stock has no stated maturity or redemption date and is immediately convertible at the option of the holder, the discount created by the BCF of $3.3 million, based on the intrinsic value, was charged to additional paid in capital as a "deemed dividend" and included in net loss to common stockholders.

During the first quarter of 2019, the remaining 9,856 shares of Series A Convertible Preferred Stock were converted into 281,610 shares of common stock.

NOTE 8 – STOCK-BASED COMPENSATION

2019 Stock Incentive Plan

On May 3, 2019, the Company's stockholders approved the Tonix Pharmaceuticals Holding Corp. 2019 Stock Incentive Plan (the "2019 Plan"). The 2019 Plan provided for the issuance of up to 140,000 shares of common stock. With the adoption of the 2020 Plan (as defined below), no further grants may be made under the 2019 Plan.

2020 Stock Incentive Plan

On January 16, 2020, the Company's stockholders approved the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan (the "2020 Plan", and together with the 2019 Plan, the "Plans").

Under the terms of the 2020 Plan, the Company may issue (1) stock options (incentive and nonstatutory), (2) restricted stock, (3) SARs, (4) RSUs, (5) other stock-based awards, and (6) cash-based awards. The 2020 Plan provides for the issuance of up to 600,000 shares of common stock, which amount will be increased to the extent that awards granted under the 2020 Plan and the Plans are forfeited, expire or are settled for cash (except as otherwise provided in the 2020 Plan). The Board of Directors determines the exercise price, vesting and expiration period of the grants under the 2020 Plan. However, the exercise price of an incentive stock option may not be less than 110% of fair value of the common stock at the date of the grant for a 10% or more shareholder and 100% of fair value for a grantee who is not a 10% shareholder. The fair value of the common stock is determined based on quoted market price or in absence of such quoted market price, by the Board of Directors in good faith. Additionally, the expiration period of grants under the 2020 Plan may not be more than ten years. As of March 31, 2020, 43,500 shares were available for future grants under the 2020 Plan. The 2020 Plan was replaced by the Amended and Restated 2020 Plan on May 1, 2020.

A summary of the stock option activity and related information for the Plans for the three months ended March 31, 2020 is as follows:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at December 31, 2019	109,036	$ 199.57	8.60	$ —
Grants	556,500	$ 0.44		
Exercised	—			
Forfeitures or expirations	—			
Outstanding at March 31, 2020	665,536	$ 33.06	9.65	$ 151,035
Exercisable at March 31, 2020	21,812	$ 828.58	5.59	$ —

The aggregate intrinsic value in the preceding table represents the total pretax intrinsic value, based on options with an exercise price less than the Company's closing stock price at the respective dates.

The weighted average fair value of options granted for the three-month periods ended March 31, 2020 and 2019 was $0.35 and $15.55 per share, respectively.

The Company measures the fair value of stock options on the date of grant, based on the Black Scholes option pricing model using certain assumptions discussed below, and the closing market price of the Company's common stock on the date of the grant. For employees and directors, the fair value of the award is measured on the grant date. Most stock options granted pursuant to the Plans typically vest 1/3rd 12 months from the date of grant and 1/36th each month thereafter for 24 months and expire ten years from the date of grant. In addition, the Company issues options to directors which vest over a one-year period. The Company also issues performance-based options to executive officers, which vest when target parameters are met, and premium options which have an exercise price greater than the grant date fair value, subject in each case to a one year minimum service period prior to vesting. Stock-based compensation expense related to awards is amortized over the applicable vesting period using the straight-line method.

The assumptions used in the valuation of stock options granted during the three months ended March 31, 2020 and 2019 were as follows:

	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Risk-free interest rate	0.49% to 1.25 %	2.48% to 2.54 %
Expected term of option	5.50 to 6.00 years	3.00 to 6.00 years
Expected stock price volatility	124.11% to 127.83 %	109.71 %
Expected dividend yield	0.0	0.0

The risk-free interest rate is based on the yield of Daily U.S. Treasury Yield Curve Rates with terms equal to the expected term of the options as of the grant date. The expected term of options is determined using the simplified method, as provided in an SEC Staff Accounting Bulletin, and the expected stock price volatility is based on the Company' historical stock price volatility.

Stock-based compensation expense relating to options granted of $0.4 million and $0.3 million was recognized for the three-month periods ended March 31, 2020 and 2019, respectively.

As of March 31, 2020, the Company had approximately $1.6 million of total unrecognized compensation cost related to non-vested awards granted under the Plans, which the Company expects to recognize over a weighted average period of 1.69 years.

2018 Employee Stock Purchase Plan

On June 8, 2018, the Company's stockholders approved the Tonix Pharmaceuticals Holdings Corp. 2018 Employee Stock Purchase Plan (the "2018 ESPP"). As a result of adoption of the 2019 ESPP, as defined below, by the stockholders, no further grants may be made under the 2018 ESPP Plan.

2019 Employee Stock Purchase Plan

On May 3, 2019, the Company's stockholders approved the Tonix Pharmaceuticals Holdings Corp. 2019 Employee Stock Purchase Plan (the "2019 ESPP").

The 2019 ESPP allows eligible employees to purchase up to an aggregate of 15,000 shares of the Company's common stock. Under the 2019 ESPP, on the first day of each offering period, each eligible employee for that offering period has the option to enroll for that offering period, which allows the eligible employees to purchase shares of the Company's common stock at the end of the offering period. Each offering period under the 2019 ESPP is for six months, which can be modified from time-to-time. Subject to limitations, each participant will be permitted to purchase a number of shares determined by dividing the employee's accumulated payroll deductions for the offering period by the applicable purchase price, which is equal to 85 percent of the fair market value of our common stock at the beginning or end of each offering period, whichever is less. A participant must designate in his or her enrollment package the percentage (if any) of compensation to be deducted during that offering period for the purchase of stock under the 2019 ESPP, subject to the statutory limit under the Code. As of March 31, 2020, 11,041 shares were available for future sales under the 2019 ESPP. The 2019 ESPP was replaced by the 2020 Employee Stock Purchase Plan on May 1, 2020.

The 2019 ESPP and 2018 ESPP are considered compensatory plans with the related compensation cost expensed over the six-month offering period. For the quarters ended March 31, 2020 and 2019, $0 and $24,000, respectively were expensed. In January 2019, 177 shares that were purchased as of December 31, 2018, under the 2018 ESPP, were issued. Accordingly, during the quarter ended March 31, 2019, approximately $3,000 of employee payroll deductions accumulated at December 31, 2018, related to acquiring such shares, was transferred from accrued expenses to additional paid in capital. As of December 31, 2019, approximately $9,000 of employee payroll deductions, which were withheld since July 1, 2019, the commencement of the offering period ending December 31, 2019, were included in accrued expenses in the accompanying balance sheet. In January 2020, 1,578 shares that were purchased as of December 31, 2019, under the 2019 ESPP, were issued. Accordingly, during the quarter ended March 31, 2020, approximately $2,000 of employee payroll deductions accumulated at December 31, 2019, related to acquiring such shares, was transferred from accrued expenses to additional paid in capital. The remaining $7,000 was returned to the employees.

NOTE 9 – STOCK WARRANTS

The following table summarizes information with respect to outstanding warrants to purchase common stock of the Company at March 31, 2020:

Exercise Price	Number Outstanding	Expiration Date
$ 0.57	2,500	November 2020
$ 0.57	2,344,198	November 2024
$ 0.57	2,341,026	February 2025
$ 35.00	490,571	December 2023
$ 630.00	5,441	October 2021
$ 687.50	474	October 2021
	5,184,210	

During the quarter ended March 31, 2020, 2.3 million warrants from the November 2019 financing, with an exercise price of $0.57, were exercised for proceeds of approximately $1.3 million.

During the quarter ended March 31, 2020, 10.8 million warrants from the February 7th financing, with an exercise price of $0.57, were exercised for proceeds of approximately $6.2 million.

During the quarter ended March 31, 2019, 2,000 warrants with an exercise price of $35.00 were exercised for proceeds of approximately $70,000.

During the quarter ended March 31, 2019, 24 warrants with an exercise price of $25,000 expired.

NOTE 10 – LEASES

The Company has various operating lease agreements, which are primarily for office space. These agreements frequently include one or more renewal options and require the Company to pay for utilities, taxes, insurance and maintenance expense. No lease agreement imposes a restriction on the Company's ability to engage in financing transactions or enter into further lease agreements. At March 31, 2020, the Company has right-of-use assets of $0.3 million and a total lease liability for operating leases of $0.3 million of which $25,000 is included in long-term lease liabilities and $0.3 million is included in current lease liabilities.

At March 31, 2020, future minimum lease payments for operating leases with non-cancelable terms of more than one year were as follows (in thousands):

Year Ending December 31,	
Remainder of 2020	$ 241
2021	42
Included interest	(2)
	$ 281

In January 2019, the Company entered into a new operating lease, resulting in the Company recognizing an operating lease liability of approximately $0.4 million based on the present value of the minimum rental payments. The Company also recognized corresponding ROU assets of approximately $0.4 million. In April 2019, the Company entered into a lease amendment, resulting in the Company recognizing an additional operating lease liability of approximately $0.1 million based on the present value of the minimum rental payments. The Company also recognized a corresponding increase to ROU assets of approximately $0.1 million. In February 2020, the Company entered into a lease amendment, resulting in the Company recognizing an additional operating lease liability of approximately $35,000 based on the present value of the minimum rental payments. The Company also recognized a corresponding increase to ROU assets of approximately $35,000. Operating lease expense was $0.1 million for the both the three months ended March 31, 2020 and 2019.

Other information related to leases is as follows:

Cash paid for amounts included in the measurement of lease liabilities:	**Three Months Ended March 31, 2020**	**Three Months Ended March 31, 2019**
Operating cash flow from operating leases (in thousands)	$ 115	$ 108
Weighted Average Remaining Lease Term		
Operating leases	0.84 years	1.77 years
Weighted Average Discount Rate		
Operating leases	3.52%	3.36%

NOTE 11 – COMMITMENTS

Research and development contracts

The Company has entered into contracts with various contract research organizations with outstanding commitments aggregating approximately $13.8 million at March 31, 2020 for future work to be performed.

Defined contribution plan

The Company established a qualified defined contribution plan (the "401(k) Plan") pursuant to Section 401(k) of the Code, whereby all eligible employees may participate. Participants may elect to defer a percentage of their annual pretax compensation to the 401(k) Plan, subject to defined limitations. The Company is required to make contributions to the 401(k) Plan equal to 100 percent of each participant's pretax contributions of up to six percent of his or her eligible compensation, and the Company is also required to make a contribution equal to three percent of each participant's salary, on an annual basis, subject to limitations under the Code. For the three months ended March 31, 2020 and 2019, the Company charged operations $50,000 and $46,000, respectively, for contributions under the 401(k) Plan.

NOTE 12 – SUBSEQUENT EVENTS

On April 8, 2020, the Company entered into a sales agreement (the "Sales Agreement"), with AGP, pursuant to which the Company may issue and sell, from time to time, shares of the Company's common stock having an aggregate offering price of up to $50.0 million in at-the-market offerings ("ATM") sales. On the same day, the Company filed a prospectus supplement under a shelf registration relating to the Sales Agreement. AGP will act as sales agent and will be paid a 3% commission on each sale under the Sales Agreement. The Company's common stock will be sold at prevailing market prices at the time of the sale, and, as a result, prices will vary. Subsequent to the quarter ended March 31, 2020, the Company sold approximately 2.9 million shares of common stock under the Sales Agreement, for gross proceeds of approximately $2.1 million.

On April 21, 2020, we received a letter (the "Notice") from the Listing Qualifications staff of The Nasdaq Stock Market LLC ("Nasdaq") indicating that, based upon the closing bid price of the Company's common stock for the last 30 consecutive business days, the Company no longer meets the requirement to maintain a minimum bid price of $1 per share, as set forth in Nasdaq Listing Rule 55450(a)(1) (the "Minimum Bid Price Requirement").

In accordance with Nasdaq Listing Rule 5810(c)(3)(A), we have been provided a period of 180 calendar days in which to regain compliance. In order to regain compliance with the Minimum Bid Price Requirement, the closing bid price of our common stock must be at least $1 per share for a minimum of ten consecutive business days during this 180-day period. In the event that we do not regain compliance within this 180-day period, we may be eligible to seek an additional compliance period of 180 calendar days if it meets the continued listing requirement for market value of publicly held shares and all other initial listing standards for the Nasdaq Global Market, with the exception of the Minimum Bid Price Requirement, and provides written notice to Nasdaq of its intent to cure the deficiency during this second compliance period, by effecting a reverse stock split, if necessary. However, if it appears to the Nasdaq Staff that we will not be able to cure the deficiency, or if we are otherwise not eligible, Nasdaq will provide notice to us that our common stock will be subject to delisting.

The Notice also provides that, due to recent and unprecedented market turmoil, Nasdaq has suspended the compliance period for the Minimum Bid Price Requirement through June 30, 2020. Accordingly, we have until December 28, 2020 to regain compliance with the Minimum Bid Price Requirement.

On May 1, 2020, the Company's stockholders approved the Tonix Pharmaceuticals Holding Corp. Amended and Restated 2020 Stock Incentive Plan (the "Amended and Restated 2020 Plan"), and together with the 2020 Plan and the 2019 Plan, the "Plans").

On May 4, 2020, the Company granted options, under the Amended and Restated 2020 Plan, to purchase an aggregate of 512,500 shares of the Company's common stock to the non-executive members of its Board of Directors with an exercise price of $0.77, with a term of ten years, vesting on the one year anniversary of the date of issuance.

On May 4, 2020, the Company granted options, under the Amended and Restated 2020 Plan, to purchase an aggregate of 5,555,000 shares of the Company's common stock to employees with an exercise price of $0.77, with a term of ten years, vesting 1/3 on the first anniversary and 1/36th each month thereafter for 24 months. Additionally, the Company granted options to purchase 3,220,000 shares of the Company's common stock to employees with an exercise price of $0.96, with a term of ten years, vesting 1/3 on the first anniversary and 1/36th each month thereafter for 24 months.

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

This Management's Discussion and Analysis of Financial Condition and Results of Operations includes a number of forward-looking statements that reflect Management's current views with respect to future events and financial performance. You can identify these statements by forward-looking words such as "may" "will," "expect," "anticipate," "believe," "estimate" and "continue," or similar words. Those statements include statements regarding the intent, belief or current expectations of us and members of its management team as well as the assumptions on which such statements are based. Prospective investors are cautioned that any such forward-looking statements are not guarantees of future performance and involve risk and uncertainties, and that actual results may differ materially from those contemplated by such forward-looking statements.

Readers are urged to carefully review and consider the various disclosures made by us in this report and in our other reports filed with the Securities and Exchange Commission. Important factors known to us could cause actual results to differ materially from those in forward-looking statements. We undertake no obligation to update or revise forward-looking statements to reflect changed assumptions, the occurrence of unanticipated events or changes in the future operating results over time. We believe that its assumptions are based upon reasonable data derived from and known about our business and operations. No assurances are made that actual results of operations or the results of our future activities will not differ materially from its assumptions. Factors that could cause differences include, but are not limited to: the COVID-19 pandemic, including its impact on the Company, substantial competition; our possible need for additional financing; uncertainties of patent protection and litigation; uncertainties of government or third party payor reimbursement; limited research and development efforts and dependence upon third parties; and risks related to failure to obtain clearances or approvals from the United States Food and Drug Administration, or FDA, and noncompliance with FDA regulations.

Business Overview

We are a clinical-stage biopharmaceutical company focused on discovering, licensing, acquiring and developing drugs and biologics to treat and prevent human disease and alleviate suffering. Our current portfolio includes biologics to prevent infectious diseases and small molecules and biologics to treat pain, psychiatric and addiction conditions. In Q1 2020, we announced a program to develop a potential vaccine, TNX-1800 to protect against the novel coronavirus disease emerging in 2019, or COVID-19. In Q2 2020, we announced a program to test and develop three additional potential vaccines, TNX-1810, TNX-1820 and TNX-1830 to protect against COVID-19. TNX-1800 is designed to elicit predominantly T cell responses and TNX-1810, TNX-1820 and TNX-30 are designed to elect almost pure T cell responses, based on technology licensed from the University of Alberta. Our most advanced drug development programs are focused on delivering safe and effective long-term treatments for fibromyalgia, or FM, and posttraumatic stress disorder, or PTSD. FM is a pain disorder characterized by chronic widespread pain, non-restorative sleep, fatigue and impaired cognition. PTSD is a psychiatric condition characterized by the re-experiencing of trauma through intrusive and vivid recollections, nightmares and flashbacks. Both FM and PTSD are associated with chronic disability, inadequate treatment options, high utilization of healthcare services, and significant economic burden. In addition, our product pipeline includes other clinical stage and pre-clinical stage programs.

Current Operating Trends

Our current research and development efforts are focused on developing TNX-1800, TNX-1810, TNX-1820 and TNX-1830 as potential vaccines against COVID-19, TNX-801 as a potential smallpox and monkeypox vaccine, and TNX-102 SL for the treatment of FM, PTSD, AAD and AUD. We also plan to expend efforts and resources to develop our other pipeline programs, primarily related to TNX-1300, TNX-601, TNX-701, TNX-1500, TNX-1600 and TNX-1700. In addition, we will continue to opportunistically discover, license or acquire therapeutics or capabilities that diversify our pipeline or that strengthen our ability to develop therapeutics. Our research and development expenses consist of manufacturing work and the cost of drug ingredients used in such work, fees paid to consultants for work related to clinical trial design and regulatory activities, fees paid to providers for conducting various clinical studies as well as for the analysis of the results of such studies, and for other medical research addressing the potential efficacy and safety of our study drugs. We believe that significant investment in product development is a competitive necessity, and we plan to continue these investments in order to be in a position to realize the potential of our product candidates and proprietary technologies.

We expect that most of our research and development expenses in the near-term future will be incurred in support of our current and future preclinical and clinical development programs. These expenditures are subject to numerous uncertainties relating to timing and cost to completion. We test compounds in numerous preclinical studies for safety, toxicity and efficacy. At the appropriate time, subject to the approval of regulatory authorities, we expect to conduct clinical trials for each drug candidate. We anticipate funding these trials ourselves, and possibly with the assistance of federal grants, contracts or other agreements. As we obtain results from trials, we may elect to discontinue or delay clinical trials for certain products in order to focus our resources on more promising products. Completion of clinical trials may take several years, and the length of time generally varies substantially according to the type, complexity, novelty and intended use of a product candidate.

The commencement and completion of clinical trials for our products may be delayed by many factors, including the global COVID-19 pandemic, lack of efficacy during clinical trials, unforeseen safety issues, slower than expected participant recruitment, lack of funding or government delays. In addition, we may encounter regulatory delays or rejections as a result of many factors, including results that do not support the intended safety or efficacy of our product candidates, perceived defects in the design of clinical trials and changes in regulatory policy during the period of product development. As a result of these risks and uncertainties, we are unable to accurately estimate the specific timing and costs of our clinical development programs or the timing of material cash inflows, if any, from our product candidates. Our business, financial condition and results of operations may be materially adversely affected by any delays in, or termination of, our clinical trials or a determination by the FDA that the results of our trials are inadequate to justify regulatory approval, insofar as cash in-flows from the relevant drug or program would be delayed or would not occur.

Results of Operations

We anticipate that our results of operations will fluctuate for the foreseeable future due to several factors, such as the progress of our research and development efforts and the timing and outcome of regulatory submissions. Due to these uncertainties, accurate predictions of future operations are difficult or impossible to make.

Three Months Ended March 31, 2020 Compared to Three Months Ended March 31, 2019

Research and Development Expenses. Research and development expenses for the three months ended March 31, 2020 were $4.7 million, an increase of $0.8 million, or 21%, from $3.9 million for the three months ended March 31, 2019. This increase is primarily due to an increase in clinical expenses, period over period, due to the ongoing Phase 3 trials in FM and PTSD and the beginning of the COVID-19 vaccine work.

General and Administrative Expenses. General and administrative expenses for the three months ended March 31, 2020 were $2.6 million, an increase of $0.2 million, or 8%, from $2.4 million incurred in the three months ended March 31, 2019. This increase is mostly attributable to an increase in legal fees of $0.1 million, due to increased patent prosecution costs, and an increase in investor and public relations expenses of $0.1 million, due to increased investor meetings.

Net Loss. As a result of the forgoing, the net loss for the three months ended March 31, 2020 was $7.3 million, compared to a net loss of $6.2 million for the three months ended March 31, 2019, an increase of $1.1 million or 18%.

License Agreements

On September 16, 2019, we entered into an exclusive License Agreement (the "Columbia License Agreement") with the Trustees of Columbia University in the City of New York ("Columbia") pursuant to which Columbia granted to Tonix an exclusive license, with the right to sublicense, certain patents and technical information (collectively, the "TFF2 Technology") related to a recombinant Trefoil Family Factor 2 (TFF2), and to develop and commercialize products thereunder (each, a "TFF2 Product"). Pursuant to the terms of the Columbia License Agreement, Columbia has reserved for itself the right to practice the TFF2 Technology for academic research and educational purposes.

We paid a five-digit license fee to Columbia as consideration for entering into the Columbia License Agreement, which was recorded to non-clinical expenses in the statement of operations for the year ended December 31, 2019. The Company is obligated to use Commercially Reasonable Efforts, as defined in the Columbia License Agreement, to develop and commercialize the TFF2 Product, and to achieve specified developmental milestones.

We have agreed to pay Columbia single-digit royalties on net sales of (i) TFF2 Products sold by Tonix or a sublicensee and (ii) any other products that involve material or technical information related to the TFF2 Product and transferred to Tonix pursuant to the License Agreement ("Other Products") sold by Tonix or a sublicensee. Royalties on each particular TFF2 Product are payable on a country-by-country and Product-by-Product basis until the latest of (i) the date of expiration of the last valid claim in the last to expire of the issued patents covered by the Columbia License Agreement, and (ii) a specified period of time after the first commercial sale of a TFF2 Product in the country in question. Royalties on each particular Other Product are payable on a country-by-country and product-by-product basis until a specified period of time after the first commercial sale of such particular Other Product in such country. Royalties payable on net sales of the TFF2 Product and Other Products may be reduced by 50% of the royalties payable by Tonix to any third party for intellectual property rights which are necessary for the practice of the rights licensed to Tonix under the Columbia License Agreement, provided that the royalty payable on a TFF2 Product or Other Product may not be reduced by more than 50%.

We are also obligated to make contingent milestone payments to Columbia totaling $4.1 million on a Product-by-Product basis upon the achievement of certain development, approval and sales milestones related to a TFF2 Product. In addition, we shall pay Columbia 5% of consideration, other than royalty payments and certain other categories of consideration, payable to us by a sublicensee. As of March 31, 2020, no milestone payments have been accrued or paid in relation to this agreement.

On May 20, 2019, we entered into an exclusive License Agreement (the "License Agreement") with Columbia pursuant to which Columbia, for itself and on behalf of the University of Kentucky and the University of Michigan (collectively, the "Institutions") granted to us an exclusive license, with the right to sublicense, certain patents, technical information and material (collectively, the "Technology") related to a double-mutant cocaine esterase, and to develop and commercialize products thereunder (each, a "Product"). Pursuant to the terms of the License Agreement, Columbia has reserved for itself and the Institutions the right to practice the Technology for academic research and educational purposes.

We agreed to pay a six-digit license fee to Columbia as consideration for entering into the License Agreement. We are obligated to use Commercially Reasonable Efforts, as defined in the License Agreement, to develop and commercialize the Product, and to achieve specified developmental milestones. The first 50% of the license fee was paid by June 30, 2019, while the remaining 50% license fee, which is expected to be paid during the second quarter of 2020, has been accrued for within accrued expenses and other current liabilities as of March 31, 2020. Both installments of the license fee were recorded to clinical expenses in the statement of operations for the year ended December 31, 2019.

We agreed to pay Columbia single-digit royalties on net sales of (i) Products sold by Tonix or a sublicensee and (ii) any other products that involve material or technical information related to the Product and transferred to us pursuant to the License Agreement ("Other Products") sold by Tonix or a sublicensee. Royalties on each particular Product are payable on a country-by-country and Product-by-Product basis until the latest of (i) the date of expiration of the last valid claim in the last to expire of the issued patents covered by the License Agreement, (ii) a specified period of time after the first commercial sale of a Product in the country in question, or (iii) expiration of any market exclusivity period granted by a regulatory agency. Royalties on each particular Other Product are payable on a country-by-country and product-by-product basis until the later of (i) a specified period of time after the first commercial sale of such particular Other Product in such country or (ii) expiration of any market exclusivity period granted by a regulatory agency. Royalties payable on net sales of the Product and Other Products may be reduced by 50% of the royalties payable by us to any third party for intellectual property rights which are necessary for the practice of the rights licensed to us under the License Agreement, provided that the royalty payable on a Product or Other Product may not be reduced by more than 50%.

We are also obligated to make contingent milestone payments to Columbia totaling $3 million on a Product-by-Product basis upon the achievement of certain development, approval and sales milestones related to a Product. In addition, we shall pay Columbia 5% of consideration, other than royalty payments and certain other categories of consideration, payable to us by a sublicensee. As of March 31, 2020, no milestone payments have been accrued or paid in relation to this agreement.

On August 19, 2019, we entered into an asset purchase agreement (the "Asset Purchase Agreement") with TRImaran Pharma, Inc. ("TRImaran") and the selling shareholders named therein (the "Selling Shareholders") pursuant to which we acquired TRImaran's assets related to certain pyran-based compounds (the "Assets"). In connection with the acquisition of the Assets, we entered into a First Amended and Restated Exclusive License Agreement (the "WSU License Agreement") with Wayne State University ("WSU") on August 19, 2019. As consideration for entering into the Asset Purchase Agreement, we paid $100,000 to TRImaran and have assumed certain liabilities of TRImaran totaling $68,500. Upon the achievement of specified development, regulatory and sales milestones, we also agreed to pay TRImaran and the Selling Shareholders, in restricted stock or cash, at our option, a total of approximately $3.4 million. As of March 31, 2020, no milestone payments have been accrued or paid in relation to this agreement.

Pursuant to the terms of the WSU License Agreement, WSU has granted us an exclusive license, with the right to sublicense, certain patents, technical information and material (collectively, the "Technology") related to the Assets. WSU has reserved for itself the right to practice the Technology for academic research and educational purposes. We are obligated to use commercially reasonable efforts to obtain regulatory approval for one or more products utilizing the Technology ("WSU Products") and to use commercially reasonable marketing efforts throughout the term of the WSU License Agreement. The WSU License Agreement specifies developmental milestones and the period of time during which such milestones must be completed and provides for an annual maintenance fee payable to WSU. Tonix is obligated to substantially manufacture WSU Products in the United States if WSU Products will be sold in the United States.

Pursuant to the WSU License Agreement, we have agreed to pay $75,000 to WSU as reimbursement of certain patent expenses, and, upon the achievement of specified development, regulatory and sales milestones, we also agreed to pay WSU, milestone payments totaling approximately $3.4 million. We have also agreed to pay WSU single-digit royalties on net sales of WSU Products sold by us or a sublicensee on a tiered basis based on net sales, and additional sublicense fees on certain consideration received from sublicensees. Royalties on each particular WSU Product are payable on a country-by-country and Product-by-Product basis until the date of expiration of the last valid claim in the last to expire of the issued patents covered by the WSU License Agreement. Royalties payable on net sales of WSU Products may be reduced by 50% of the royalties payable by us to any third party for intellectual property rights which are necessary for the practice of the rights licensed to us under the WSU License Agreement, provided that the royalty payable on a WSU Product may not be reduced by more than 50%. Each party also has the right to terminate the agreement for customary reasons such as material breach and bankruptcy. The WSU License Agreement contains provisions relating to termination, indemnification, confidentiality and other customary matters for an agreement of this kind. As of March 31, 2020, no milestone payments have been accrued or paid in relation to this agreement.

Liquidity and Capital Resources

As of March 31, 2020, we had working capital of $30.7 million, comprised primarily of cash and cash equivalents of $30.7 million and prepaid expenses and other of $2.7 million, offset by $1.4 million of accounts payable, $1.0 million of accrued expenses and current lease liabilities of $0.3 million. A significant portion of the accounts payable and accrued expenses are due to work performed in relation to our Phase 3 clinical trial in FM and PTSD. For the three months ended March 31, 2020 and 2019, we used approximately $9.3 million and $8.6 million of cash in operating activities, respectively, which represents cash outlays for research and development and general and administrative expenses in such periods. The increase in cash outlays principally resulted from an increase in research and development activities. For the three months ended March 31, 2020 and 2019, net proceeds from financing activities were $28.8 million and $0.1 million, respectively, predominately from the sale of our common stock and warrants.

Cash used by investing activities for the three months ended March 31, 2020 and 2019, was $0 and $7,000 respectively. The 2019 activity related to the purchase of property and equipment.

We believe that our cash resources will be sufficient to meet our projected operating requirements through the end of 2020, but we do not have enough resources to meet our operating requirements for the one-year from the date of filing of this Form 10-Q.

We continue to face significant challenges and uncertainties and, as a result, our available capital resources may be consumed more rapidly than currently expected due to changes we may make in our research and development spending plans. These factors raise substantial doubt about our ability to continue as a going concern for the one year from the date of filing of this Form 10-Q. We have the ability to obtain additional funding through public or private financing or collaborative arrangements with strategic partners to increase the funds available to fund operations. However, we may not be able to raise capital with terms acceptable to us. Without additional funds, we may be forced to delay, scale back or eliminate some of our research and development activities, or other operations and potentially delay product development in an effort to provide sufficient funds to continue our operations. If any of these events occurs, our ability to achieve our development and commercialization goals would be adversely affected. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

In December 2019, a novel strain of Coronavirus ("COVID-19") emerged that has caused significant disruptions to the U.S. and global economy. The spread of COVID-19 has led to regional quarantines, business shutdowns, labor shortages, disruptions to supply chains, and overall economic instability. Any of these events may have a material adverse effect on our business, operations and financial condition. The extent to which the Coronavirus impacts our operations will depend on future developments, which are highly uncertain and cannot be predicted with confidence, including the duration of the outbreak, new information that may emerge concerning the severity of COVID-19 and the actions taken to contain COVID-19 or treat its impact, among other things.

Future Liquidity Requirements

We expect to incur losses from operations for the near future. We expect to incur increasing research and development expenses, including expenses related to additional clinical trials. We will not have enough resources to meet our operating requirements for the one-year from filing date of this report.

Our future capital requirements will depend on a number of factors, including the progress of our research and development of product candidates, the timing and outcome of regulatory approvals, the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims and other intellectual property rights, the status of competitive products, the availability of financing and our success in developing markets for our product candidates.

We will need to obtain additional capital in order to fund future research and development activities. Future financing may include the issuance of equity or debt securities, obtaining credit facilities, or other financing mechanisms. Even if we are able to raise the funds required, it is possible that we could incur unexpected costs and expenses, fail to collect significant amounts owed to us, or experience unexpected cash requirements that would force us to seek alternative financing. Furthermore, if we issue additional equity or debt securities, shareholders may experience additional dilution or the new equity securities may have rights, preferences or privileges senior to those of existing holders of our common stock.

If additional financing is not available or is not available on acceptable terms, we may be required to delay, reduce the scope of or eliminate our research and development programs, reduce our commercialization efforts or obtain funds through arrangements with collaborative partners or others that may require us to relinquish rights to certain product candidates that we might otherwise seek to develop or commercialize independently.

February 7th Financing

On February 7, 2020, we entered into an underwriting agreement ("the February 7th financing") with A.G.P/Alliance Global Partners ("AGP") pursuant to which we sold securities consisting of 3,837,000 Class A Units at a public offering price of $0.57 per unit, with each unit consisting of one share of common stock and one warrant to purchase one share of common stock, and 5,313 Class B Units at a public offering price of $1,000 per unit, with each unit consisting of one share of Series B Convertible Preferred Stock, with a conversion price of $0.57 per share, convertible into 1,754.386 shares of common stock and warrants to purchase 1,754.386 shares of our common stock. The warrants have an exercise price of $0.57, are immediately exercisable and expire five years from the date of issuance.

The February 7th financing closed on February 11, 2020. AGP purchased the Class A and Class B Units at a seven-percent discount to the public offering price, for an aggregate discount of approximately $0.5 million. We incurred other offering expenses of approximately $0.5 million. We received net proceeds of approximately $6.5 million, after deducting the underwriting discount and other offering expenses.

After allocating proceeds to the warrants issued with the Series B Convertible Preferred Stock, the effective conversion price of the Series B Convertible Preferred stock was determined to be less than the fair value of the underlying common stock at the date of commitment, resulting in a beneficial conversion feature ("BCF") at that date. Since the Series B Preferred Stock has no stated maturity or redemption date and is immediately convertible at the option of the holder, the discount created by the BCF of $1.3 million, based on intrinsic value, was charged to additional paid in capital as a "deemed dividend" and included in net loss to common stockholders.

During the first quarter of 2020, all 5,313 shares of Series B Convertible Preferred Stock were converted into common stock.

During February and March 2020, 10.8 million of the warrants issued in the February 7th financing, with an exercise price of $0.57, were exercised for proceeds of approximately $6.2 million.

February 28th Financing

On February 28, 2020, we entered into an underwriting agreement ("the February 28th Financing") with AGP, relating to the issuance and sale of 14,550,000 shares of our common stock, in a registered direct public offering. The public offering price for each share of common stock was $1.10. The February 28th Financing closed on March 3, 2020. AGP purchased the shares at a seven percent discount to the then current public price, for an aggregate discount of $1.1 million. We incurred other offering expenses of approximately $0.1 million. We received net proceeds of approximately $14.8 million, after deducting the underwriting discount and other offering expenses.

November 2019 Financing

On November 14, 2019, we entered into an underwriting agreement with AGP pursuant to which we sold securities consisting of 547,420 Class A Units at a public offering price of $1.94 per unit, with each unit consisting of one share of common stock, one warrant to purchase one share of common stock ("primary warrant") and one-half of one warrant to purchase one half of one share common stock ("common warrant"), and 7,938 Class B Units at a public offering price of $1,000 per unit, with each unit consisting of one share of Series A Convertible Preferred Stock, with a conversion price of $1.94 per share, convertible into 515.464 shares of common stock, primary warrants to purchase 515.464 shares of common stock, and common warrants to purchase 257.732 shares of our common stock. The primary warrants have an exercise price of $1.94, are immediately exercisable and expire five years from the date of issuance. The common warrants have an exercise price of $1.94, are exercisable and expire 12 months from the date of issuance. The common warrants are exercisable on a cashless basis at the option of the holder on the earlier of 30 days from issuance and the date by which an aggregate of $9.0 million of our securities were traded.

The November 2019 Financing closed on November 19, 2019. AGP purchased the Class A and Class B Units at a seven-percent discount to the public offering price, for an aggregate discount of approximately $0.6 million. We incurred other offering expenses of approximately $0.5 million. We received net proceeds from the November 2019 Financing of approximately $7.9 million, after deducting the underwriting discount and other offering expenses.

After allocating proceeds to the warrants issued with the Series A Convertible Preferred Stock, the effective conversion price of the Series A Convertible Preferred Stock was determined to be less than the fair value of the underlying common stock at the date of commitment, resulting in a BCF at that date. Since the Series A Preferred Stock has no stated maturity or redemption date and is immediately convertible at the option of the holder, the discount created by the BCF of $2.5 million, based on the intrinsic value, was charged to additional paid in capital as a "deemed dividend" and included in net loss to common stockholders.

As of December 31, 2019, all 7,938 shares of Series A Convertible Preferred Stock were converted into common stock.

With the February 7th financing, warrants that were issued as part of the November 2019 financing were repriced at $0.57. As a result of the issuance of common stock in February 2020 for less than the November 2019 warrant exercise price, a repricing of the warrants issued in the November 2019 financing was triggered. We recognized a one-time non-cash "deemed dividend" of $0.5 million, representing the increase in the fair value of the warrants. The "deemed dividend" was charged to additional paid in capital and included in net loss to stockholders. During February and March 2020, 2.3 million of the warrants issued in the November 2019 financing, with an exercise price of $0.57, were exercised for proceeds of approximately $1.3 million.

December 2018 Financing

On December 7, 2018, we entered into an underwriting agreement with AGP and Dawson James Securities, Inc. (collectively, the "Underwriters") pursuant to which we sold securities consisting of 86,171 Class A Units at a public offering price of $35.00 per unit, with each unit consisting of one share of common stock and a warrant to purchase one share of common stock, and 11,984 Class B Units at a public offering price of $1,000 per unit, with each unit consisting of one share of Series A Convertible Preferred Stock, with a conversion price of $35.00 per share convertible into 28.5714 shares of common stock,and warrants to purchase 28.5714 shares of Common Stock. The warrants have an exercise price of $35.00, are immediately exercisable and expire five years from the date of issuance.

We also granted the Underwriters a 45-day option to purchase up to 64,286 shares of common stock and/or additional warrants to purchase up to 64,286 additional shares of common stock.

The December 2018 Financing closed on December 11, 2018. The Underwriters purchased the Class A and Class B Units at a seven-percent discount to the public offering price, for an aggregate discount of approximately $1.1 million (or $2.40 per share). We incurred other offering expenses of approximately $0.4 million. We received net proceeds from the December 2018 Financing of approximately $13.6 million, after deducting the underwriting discount and other offering expenses.

Additionally, the Underwriters fully exercised the over-allotment option related to the warrants and purchased additional warrants to acquire 64,000 shares of common stock for net proceeds of approximately $6,000.

On December 13, 2018, the Underwriters partially exercised the over-allotment option and purchased 25,000 shares of common stock for net proceeds of approximately $0.8 million, net of an aggregate discount of $0.1 million (or $2.40 per share).

After allocating proceeds to the warrants issued with the Series A Convertible Preferred Stock, the effective conversion price of the Series A Convertible Preferred Stock, after the bifurcation of the warrants, was determined to be less than the fair value of the underlying common stock at the date of commitment, resulting in a BCF at that date. Since the Series A Preferred Stock has no stated maturity or redemption date and is immediately convertible at the option of the holder, the discount created by the BCF of $3.3 million, based on the intrinsic value, was charged to additional paid in capital as a "deemed dividend" and included in net loss to common stockholders.

During the first quarter of 2019, the remaining 9,856 shares of Series A Convertible Preferred Stock were converted into 281,610 shares of common stock.

Stock Compensation

2019 Stock Incentive Plan

On May 3, 2019, our stockholders approved the Tonix Pharmaceuticals Holding Corp. 2019 Stock Incentive Plan (the "2019 Plan"). The 2019 Plan provided for the issuance of up to 140,000 shares of our common stock. With the adoption of the 2020 Plan (as defined below), no further grants may be made under the 2019 Plan.

2020 Stock Incentive Plan

On January 16, 2020, our stockholders approved the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan (the "2020 Plan", and together with the 2019 Plan, the "Plans").

Under the terms of the 2020 Plan, we may issue (1) stock options (incentive and nonstatutory), (2) restricted stock, (3) SARs, (4) RSUs, (5) other stock-based awards, and (6) cash-based awards. The 2020 Plan provides for the issuance of up to 600,000 shares of our common stock, which amount will be increased to the extent that awards granted under the 2020 Plan and the Plans are forfeited, expire or are settled for cash (except as otherwise provided in the 2020 Plan). The Board of Directors determines the exercise price, vesting and expiration period of the grants under the 2020 Plan. However, the exercise price of an incentive stock option may not be less than 110% of fair value of the common stock at the date of the grant for a 10% or more shareholder and 100% of fair value for a grantee who is not a 10% shareholder. The fair value of the common stock is determined based on quoted market price or in absence of such quoted market price, by the Board of Directors in good faith. Additionally, the expiration period of grants under the 2020 Plan may not be more than ten years. As of March 31, 2020, 43,500 shares were available for future grants under the 2020 Plan. The 2020 Plan was replaced by the Amended and Restated 2020 Plan on May 1, 2020.

We measure the fair value of stock options on the date of grant, based on the Black Scholes option pricing model using certain assumptions discussed below, and the closing market price of the Company's common stock on the date of the grant. For employees and directors, the fair value of the award is measured on the grant date. Most stock options granted pursuant to the Plans typically vest 1/3rd 12 months from the date of grant and 1/36th each month thereafter for 24 months and expire ten years from the date of grant. In addition, we issue options to directors which vest over a one-year period. We also issue premium options to executive officers, which have an exercise price greater than the grant date fair value, subject to a one year minimum service period prior to vesting. Stock-based compensation expense related to awards is amortized over the applicable vesting period using the straight-line method.

The weighted average fair value of options granted for the three-month periods ended March 31, 2020 and 2019 was $0.35 and $15.55 per share, respectively.

Stock-based compensation expense relating to options granted of $0.4 million and $0.3 million was recognized for the three-month periods ended March 31, 2020 and 2019, respectively.

As of March 31, 2020, we had approximately $1.6 million of total unrecognized compensation cost related to non-vested awards granted under the Plans, which the Company expects to recognize over a weighted average period of 1.69 years.

2018 Employee Stock Purchase Plan

On June 8, 2018, our stockholders approved the Tonix Pharmaceuticals Holdings Corp. 2018 Employee Stock Purchase Plan (the "2018 ESPP"). As a result of adoption of the 2019 ESPP, as defined below, by the stockholders, no further grants may be made under the 2018 ESPP Plan.

2019 Employee Stock Purchase Plan

On May 3, 2019, our stockholders approved the Tonix Pharmaceuticals Holdings Corp. 2019 Employee Stock Purchase Plan (the "2019 ESPP").

The 2019 ESPP allows eligible employees to purchase up to an aggregate of 15,000 shares of the Company's common stock. Under the 2019 ESPP, on the first day of each offering period, each eligible employee for that offering period has the option to enroll for that offering period, which allows the eligible employees to purchase shares of the Company's common stock at the end of the offering period. Each offering period under the 2019 ESPP is for six months, which can be modified from time-to-time. Subject to limitations, each participant will be permitted to purchase a number of shares determined by dividing the employee's accumulated payroll deductions for the offering period by the applicable purchase price, which is equal to 85 percent of the fair market value of our common stock at the beginning or end of each offering period, whichever is less. A participant must designate in his or her enrollment package the percentage (if any) of compensation to be deducted during that offering period for the purchase of stock under the 2019 ESPP, subject to the statutory limit under the Code. As of March 31, 2020, 11,041 shares were available for future sales under the 2019 ESPP. The 2019 ESPP was replaced by the 2020 Employee Stock Purchase Plan on May 1, 2020.

The 2019 ESPP and 2018 ESPP are considered compensatory plans with the related compensation cost expensed over the six-month offering period. For the quarters ended March 31, 2020 and 2019, $0 and $24,000, respectively were expensed. In January 2019, 177 shares that were purchased as of December 31, 2018, under the 2018 ESPP, were issued. Accordingly, during the quarter ended March 31, 2019, approximately $3,000 of employee payroll deductions accumulated at December 31, 2018, related to acquiring such shares, was transferred from accrued expenses to additional paid in capital. As of December 31, 2019, approximately $9,000 of employee payroll deductions, which were withheld since July 1, 2019, the commencement of the offering period ending December 31, 2019, were included in accrued expenses in the accompanying balance sheet. In January 2020, 1,578 shares that were purchased as of December 31, 2019, under the 2019 ESPP, were issued. Accordingly, during the quarter ended March 31, 2020, approximately $2,000 of employee payroll deductions accumulated at December 31, 2019, related to acquiring such shares, was transferred from accrued expenses to additional paid in capital. The remaining $7,000 was returned to the employees.

Commitments

Research and development contracts

We have entered into contracts with various contract research organizations with outstanding commitments aggregating approximately $13.8 million at March 31, 2020 for future work to be performed.

Operating leases

As of March 31, 2020, future minimum lease payments are as follows (in thousands):

Year Ending December 31,		
Remainder of 2020	$	241
2021		42
Included interest		(2)
	$	281

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations are based on our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities and expenses. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on historical experience and on assumptions 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.

We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements.

Research and Development. We outsource our research and development efforts and expense the related costs as incurred, including the cost of manufacturing product for testing, licensing fees and costs associated with planning and conducting clinical trials. The value ascribed to patents and other intellectual property acquired was expensed as research and development costs, as it related to particular research and development projects and had no alternative future uses.

We estimate our accrued expenses. Our clinical trial accrual process is designed to account for expenses resulting from our obligations under contracts with vendors, consultants and clinical research organizations and clinical site agreements in connection with conducting clinical trials. The financial terms of these contracts are subject to negotiations, which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided to us under such contracts. We account for trial expenses according to the progress of the trial as measured by participant progression and the timing of various aspects of the trial. We determine accrual estimates that take into account discussions with applicable personnel and outside service providers as to the progress or state of completion of trials, or the services completed. During the course of a clinical trial, we adjust our clinical expense recognition if actual results differ from our estimates. We make estimates of our accrued expenses as of each balance sheet date based on the facts and circumstances known to us at that time. Our clinical trial accruals and prepaid assets are dependent upon the timely and accurate reporting of contract research organizations and other third-party vendors.

Stock-Based Compensation. All stock-based payments to employees and to nonemployee directors for their services as directors consisted of grants of restricted stock and stock options, which are measured at fair value on the grant date and recognized in the condensed consolidated statements of operations as compensation expense over the relevant vesting period. In addition, for awards that vest immediately and are nonforfeitable, the measurement date is the date the award is issued.

*Accounting for sale of Class B Units in December 2018, November 2019 and February 2020 including beneficial conversion feature*In connection with the December 2018, November 2019 and February 2020 underwritten offerings, we issued warrants to purchase our common stock and convertible preferred stock. To account for the transaction, we calculated the relative fair value of each instrument issued in the financing. We also determined if a beneficial conversion feature existed. A beneficial conversion feature is defined as a nondetachable conversion feature that is in the money at the commitment date. A conversion feature is in the money if its conversion price is less than the current fair value of the share. For purposes of measuring a beneficial conversion feature, the effective conversion price should be based on the proceeds allocated to the convertible instrument.

We determined the fair value of the warrants to purchase common stock, using a Monte Carlo simulation, for the December 2018 and November 2019 financings, which is a statistical method used to generate a defined number of share price paths to develop a reasonable estimate of the range of future expected share prices. We determined the fair value of the warrants, using the black-scholes method, for the February 2020 warrants. Estimates and assumptions impacting the fair value measurement include the warrant's callable feature for the December 2018 offering, the number of shares for which the warrants are exercisable, remaining contractual term of the warrants, risk-free interest rate, expected dividend yield and expected volatility of the price of the underlying common shares. We estimate expected share volatility based on our historical volatility for a term equal to the contractual term of the warrants adjusted for a discount that a market participant would have taken when pricing the instrument. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve for time periods approximately equal to the remaining contractual term of the warrants. We estimated a 0% expected dividend yield based on the fact that we have never paid or declared dividends and do not intend to do so in the foreseeable future. In general, the assumptions used in calculating the fair value of the warrant represent management's best estimates, but the estimates involve inherent uncertainties and the application of management judgment. We determine the fair value of the convertible preferred stock utilizing the price of the common stock on the commitment date. We then allocated the relative fair value between the preferred shares and the warrants. Since the effective conversion price of the Preferred Stock is less than the fair value of the underlying common stock at the date of commitment, there is a beneficial conversion feature at the commitment date. Since the Preferred Stock has no stated maturity or redemption date and is immediately convertible at the option of the holder, the discount created by the beneficial conversion feature was charged to additional paid in capital as a "deemed dividend" and impacted earnings per share, reflected as an increase to loss to common stockholders.

Off-Balance Sheet Arrangements

Other than contractual obligations incurred in the normal course of business, we do not have any off-balance sheet financing arrangements or liabilities, guarantee contracts, retain or contingent interests in transferred assets or any obligation arising out of a material variable interest in an unconsolidated entity.

ITEM 3 – QUANTITA TIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not required under Regulation S-K for "smaller reporting companies."

ITEM 4 – CONTROLS A ND PROCEDURES

Evaluation of disclosure controls and procedures.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15 under the Securities Exchange Act of 1934 as of the end of the period covered by this Quarterly Report on Form 10-Q. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Based on our evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of March 31, 2020, our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in internal control over financial reporting.

There were no changes in our internal control over financial reporting that occurred during the quarter ended March 31, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II - OTHER INFORMATION

Item 1. Legal Proceedings

We are currently not a party to any material legal proceedings or claims.

Item 1A. Risk Factors

Not required under Regulation S-K for "smaller reporting companies."

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

None.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

None.

Item 5. Other Information

None.

Item 6. Exhibits

10.1	License Agreement, dated May 5, 2020, between Tonix Pharmaceuticals (Canada) Inc. and The Governors of the University of Alberta†
10.2	Research Service Agreement, May 6, 2020, between Tonix Pharmaceuticals (Canada) Inc. and The Governors of the University of Alberta†
31.01	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.02	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.01	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101 INS	XBRL Instance Document
101 SCH	XBRL Taxonomy Extension Schema Document
101 CAL	XBRL Taxonomy Calculation Linkbase Document
101 LAB	XBRL Taxonomy Labels Linkbase Document
101 PRE	XBRL Taxonomy Presentation Linkbase Document
101 DEF	XBRL Taxonomy Extension Definition Linkbase Document

† Certain portions of this exhibit, that are not material and would likely cause competitive harm to the registrant if publicly disclosed, have been redacted pursuant to Item 601(b)(10) of Regulation S-K.

SIGNA TURES

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.

TONIX PHARMACEUTICALS HOLDING CORP.

Date: May 12, 2020

By: /s/ SETH LEDERMAN
Seth Lederman
Chief Executive Officer (Principal Executive Officer)

Date: May 12, 2020

By: /s/ BRADLEY SAENGER
Bradley Saenger
Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)

Exhibit 10.1

CERTAIN IDENTIFIED INFORMATION HAS BEEN EXCLUDED FROM THIS EXHIBIT BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE REGISTRANT IF PUBLICLY DISCLOSED. THE OMISSIONS HAVE BEEN INDICATED BY "[***]."

LICENSE AGREEMENT

(this "Agreement")

BETWEEN

THE GOVERNORS OF THE UNIVERSITY OF ALBERTA,
A corporation under the Post-Secondary Learning Act, SA 2003, c. P-19.5,
having an address at TEC Edmonton, 4000 Enterprise Square
10230 Jasper Avenue, Edmonton, AB T5J 4P6 (the "University")

AND

TONIX PHARMACEUTICALS (CANADA) INC.
with a of business at 1176 Bishop Street, Montreal, QC, H3G 2E3 (the "Licensee")

WHEREAS:

A. The University has been engaged in research during the course of which it has invented, developed and/or acquired certain technology relating to research that was undertaken by the Inventor in the Department of Medical Microbiology and Immunology of the University;

B. The Licensee intends to use or cause to be used such technology as part of an initiative to develop antiviral vaccines, and as such the Licensee and University have entered into a Research Services Agreement #RES0050511 (as defined herein) concurrently with this Agreement.

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the premises and of the mutual covenants herein set forth, the parties hereto covenant and agree as follows:

ARTICLE 1 - DEFINITIONS

1.01 In this Agreement, unless a contrary intention appears, the following words and phrases are defined as follows:

(a) "Date of Commencement" is the date this Agreement will be deemed to have come into force on the Date of Commencement which shall be **April 27, 2020** and this Agreement shall be read and construed accordingly.
(b) "Field of Use" making, using and selling vaccines infringing the Patent Rights solely in [***] for the prevention of covid-19 and no other purposes. Vaccines infringing the Patent Rights made using other [***] are explicitly excluded from the Field of Use.
(c) "Inventors" means David Evans, PhD and Ryan Noyce, PhD.
(d) "Material" means physical samples of one or more [***].
(e) "Patent Rights" means US provisional patent application [***] and any corresponding patents or patent applications related thereto, including divisionals, continuations, extensions and reissue applications, term restorations and renewals.
(f) "Product(s)" means goods manufactured in connection with the use of all or some of the Technology.
(g) "Related Person(s)" has the meaning assigned to it in section 251 of the Income Tax Act,R.S.C. 1985, c. 1 (5thSupp.), as amended.
(h) “Research Services Agreement” means [***] effective April 27, 2020
(i) "Sublicensee" means an individual, entity or person that is expressly licensed by Licensee, pursuant to the rights granted in this Agreement to grant sublicenses under the Technology.
(j) "Technology" means Patent Rights and Materials.
(k) "University of Alberta Trademarks": means any mark, trademark, service mark, logo, insignia, seal, design or other symbol/device used by the University and associated with or referring to the University or any of its units or facilities.

ARTICLE 2 - PROPERTY RIGHTS IN AND TO THE TECHNOLOGY

2.1 The parties hereto hereby acknowledge and agree that the University owns any and all right, title, and interest in and to the Patent Rights.

2.2 The Licensee shall, at the request of the University, enter into such further agreements and execute any and all documents as may be required to ensure that ownership of the Patent Rights resides with the University.

2.3 From time to time and in any event no more than once every six months, the Licensee shall, at the request of the University, deliver in writing the details of any and all improvements, variations, updates, modifications, and enhancements relating to the Patent Rights.

ARTICLE 3 - GRANT OF LICENSE AND TERM

3.1 In consideration of the covenants on the part of the Licensee contained herein, the University hereby grants to the Licensee an exclusive, royalty free, worldwide license to use and sublicense the Patent Rights in the Field of Use (the "License").

3.2 Notwithstanding Clause 3.01 herein, the parties acknowledge and agree that the University may use the Technology

i. outside the Field of Use, in its sole discretion and without charge, in any manner whatsoever; and
ii. within the Field of Use for non-commercial research, scholarly publication, educational or other non-commercial use.

ARTICLE 4 – TERM

4.01 This Agreement shall expire at the expiration of the last patent issued included in the Patent Rights, unless earlier terminated pursuant to Article 15 herein.

ARTICLE 5 – ROYALTIES

{INTENTIONALLY OMITTED}

ARTICLE 6 - ROYALTY PAYMENTS AFTER TERMINATION OF THIS AGREEMENT

{INTENTIONALLY OMITTED}

ARTICLE 7 – SUBLICENSING

7.1 The Licensee shall have the right to grant sublicenses with respect to the Technology with the prior written consent of the University, not to be unreasonably withheld, upon the terms and conditions contained in this Agreement.

7.2 Any sublicense granted by the Licensee shall be personal to the Sublicensee and shall not be assignable without the prior written consent of the University, not to be unreasonably withheld. Such sublicenses shall contain covenants by the Sublicensee to observe and perform similar terms and conditions to those in this Agreement so far as the same may be capable of observance and performance by the Sublicensee, including, without limitation, the provisions for insurance, termination and accounting. The Licensee shall maintain an appropriate diligence program to ensure compliance of the terms and conditions by the Sublicensee.

7.3 The Licensee will not market, lease, or sublicense the Technology to any Related Person(s) without the express written consent of the University

7.4 The Licensee shall furnish the University with a copy of each sublicense granted within 30 days after execution of same.

ARTICLE 8 - ASSIGNMENT

8.1 Except as provided for in this Article 8 herein, the Licensee will not assign, transfer, mortgage, charge or otherwise dispose of any or all of the rights, duties, or obligations granted to it under this Agreement without the prior written consent of the University, not to be unreasonably withheld.

8.2 The University shall have the right to assign its rights, duties, and obligations under this Agreement to a company or society of which it is the sole shareholder, in the case of a company, or of which it controls the membership, in the case of a society. In the event of such an assignment, the Licensee will release, remise, and forever discharge the University from any and all obligations or covenants, provided however that such company or society, as the case may be, executes a written agreement which provides that such company or society shall assume all such obligations or covenants from the University and that the Licensee shall retain all rights granted to the Licensee pursuant to this Agreement.

ARTICLE 9 - PATENTS

9.1 The University will have responsibility for, but is under no obligation with respect to, the preparation, filing, prosecution and maintenance of the patents and patent applications included in Patent Rights at the University's sole cost.

9.2 In the event of the issuance of a patent, the Licensee shall have the right to become, and shall become the Licensee to the same, pursuant to the terms contained herein.

9.3 Licensee shall not file any patent applications claiming the Technology absent the express written consent of the University. In the event that Licensee determines to file a patent application that discloses Technology during the term of this Agreement, Licensee shall provide thirty (30) days written notice of such determination to University along with the relevant invention disclosure.

ARTICLE 10- PUBLICATION AND CONFIDENTIALITY

10.1 The parties hereto acknowledge and agree that they will treat the Technology as confidential and that they will not disclose or communicate or cause to be disclosed or communicated the Technology to any person or body corporate except as permitted under a sublicense or confidential disclosure agreement.

10.2 The Licensee covenants and agrees that it will initiate and maintain an appropriate internal program limiting the internal distribution of the Technology to its officers, employees, servants, and agents and to execute the appropriate non-disclosure agreements from any and all persons who may have access to the Technology.

10.3 Notwithstanding anything contained in this Agreement, the parties acknowledge that as the University is a public educational institution, it cannot be exposed to claims for damages that may result from a breach of this Article 10. The Licensee, therefore, covenants and agrees that the University shall not be liable to the Licensee for any loss or damage, whether direct, indirect, consequential, incidental, special or any other similar or like damages, that may arise or do arise from the breach of this Article 10 by the University or any of its officers, servants, agents, students, or faculty.

10.4 The University shall be permitted to present at international, national or regional symposia and professional meetings, and to publish in journals or other publications accounts of its research relating to the Technology provided that, for disclosures in the Field of Use, the Licensee shall have been furnished with copies of the disclosure proposed therefor at least thirty (30) days in advance of the planned submission or said presentation or publication and does not within fifteen (15) days after receipt of the proposed disclosure object to such presentation or publication. In the event objection is made, such disclosure shall not be made for a period of sixty (60) days after the date the Licensee has made said objection. As requested by Licensee, the University shall remove any Licensee Confidential Information from the disclosure. After the 60 day period has elapsed, the University shall be free to present and/or publish said disclosures.

ARTICLE 11 - ACCOUNTING RECORDS

11.01 The Licensee shall deliver an Annual Progress Report on the anniversary of the Date of Commencement in the form set out in Schedule "A".

ARTICLE 12 - PRODUCTION AND MARKETING

{INTENTIONALLY OMITTED}

ARTICLE 13 - INSURANCE

13.1 One month prior to the first sale of a Product, the Licensee will give notice to the University of the terms and amount of the public liability and product liability insurance which it has placed in respect of the same, which in no case shall be less than the insurance which a reasonable and prudent business person carrying on a similar line of business would acquire. This insurance shall be placed with a reputable and financially- secure insurance carrier; shall include the University, its Board of Governors, faculty, officers, employees, students and agents as additional insureds, and shall provide primary coverage with respect to the activities contemplated by this Agreement. Such policy shall include severability of interest and cross-liability clauses and shall provide that the policy shall not be cancelled or materially altered except upon at least 30 days' written notice to the University. The University shall have the right to require reasonable amendments to the terms or the amount of coverage contained in the policy. Failing the parties agreeing on the appropriate terms or the amount of coverage, then the matter shall be determined by arbitration as provided for herein. The Licensee shall provide the University with certificates of insurance evidencing such coverage at least seven (7) days before commencement of sales of any Product and the Licensee covenants not to sell any Product before such certificate is provided to and approved by the University.

13.2 The Licensee shall require that each Sublicensee shall procure and maintain, during the term of its sublicense or use of the Patent Rights, general liability insurance in reasonable amounts with a reputable and financially-secure insurance carrier. The Licensee shall use reasonable commercial efforts to ensure that any and all such policies of insurance required pursuant to this clause shall contain a waiver of subrogation against the University, its Board of Governors, faculty, officers, employees, students and agents.

ARTICLE 14 - DISCLAIMER OF WARRANTY

14.1 The University makes no representations or warranties, either express or implied, with respect to the Technology and specifically disclaims any implied warranty of merchantability or fitness for a particular purpose. The University shall in no event be liable for any loss of profits, be they direct, consequential, incidental, or special; or other similar or like damages arising from any defect, error, or failure to perform with respect to the Technology, even if the University has been advised of the possibility of such damages.

14.2 Nothing in this Agreement shall be construed as any of the following:

(a) a warranty or representation by the University as to the validity or scope of the License granted pursuant to this Agreement;

(b) a warranty or representation by the University that anything made, used, sold or otherwise disposed of under the License granted in this Agreement is or will be free from infringement of patents, copyrights, trade-marks, registered design or other intellectual property rights;

(c) an obligation by the University to bring or prosecute actions or suits against third parties for infringement of patents, copyrights, trade-marks, registered design or other intellectual property or contractual rights; or

(d) the conferring by the University of the right to use in advertising or publicity the University of Alberta Trade-marks;

14.3 In the event of an alleged infringement of the Patent Rights, the Licensee shall have the right to prosecute litigation designed to enjoin infringers of the Patent Rights with the consent of the University. The University agrees to co-operate to the extent of executing all necessary documents and to vest in the Licensee the right to institute any such suits so long as all the direct and indirect costs and expenses of bringing and conducting any such litigation or settlement shall be borne by the Licensee and in such event recoveries shall inure to the Licensee.

14.4 In the event of any complaint alleging infringement or violation of any patent or other proprietary rights is made against the Licensee with respect to the use of the Patent Rights or the manufacture, use, or sale of Products, the following procedure shall be adopted:

(a) the Licensee shall promptly notify the University upon receipt of any such complaint and shall keep the University fully informed of the actions and positions taken by the complainant and taken or proposed to be taken by the Licensee;

(b) subject to this section, all costs and expenses incurred by the Licensee in investigating, resisting, litigating and settling such a complaint, including the payment of any award of damages and/or costs to any third party, shall be borne by the Licensee;

(c) no decision or action concerning or governing any final disposition of the complaint shall be taken without full consultation with and by the University;
(d) the University may elect to participate formally in any litigation involving the complaint, to the extent that the court may permit but any additional expenses generated by such formal participation shall be borne entirely by the University (subject to the possibility of recovery of some or all of such additional expenses from the complainant); and
(e) if the complainant is willing to accept an offer of settlement and one of the parties to this Agreement is willing to make or accept such offer and the other is not, then the unwilling party shall conduct all further proceedings at its own expense and shall be responsible for the full amount of any damages, costs, accounting of profits, and/ or settlement costs in excess of those provided in such offer, but shall be entitled to retain unto itself the benefit of any litigated or settled result entailing a lower payment of costs, damages, accounting of profits, and/ or settlement costs than that provided in such offer.

ARTICLE 15 - TERMINATION

15.1 Subject to Clause 15.02, the University may, at its option and in its sole discretion, terminate this Agreement on the occurrence of any one or more of the following events forthwith delivering notice in writing to this effect to the Licensee:

(a) if any proceeding under the Bankruptcy and Insolvency Act of Canada or any other statute of similar purport is commenced by or against the Licensee which results in the Licensee being adjudged bankrupt (such proceedings shall not include a general proposal to creditors provided such proposal is not made under the provisions of the Bankruptcy Act of Canada or any other statute of similar purport);

(b) if any execution, sequestration, or any other process of any court becomes enforceable against the Licensee or if any such process is levied on the rights under this Agreement or upon any of the monies due to the University and is not released or satisfied by the Licensee within 30 days thereafter;

(c) if any resolution is passed or order made or other steps taken for the winding up, liquidation or other termination of the existence of the Licensee (excluding pursuant to a reorganization of Licensee);

(d) if the Licensee grants a security interest in the Patent Rights, other than the security interest granted to the University by this Agreement; or

(e) if the Licensee ceases to carry on its business.
(f) if the Licensee uses the Technology outside the Field of Use and fails to cure such breach within thirty (30) days after receipt of written notice thereof.

15.2 Other than as set out in Clause 15.01 herein, if either party is in default hereunder or fails to comply with the terms of this Agreement and

(a) if such default is reasonably curable within 90 days after receipt of notice of such default and such default or failure to comply is not cured within 90 days after receipt of written notice thereof, or

(b) if such default is not reasonably curable within 90 days after receipt of written notice thereof, and such default or failure to comply is not cured within such further reasonable period of time as may be necessary for the curing of such default or failure to comply, then the non-defaulting party shall have the right to terminate this Agreement by written notice to that effect.

15.3 If this Agreement is terminated by the University pursuant to Clause 15.01 or 15.02 herein, the Licensee shall immediately, at the Licensee's option, return or destroy and have any Sublicensee return or destroy all Materials. Licensee shall provide written certification of destruction of any destroyed Material if so requested by University.

ARTICLE 16 - INDEMNITY

16.1 The Licensee hereby indemnifies, holds harmless, and defends the University, its Board of Governors, students, officers, employees, and agents against any and all claims arising out of the exercise of any rights under this Agreement including, without limiting the generality of the foregoing, against any damages or losses, consequential or otherwise, arising from or out of the use of the Technology or Products licensed under this Agreement by the Licensee or its Sublicensees, their customers or end-users howsoever the same may arise.

16.2 The Licensee covenants and agrees that it has the expertise necessary to handle the Materials and practice the Patent Rights with care and without danger to the Licensee, its employees, its agents, or the public. The Licensee covenants that it will not accept delivery of the Materials until it has requested and received from the University all necessary information and advice to ensure that it is capable of handling the Materials in a safe and prudent manner in accordance with this Clause 16.02.

16.3 The Licensee covenants and agrees that it will comply with all laws, regulations, and ordinances, whether federal, provincial, municipal, or otherwise with respect to the Technology and/or this Agreement.

ARTICLE 17 - POWER OF ENTRY

17.01 The Licensee shall permit any duly authorized representative of the University during normal business hours and at the University's sole risk and expense to enter upon and into any premises of the Licensee for the purpose of inspecting the Products and the manner of their manufacture and generally of ascertaining whether or not the provisions of this Agreement have been, are being, or will be complied with by the Licensee.

ARTICLE 18 - INDEPENDENCE

18.01 Nothing contained herein shall be deemed or construed to create between the parties hereto a partnership or joint venture. This Agreement does not give either party the authority to act on behalf of the other party, or to commit the other party in any manner or cause whatsoever or to use the other party's name in any way not specifically authorized by this Agreement. Neither party shall be liable for any act, omission, representation, obligation, or debt of any other party even if informed of such act, omission, representation, obligation, or debt.

ARTICLE 19 - GOVERNING LAW AND ARBITRATION

19.1 This Agreement shall be governed by and construed in accordance with the laws of the Province of Alberta and the laws of Canada in force therein.

19.2 In the event of any dispute arising between the parties concerning this Agreement, its enforceability, or the interpretation thereof, the same shall be settled by a single arbitrator appointed pursuant to the provisions of the Arbitration Act of Alberta or any successor legislation then in force.

19.3 Clause 19.02 of this Article 19 shall not prevent a party hereto from applying to a court of competent jurisdiction for interim protection such as, by way of example, an interim injunction.

ARTICLE 20 - ENUREMENT

20.01 Subject to the limitations hereinbefore expressed, this Agreement shall enure to the benefit of and be binding upon the parties and their respective successors and permitted assigns.

ARTICLE 21 - HEADINGS

21.01 Marginal headings as used in this Agreement are for the convenience of reference only and do not form a part of this Agreement and are not to be used in the interpretation hereof.

ARTICLE 22 - SURVIVAL OF COVENANTS

22.01 The terms and provisions, covenants, and conditions contained in this Agreement that by the terms hereof require their performance by the parties hereto after the expiration or termination of this Agreement shall be and remain in force notwithstanding such expiration or other termination of this Agreement for any reason whatsoever.

ARTICLE 23 - NON-WAIVER

23.1 No condoning, excusing or overlooking by a party of any default, breach or non- observance by the other party at anytime in respect of any covenants, provisos, or conditions of this Agreement shall operate as a waiver of such party's rights under this Agreement in respect of any continuing or subsequent default, breach, or non-observance, so as to defeat in any way the rights of such party in respect of any such continuing or subsequent default, breach, or waiver shall be inferred from or implied by anything done or omitted by such party, save only an express waiver in writing.

23.2 No exercise of a specific right or remedy by any party precludes it from or prejudices it in exercising another right or pursuing another remedy or maintaining an action to which it may otherwise be entitled either at law or in equity.

ARTICLE 24 - SEVERABILITY

24.01 In the event that any part, section, clause, paragraph, or subparagraph of this Agreement shall be held to be indefinite, invalid, illegal, or otherwise unenforceable, the entire agreement shall not fail on account thereof and the balance of this Agreement shall continue in full force and effect.

ARTICLE 25 - NOTICES

25.01 All payments, reports, notices, and other documents that either of the parties hereto are required or may desire to deliver to the other party hereto may be delivered only by personal delivery or by registered or certified mail, facsimile, or electronic mail, all postage and other charges prepaid, at the address for such party set forth on the first page of this Agreement or at such other address as the party may hereinafter designate in writing to the others. Any notice personally delivered or sent by facsimile or electronic mail shall be deemed to have been given or received at the time of delivery. Any notice mailed as aforesaid shall be deemed to have been received on the expiration of five (5) days after it is posted, provided that if there shall be at the time of mailing or between the time of mailing and the actual receipt of the notice a mail strike, slow-down or labour dispute that might affect the delivery of the notice by mail, then the notice shall only be effected if actually received.

ARTICLE 26 - GENERAL

26.1 This Agreement sets forth the entire understanding between the parties and no modifications hereof shall be binding unless executed in writing by the parties hereto.

26.2 Time shall be of the essence of this Agreement.

26.3 Whenever the singular or masculine or neuter is used throughout this Agreement, the same shall be construed as meaning the plural or feminine or body corporate when the context of the parties hereto may require.

Remainder of page intentionally blank

IN WITNESS WHEREOF the parties hereto have hereunto executed this Agreement the day and year first written below.

SIGNED this 5th **day of May, 2020**.

SIGNED FOR AND ON BEHALF OF THE GOVERNORS OF THE UNIVERSITY OF ALBERTA by its duly authorized officers:

_____

Authorized Signatory

Name

Title

TONIX PHARMACEUTICALS (CANADA) INC.

_____

Authorized Signatory

Name: Regina Kiu

Title: Manager

INVENTOR ACKNOWLEDGEMENT

We, the inventors of the Technology, hereby acknowledge and agree that we have read and understood the Material Transfer and License Agreement between the Governors of the University of Alberta and Tonix Pharmaceuticals, Inc. on the Date of Commencement. I understand that "Technology" is defined in the License Agreement and all of my interest in and to such Technology has been assigned to the Governors of the University of Alberta. I also understand that I have been advised to seek independent accounting, tax and legal advice before signing this acknowledgement.

_____

David Evans, PhD

_____

Ryan Noyce, PhD

SCHEDULE “A”

ANNUAL PROGRESS REPORT

The information to be completed in the following pages will constitute the annual report required to be completed annually pursuant to the License Agreement. Any information or documents provided by the Licensee in this report will not be interpreted as affecting the express rights and obligations of the Licensee contained in the License Agreement. This report is in addition to the royalty payment report to accompany each royalty payment.

Date of Report: ___, 20 ___

Licensed Technology Title: _____
University Reference ID #: _____

Name of Licensee: _____

Jurisdiction of Incorporation: _____

Reporting Office Address: _____

Person Preparing this Report: _____

Contact Person for Licensee: _____

Telephone: _____ Email Address: _____

1. Please provide a brief report on the Licensee’s status of the development of the Technology, progress on creating a commercial Product, or subsequent marketing of the Product as appropriate.

_____

_____

_____

2. Has the Licensee secured any external (private or public) investment dollars during the past year to support the development or commercialization of the Technology or the sale of Products? If so, please report the amount of investment dollars and the currency.

Public investment dollars (e.g. grant funding) and source: $ _____ Private investment dollars: $ _____

3. Has the Licensee hired any new employees during the past year to support the development or commercialization of the Technology or the sale of Products? If so, please report the number of new employees.

Total number of new employees assisting with the development or commercialization of the Technology or Products: _____

4. Has the Licensee filed any patent application(s) for modifications or improvements relating to the original Technology or have any patents been granted for modifications or improvements relating to the original Technology? If so, please provide copies of the application(s) and/or issued patent(s).

_____

_____

_____

5. Has the Licensee become aware of any actual or potential third party infringement on the Patent Rights or related intellectual property? If so, please indicate below and contact the University.

6. Were any milestone or performance objectives due in the past year as set forth in the License Agreement? Were the milestones met? If not, please explain. Please outline the past year's accomplishments.

7. Are any milestones or performance objectives due in the coming year as set forth in the License Agreement? Please elaborate on whether or not any milestone or performance objective will be met and any proposed new timelines and contingency plans to meet the milestones.

8. If applicable, has the Licensee granted sublicenses to third parties, and if so, have copies of the sublicense agreement(s) been provided to the University? If not, please enclose a copy of each sublicense agreement.

9. Has the Licensee made any sales in the last twelve months? Yes ☐ No ☐

If so, please submit a completed Accounting statement as defined in the License Agreement, including the following.

a) Date of sales of Products:

10. If applicable, has Licensee initiated any clinical trials in the preceding year? Please provide name and location of trials, expected date of completion and a brief summary of any available results:

11. Does the Licensee and any applicable sublicensee have public liability insurance? If so, please attach a copy of the insurance policy/ies naming the University (Board of Governors of the University of Alberta) as insured as required by the Licensed Agreement if it has not already been provided to the University, if the copy has expired since it was provided to the University, or if there have been changes.

12. Please provide the Licensee's timeline and plans for any further development of the Technology.

13. Please provide the Licensee's estimate or projection of Gross Revenue for Products for the next twelve months by (a) the Licensee and (b) any sublicensees.

14. If private, does your company have any plans to become public in the next year?

_____Yes _____No

15. Is there any other information relating to this License Agreement or Technology that you think the University should be aware of? If so, please summarize below and/or contact the University directly.

Prepared by _____Telephone: _____

I, _____ (print name), _____(title), hereby certify the foregoing information to be true and correct.

_____ _____

Signature Date

Exhibit 10.2

CERTAIN IDENTIFIED INFORMATION HAS BEEN EXCLUDED FROM THIS EXHIBIT BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE REGISTRANT IF PUBLICLY DISCLOSED. THE OMISSIONS HAVE BEEN INDICATED BY "[***]."

RESEARCH SERVICE AGREEMENT

UNIVERSITY RES0050511

THIS AGREEMENT made the 6th day of May, 2020 ("Effective Date")

BETWEEN:

Tonix Pharmaceuticals (Canada) Inc.

(the "Client")

- and -

The Governors of the University of Alberta,

a corporation continued under the *Post-Secondary Learning Act* (Alberta) (the "University")

The Client and the University agree as follows:

1. **UNIVERSITY TO PERFORM SERVICE –** The University as an independent contractor, will perform the review, test or other academic or technical service outlined in Schedule A (the "Service") and will use reasonable efforts to complete such service eighteen (18) months from the effective date of this Agreement. The Service does not include the provision of improvements, additions or changes to any information, product or technique which is the subject of the Service, or the provision of solutions to problems identified in such information, product or techniques as a result of the provision of the Service. The University will perform such services in good faith.

2. **PRINCIPAL INVESTIGATOR** - The Service will be performed under the direction of a Principal Investigator (a "Principal Investigator"). If for any reason the then designated Principal Investigator is unable to complete the Service and a successor proposed by the University is not accepted by the Client, acting reasonably, the parties will take all reasonable steps to wind down the Service with a minimum of costs and in accordance with applicable provisions of Section 9.2. The initial Principal Investigator is Dr. David Evans of the University's Department of Medical Microbiology and Immunology.

3. **PAYMENT** - The Client will pay to the University the service fee provided in Schedule B (the "Service Fee") in accordance with the payment provisions set forth in Schedule B.

4. **CONFIDENTIALITY**

4.1 Each of the University and the Client may disclose information it considers confidential to the other to facilitate the Service. Each party will use all reasonable efforts to treat and keep confidential, and cause its officers, servants and employees to treat and keep confidential, any such information received by it from the other marked "Confidential" ("Confidential Information") and in no event will such efforts be less than the degree of care and discretion the recipient exercises in protecting its own confidential information. Any such information will be disclosed within the recipient's organization on a "need to know" basis. Except as otherwise permitted pursuant to Section 7 the University will use all reasonable efforts to treat and to cause all officers, servants and employees of the University to treat as strictly confidential all Service Results.

The obligation to keep confidential will however not apply to information which:

(a) was in recipient's possession before receipt from discloser;

(b) is or becomes a matter of public knowledge through no fault of recipient; or

(c) is rightfully received by recipient from a third party without a duty of confidentiality; or

(d) is disclosed by discloser to a third party without a duty of confidentiality on the third party.

Notwithstanding the provisions of this Section 4, a recipient may disclose Confidential Information if such disclosure:

(e) is required by law including but not limited to applicable statute, regulation or other enactment or by lawful order of a court or administrative tribunal having jurisdiction provided recipient provides discloser with immediate notice of such requirement upon recipient's receipt of notice of the same; or

(f) is made by recipient with discloser's prior written approval.

4.2 Each party shall also keep confidential and shall ensure its subcontractors, agents and their respective employees and students keep confidential any and all personal information disclosed directly or indirectly by the other party under this Agreement. Notwithstanding anything to the contrary, the parties shall not do anything with such personal information which may cause another party to be in violation of privacy legislation in force in Alberta or legislation that is substantially similar thereto.

5. SERVICE RESULTS

5.1 "Service Results" means the physical samples of one or more [***] which are developed and delivered to the Client pursuant to this Agreement. Sequence documentation, computer records and any other documentation related to the Services will be promptly provided to the Client but are explicitly excluded from the Service Results. Service Results do not include intellectual property relating to processes or methods developed by or utilized by the University in the provision of the Service, including but not limited to the University Background IP listed in Schedule "C" and the Methods described in Schedule "A". Subject to Section 6.2, the Client is acquiring no interest in, or right to use, any such intellectual property as a result of this Agreement.

5.2 The University will provide the Client with reports in accordance with the report schedule detailed in Schedule A. Each report will contain a summary of previously unreported Service Results developed in the provision of the Service.

6. **OWNERSHIP AND USE**

6.1 Subject to the rights of the University pursuant to this Section 6 and Section 7, all Service Results will be the property of the Client..

6.2 University grants to Client and Client's affiliate Tonix Pharma Holdings Limited ("Tonix Holdings") (each, a "Licensee") an exclusive, royalty-free license with the right to sublicense to University Patent Rights according to the terms and conditions of the license agreement attached hereto as Schedule "D" (the "License Agreement".

7. PUBLICATION OF SERVICE RESULTS - The University will be entitled, after giving the Client thirty (30) days' notice to review any proposed publication of Service Results, to publish, or to allow others to publish, the Service Results or any portion thereof with identifying the Client as the sponsor and ownership of the Services Results. Should the Client at any time publish the Service Results in its entirety, the University and all investigators of the University designated by it will be appropriately identified in such publication.

8. **NO REPRESENTATIONS AND WARRANTIES ON SERVICE RESULTS - The University makes no representations or warranties, either express or implied, as to any matter including, without limitation, the existence or non-existence of competing technology, the condition, quality or freedom from error of the Services and Service Results or any part thereof, or its merchantability or fitness for any particular purpose and all warranties and conditions, expressed or implied, statutory or otherwise, are hereby disclaimed. The Client and Tonix Holdings assumes the risk of defects or inaccuracies in the Services and Service Results supplied by the University and the University will have no liability, consequential, special, punitive or otherwise which might arise from the use by the Client and Tonix Holdings of the Services or Service Results or any other materials delivered hereunder.**

9. TERMINATION

9.1 In the event that either party fails to remedy any breach or default on its part pursuant to this Agreement within thirty (30) days of notice from the other to that effect, the party not in default may upon written notice to the party in default terminate the Service and any further right of the party in default under this Agreement. Any such termination is without prejudice to or limitation of any other right or remedies of the party not in default including the right to collect sums due to it at the time of such termination. Upon such termination, the parties will wind down the Service with a minimum of costs. In these circumstances, the Client will pay for the portion of the Services completed and the University's committed and uncancellable costs of the Service, the total of which in no event will exceed the Service Fee.

9.2 The Service may be terminated by the Client on thirty (30) days' notice to the University in which event the parties will take all reasonable steps to wind down the Service with a minimum of costs. In these circumstances, or if the Service is wound down as provided in Section 2, the Client will pay for the portion of the Services completed and the University's committed and uncancellable costs of the Service, the total of which in no event will exceed the Service Fee.

9.3 In the event the University's performance is delayed or prevented by any event beyond the University's control, including, without limitation, destruction or damage to a facility, disease, war, terrorism, insurrection, civil strife, riots, labour dispute or strike, government action, or power failure, the University will not be breach of this Agreement because of that delay or failure in performance.

10. INDEMNIFICATION - The Client and Tonix Holdings each jointly and severally will defend, indemnify and hold harmless the University (including its officers, employees, students and agents) from all liabilities, demands, damages, expenses and losses (collectively "**Losses**") arising out of the use by the Client and Tonix Holdings or by any party acting on behalf of or under authorization from the Client and Tonix Holdings of the Service Results or out of any use, sale or other disposition by the Client and Tonix Holdings, or by any party acting on behalf of or under authorization from the Client and Tonix Holdings of any product or technique which is the subject of the Service or is created or modified based on the Service Results, except for Losses arising from the University's negligence, willful misconduct or breach of this Agreement.

11. LIMITATION OF LIABILITY - In no event will the University be liable to the Client and Tonix Holdings for all breaches of contract or for torts or otherwise arising from or in relation to this Agreement or the matters or activities dealt with herein in excess of the aggregate amounts paid by the Client and Tonix Holdings to the University pursuant hereto except in connection with the University's gross negligence or wilful misconduct. The University shall not be liable to the Client and Tonix Holdings for any general, indirect or consequential damages or any economic losses of any kind, regardless of whether the liability to which such damages relate arises in contract, tort or otherwise in law except in connection with the University's gross negligence or willful misconduct. Neither party shall be liable for losses or damages resulting from the non-performance of its obligations under this Agreement for any reason or event (other than lack of finances) beyond the reasonable control of the party relying on such reason or event

12. **USE OF UNIVERSITY NAME –** Except as contemplated in Section 7 hereto, the Client will not utilize the name of the University or any identifying marks of the University, the Principal Investigator, any University employees or any University students in conjunction with the Client's use or exploitation of the Service Results, including without limitation, the development, production or marketing of products.

13. **FOIPP** – The Client acknowledges that all records prepared by the University in the performance of this Agreement are in the custody and control of the University. The University is or will be subject to the access and privacy provisions of the *Freedom of Information and Protection of Privacy Act* (Alberta) which creates a right of access to records under the custody and control of public bodies subject to specific, limited exceptions. Except as required by law or as otherwise permitted pursuant to the terms of this Agreement, neither the University nor the Client will disclose the contents of this Agreement or the foregoing records other than for the purpose of implementation or enforcement of the same or for a general statement on the parties to this Agreement, the amount being paid for the Service and the general nature of the Service, either party being entitled to publish that information.

14. **NOTICES** - All notices, requests, directions or other communications required or permitted herein will be in writing and will be delivered to the parties hereto respectively as follows:

The Client:

Tonix Pharmaceuticals (Canada) Inc.

1176 Bishop Street Montreal, QC, H3G 2E3 Canada

Phone: (514) 657-2335

Attention Regina Kiu

Email: Regina.Kiu@tonixpharma.com

With a copy to (which shall not constitute notice):

Torys LLP

79 Wellington Street West 30th Floor

Box 270, TD South Tower Toronto, ON M5K 1N2 Canada

Attention: Cheryl V. Reicin Phone: (416) 865-0040

Email: creicin@torys.com

The University:

For Contract/Finance Matters:

Research Services Office 222 Campus Tower University of Alberta Edmonton, Alberta,
T6G 2E1

Attention: Julaine Herst, Assistant Director – Contracts & Agreements

Phone: (780) 492-7885

Email: Julaine.herst@ualberta.ca

For Service Matters:

Dr. David Evans

Department of Medical Microbiology and Immunology Faculty of Medicine & Dentistry

University of Alberta Edmonton, Alberta Phone: (780) 492-2109

Email: devans@ualberta.ca

In order for any notices, requests, directions, or other communications to be effective, the same will either be delivered in person or by overnight courier or email to the party for whom it is intended at the above-mentioned address and will be deemed to have been received, at the time of delivery. Any notice given by email must be promptly followed by a copy of such notice by overnight courier. The address or fax number of either party may be changed by notice in the manner set out in this Section.

15. GOVERNING LAW - This Agreement will be governed by and interpreted in accordance with the laws in force in the Province of Alberta and the parties expressly attorn to the exclusive jurisdiction of the courts of Alberta for enforcement thereof.

16. ENTIRE AGREEMENT - This Agreement constitutes the entire understanding between the parties relating to the Services. There are no agreements, representations or warranties except as set forth in this Agreement. No modification or amendment to this Agreement shall be binding unless executed in writing by the parties.

17. ASSIGNMENT, SUBCONTRACTING AND AMENDMENT

17.1 No part of this Agreement may be assigned or subcontracted by any party without the written consent of the other party signed by authorized representatives of each party; provided that the Client can assign or subcontract this to any of its affiliates.

17.2 No amendment or variation of this Agreement will operate to change or vary the terms, obligations, or conditions hereof except upon mutual agreement by both parties signed by authorized representatives of each party.

18. NO IMPLIED WAIVER - The failure of either party at any time to require performance of any provision of this Agreement shall in no way affect the right to require such performance at any time thereafter, nor shall the waiver of either party of a breach of any provision constitute a waiver of any succeeding breach of the same or any other provision.

19. FORCE MAJEURE - If the performance by either party of any of its obligations under this Agreement (except a payment obligation) is delayed or prevented by circumstances beyond its reasonable control, including without limitation acts of God, war, terrorism, labour disputes, pandemics, epidemics, or governmental action, that party will not be in breach of this Agreement because of that delay or failure in performance.

20. RELATIONSHIP OF PARTIES – The University and the Client are independent contracting parties and nothing in this Agreement shall make either party the agent or legal representative of the other for any purpose whatsoever, nor does it grant either party any authority to assume or to create any obligation on behalf of or in the name of the other.

21. **SEVERABILITY** - If any term of this Agreement is invalid or unenforceable under any statute, regulation, ordinance, executive order or other rule of law, such term shall be deemed reformed or deleted, but only to the extent necessary to comply with such statute, regulation, ordinance, order or rule, and the remaining provisions of this Agreement shall remain in full force and effect.

22. **EXECUTION OF AGREEMENT** – This Agreement may be executed in counterparts that together shall be deemed to constitute one valid and binding Agreement. The counterparts of this agreement may be signed and delivered electronically, and such counterparts will have the same effect as if original copies had been delivered.

23. **INCORPORATION OF SCHEDULES** - The following attached Schedules are incorporated in this Agreement and are deemed to be part of this Agreement and any references to this Agreement shall mean this Agreement including such Schedules:

Schedule "A" Service Description (Scope of Work) and Budget Schedule "B" Payment

IN WITNESS WHEREOF the duly authorized officers of the parties have executed this Agreement on the date first above written.

The Governors of the University of Alberta Tonix Pharmaceuticals (Canada) Inc.:

Per:

Research Services Office

Per:

Per:

SCHEDULE A

THE SERVICE

Creation of [***]

Prepared by:

Ryan Noyce, PhD

David Evans, PhD

A proposal prepared for:

Tonix Pharmaceuticals Holding Corporation

CONFIDENTIAL

[***]

SCHEDULE B

PAYMENT

B.1 ***Service Fee*** -The Client will pay to the University for the University's performance of the Service, a Service Fee of $ USD [***] (the "Contract Amount"). The total service fee includes both total direct costs of service plus 20% indirect costs. The Contract Amount shall not be adjusted as a result of any difference between budgeted costs and actual costs.

The University is not required to provide the Client with a Financial Statement of Revenue and Expenditures.

B.2 ***Invoicing*** – The Client shall pay (i) [***] of the Contract Amount upon full execution of this Service Agreement (ii) the remaining [***] of the Contract Amount is due thirty (30) days after the Client's receipt of the invoice and deliverables.

Interest will be paid on overdue amounts at a rate of prime rate plus 2% based on the noon rate of the Bank of Canada as the date the payment first becomes due as specified on the invoice. The Service Fee is exclusive of GST which, if applicable, will be paid by the Client at the same time as the payment of the Service Fee on which the same is based.

INVOICE TO BE SENT TO:

Tonix Pharmaceuticals (Canada) Inc. 1176 Bishop Street

Montreal, QC, H3G 2E3 Canada

Phone: (514) 657-2335

Attention: Regina Kiu, Manager

CHEQUES SHOULD BE MADE PAYABLE TO: The Governors of the University of Alberta
PLEASE REFERENCE RESEARCHER'S NAME, RES0050511 AND FORWARD TO THE FOLLOWING ADDRESS:

Financial Services University of Alberta

3rd Floor, Administration Building Edmonton, Alberta

Canada T6G 2M7

ATTENTION: RESEARCH RECEIVABLES

Schedule "C"

University Background IP: US provisional patent application [***] and any corresponding patents or patent applications related thereto, including divisionals, continuations, extensions and reissue applications, term restorations and renewals.

SCHEDULE “D”

License Agreement

EXHIBIT 31.01

CERTIFICATION

I, Seth Lederman, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Tonix Pharmaceuticals Holding Corp.;

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

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

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

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

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

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

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

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

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonable 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 controls over financial reporting.

Date: May 12, 2020

/s/ SETH LEDERMAN
Seth Lederman
Chief Executive Officer

EXHIBIT 31.02

CERTIFICATION

I, Bradley Saenger, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Tonix Pharmaceuticals Holding Corp.;

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

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

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

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

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

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

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

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

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonable 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 controls over financial reporting.

Date: May 12, 2020

/s/ BRADLEY SAENGER
Bradley Saenger
Chief Financial Officer

EXHIBIT 32.01

CERTIFICATIONS OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Seth Lederman, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Quarterly Report of Tonix Pharmaceuticals Holding Corp. on Form 10-Q for the fiscal quarter ended March 31, 2020 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in this Quarterly Report on Form 10-Q fairly presents in all material respects the financial condition and results of operations of Tonix Pharmaceuticals Holding Corp.

By: /s/ SETH LEDERMAN
Name: Seth Lederman
Title: *Chief Executive Officer*

Date: May 12, 2020

I, Bradley Saenger, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Quarterly Report of Tonix Pharmaceuticals Holding Corp. on Form 10-Q for the fiscal quarter ended March 31, 2020 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in this Quarterly Report on Form 10-Q fairly presents in all material respects the financial condition and results of operations of Tonix Pharmaceuticals Holding Corp.

By: /s/ BRADLEY SAENGER
Name: Bradley Saenger
Title: *Chief Financial Officer*

Date: May 12, 2020