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

FORM 10-Q

(Mark One)

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

For the Quarterly Period Ended June 30, 2021

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.)

26 Main Street, Suite 101
Chatham, New Jersey 07928

(Address of principal executive offices) (zip code)

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

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

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

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

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

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

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

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

As of August 9, 2021, there were 357,521,582 shares of registrant's common stock outstanding.

TONIX PHARMACEUTICALS HOLDING CORP.

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PART I – FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

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

	June 30, 2021 (unaudited)	December 31, 2020
ASSETS		
Current assets:		
Cash and cash equivalents	$ 165,719	$ 77,068
Prepaid expenses and other	11,550	10,921
Total current assets	177,269	87,989
Property and equipment, net	10,492	8,571
Right-of-use assets, net	1,018	1,258
Security deposit	26	5
Restricted cash	240	240
Intangible asset	120	120
Total assets	$ 189,165	$ 98,183
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 3,406	$ 4,598
Accrued expenses and other current liabilities	4,211	4,626
Lease liability, current	464	595
Total current liabilities	8,081	9,819
Lease liability, net of current portion	591	716
Total liabilities	8,672	10,535
Commitments (See Note 16)		
Stockholders' equity:		
Preferred stock, $0.001 par value; 5,000,000 shares authorized Series B Convertible Preferred stock, $0.001 par value; 5,313 shares designated as of June 30, 2021 and December 31, 2020, issued and outstanding - None Series A Convertible Preferred stock, $0.001 par value; 7,938 shares designated as of June 30, 2021 and December 31, 2020, issued and outstanding - None	—	—
Common stock, $0.001 par value; 800,000,000 and 400,000,000 shares authorized as of June 30, 2021 and December 31, 2020, respectively; 346,358,451 and 206,008,683 shares issued and outstanding as of June 30, 2021 and December 31, 2020, respectively, and 116,505 and 54,447 shares to be issued as of June 30, 2021 and December 31, 2020, respectively	346	206
Additional paid in capital	491,957	355,037
Accumulated deficit	(311,739)	(267,533)
Accumulated other comprehensive loss	(71)	(62)
Total stockholders' equity	180,493	87,648
Total liabilities and stockholders' equity	$ 189,165	$ 98,183

See the accompanying notes to the condensed consolidated financial statements

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	**2020**	**2021**	**2020**
COSTS AND EXPENSES:				
Research and development	$ 18,133	$ 10,571	$ 33,460	$ 15,247
General and administrative	5,429	3,621	10,838	6,242
	23,562	14,192	44,298	21,489
Operating Loss	(23,562)	(14,192)	(44,298)	(21,489)
Interest and other income, net	9	13	92	37
Net loss	(23,553)	(14,179)	(44,206)	(21,452)
Warrant deemed dividend	—	—	—	451
Preferred stock deemed dividend	—	—	—	1,260
Net loss available to common stockholders	$ (23,553)	$ (14,179)	$ (44,206)	$ (23,163)
Net loss per common share, basic and diluted	$ (0.07)	$ (0.23)	$ (0.14)	$ (0.54)
Weighted average common shares outstanding, basic and diluted	331,281,242	62,391,006	310,807,619	43,209,988

See the accompanying notes to the condensed consolidated financial statements

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	**2020**	**2021**	**2020**
Net loss	$ (23,553)	$ (14,179)	$ (44,206)	$ (21,452)
Other comprehensive loss:				
Foreign currency translation loss	(8)	(9)	(9)	(23)
Comprehensive loss	$ (23,561)	$ (14,188)	$ (44,215)	$ (21,475)

See the accompanying notes to the condensed consolidated financial statements

TONIX PHARMACEUTICALS HOLDING CORP.
CONDENSED CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY
(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, 2020	—	$ —	206,008,683	$ 206	$ 355,037	$ (62)	$ (267,533)	$ 87,648
Issuance of common stock in exchange for exercise of warrants in March 2021 ($0.57 per share)	—	—	3,400	—	2	—	—	2
Issuance of common stock in January 2021 ($0.80 per share), net of transactional expenses of $3,096	—	—	50,000,000	50	36,854	—	—	36,904
Issuance of common stock in February 2021 ($1.20 per share), net of transactional expenses of $5,002	—	—	58,333,334	58	64,939	—	—	64,997
Issuance of common stock in January 2021 under At-the-market offering, net of transactional expenses of $230	—	—	9,517,867	10	6,769	—	—	6,779
Employee stock purchase plan	—	—	54,447	—	28	—	—	28
Stock-based compensation	—	—	—	—	1,212	—	—	1,212
Foreign currency transaction gain	—	—	—	—	—	(1)	—	(1)
Net loss	—	—	—	—	—	—	(20,653)	(20,653)
Balance, March 31, 2021	—	—	323,917,731	324	464,841	(63)	(288,186)	176,916
Issuance of common stock in April and June 2021 under At-the-market offering, net of transactional expenses of $612	—	—	15,658,426	16	18,686	—	—	18,702
Issuance of commitment shares under 2021 Purchase Agreement	—	—	1,280,000	—	—	—	—	—
Issuance of common stock under 2021 Purchase Agreement	—	—	2,750,000	3	3,344	—	—	3,347
Issuance of common stock in the acquisition of the OyaGen license	—	—	2,752,294	3	2,997	—	—	3,000
Stock-based compensation	—	—	—	—	2,089	—	—	2,089
Foreign currency transaction gain	—	—	—	—	—	(8)	—	(8)
Net loss	—	—	—	—	—	—	(23,553)	(23,553)
Balance, June 30, 2021	—	$ —	346,358,451	$ 346	$ 491,957	$ (71)	$ (311,739)	$ 180,493

See the accompanying notes to the condensed consolidated financial statements

TONIX PHARMACEUTICALS HOLDING CORP.
CONDENSED CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY
(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
Issuance of common stock under 2019 Purchase Agreement			464,471	1	277			278
Issuance of common stock in May and June 2020 under At-the-market offering, net of transaction expenses of $1,131	—	—	52,986,301	53	34,089	—	—	34,142
Issuance of common stock in the acquisition of Trigemina assets	—	—	2,000,000	2	1,358	—	—	1,360
Stock-based compensation	—	—	—	—	733	—	—	733
Foreign currency transaction gain	—	—	—	—	—	(9)	—	(9)
Net loss	—	—	—	—	—	—	(14,179)	(14,179)
Balance, June 30, 2020	—	$ —	104,803,906	$ 105	$ 292,058	$ (69)	$ (238,522)	$ 53,572

See the accompanying notes to the condensed consolidated financial statements

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

	Six Months Ended June 30,	
	2021	**2020**
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (44,206)	$ (21,452)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	13	12
Common stock issued to acquire in-process research and development	3,000	1,360
Stock-based compensation	3,301	1,093
Changes in operating assets and liabilities:		
Prepaid expenses and other	(651)	74
Accounts payable	(1,191)	118
Lease liabilities and ROU asset, net	(17)	(2)
Accrued expenses and other current liabilities	(415)	(570)
Net cash used in operating activities	(40,166)	(19,367)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchase of property and equipment	(1,934)	(14)
Net cash used in investing activities	(1,934)	(14)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from exercise of warrants	2	7,474
Proceeds from ESPP	28	2
Proceeds, net of $0 and $711 expenses, from sale of preferred stock	—	4,602
Proceeds, net of $8,940 and $2,644 expenses, from sale of common stock and warrants	130,729	51,099
Net cash provided by financing activities	130,759	63,177
Effect of currency rate change on cash	(8)	(23)
Net increase in cash, cash equivalents and restricted cash	88,651	43,773
Cash, cash equivalents and restricted cash beginning of the period	77,308	11,349
Cash, cash equivalents and restricted cash end of period	$ 165,959	$ 55,122
Supplemental disclosures of cash flow information:		
Non-cash financing and investing activities:		
Warrants deemed dividend	$ —	$ 451
Series B Convertible preferred stock deemed dividend	$ —	$ 1,260

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, licensing, acquiring and developing small molecules and biologics to treat and prevent human disease and alleviate suffering. 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., Jenner LLC, 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 June 30, 2021, the Company had working capital of approximately $169.2 million. At June 30, 2021, the Company had an accumulated deficit of approximately $311.7 million. The Company held unrestricted cash and cash equivalents of approximately $165.7 million as of June 30, 2021.

The Company believes that its cash resources at June 30, 2021, and the gross proceeds of approximately $8.4 million, that it raised from equity offerings subsequent to the end of the second quarter of 2021 (See Note 12), will meet its operating and capital expenditure requirements through June 30, 2022, but not beyond.

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 and private financing and 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 its research and development activities, or other operations and potentially delay product development in an effort to provide sufficient funds to continue 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.

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, 2020 contained herein has been derived from audited financial statements.

Operating results for the three and six months ended June 30, 2021 are not necessarily indicative of results that may be expected for the year ending December 31, 2021. 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, 2020 included in the Company's Annual Report on Form 10-K, filed with the Securities and Exchange Commission ("SEC") on March 15, 2021.

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 any of its product candidates 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 candidate 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.

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.

Use of estimates

The preparation of financial statements in accordance with Generally Accepted Accounting Principles ("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 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, 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 June 30, 2021 and December 31, 2020, cash equivalents, which consisted of money market funds, amounted to $100.4 million and $40.4 million, respectively. Restricted cash at both June 30, 2021 and December 31, 2020 of approximately $240,000 collateralizes a letter of credit issued in connection with the lease of office space in Chatham, New Jersey and New York, New York (see Note 15).

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 flows:

	June 30, 2021	December 31, 2020
	(in thousands)	
Cash and cash equivalents	$ 165,719	$ 77,068
Restricted cash	240	240
Total	$ 165,959	$ 77,308

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 20 years for buildings, three years for computer assets, five years for furniture and all other equipment and term of lease for leasehold improvements. Depreciation and amortization expense for the three and six months ended June 30, 2021, was $7,000 and $13,000, respectively, and $6,000 and $12,000, respectively, for the three and six months ended June 30, 2020. All property and equipment are 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 their carrying amount may be less than fair value. As of June 30, 2021, the Company believed that no impairment existed.

Leases

The Company determines if an arrangement is, or contains, 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 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 nonemployees for their services, including grants of restricted stock units ("RSUs"), and stock options, are measured at fair value on the grant date and recognized in the consolidated statements of operations as compensation or other expense over the requisite service period. The Company accounts for share-based awards in accordance with the provisions of the Accounting Standards Codification ("ASC") 718, Compensation – Stock Compensation.

Foreign Currency Translation

Operations of the Company's Canadian subsidiary, Tonix Pharmaceuticals (Canada), Inc., 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 condensed 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 condensed 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 June 30, 2021, 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.

Per Share Data

The computation of basic and diluted loss per share for the quarters ended June 30, 2021 and 2020 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 earnings per share ("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 and six months ended June 30, 2021, and 2020, as results of operations were a loss for the periods.

Potentially dilutive securities excluded from the computation of basic and diluted net loss per share, as of June 30, 2021 and 2020, are as follows:

	2021	2020
Warrants to purchase common stock	644,906	5,184,210
Options to purchase common stock	24,972,546	10,209,286
Totals	25,617,452	15,393,496

NOTE 3 – PROPERTY AND EQUIPMENT, NET

Property and equipment, net consisted of the following (in thousands):

	June 30 2021	December 31 2020
	(in thousands)	
Land	$ 5,713	$ 5,713
Construction in progress	4,700	2,800
Office furniture and equipment	419	385
Leasehold improvements	23	23
	10,855	8,921
Less: Accumulated depreciation and amortization	(363)	(350)
	$ 10,492	$ 8,571

On September 28, 2020, the Company completed the purchase of its 4.0 million square foot facility in Massachusetts for $4,000,000, to house its new Advanced Development Center for the development and manufacturing of vaccines. Of the total purchase price, $1.2 million was allocated to the value of land acquired, and $2.8 million was allocated to construction in progress, as the building was not ready for its intended use. As of June 30, 2021, the asset has not been placed in service.

On December 23, 2020, the Company completed the purchase of its approximately 44-acre site in Hamilton, Montana for $4.4 million, for the construction of a vaccine development and commercial scale manufacturing facility. As of June 30, 2021, the asset has not been placed in service.

NOTE 4 – 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 June 30, 2021, and December 31, 2020, the Company used Level 1 quoted prices in active markets to value cash equivalents of $100.4 million and $40.4 million, respectively. The Company did not have any Level 2 or Level 3 assets or liabilities as of both June 30, 2021 and December 31, 2020.

NOTE 5 – STOCKHOLDERS' EQUITY

On March 26, 2021, the Company filed an amendment to its articles of incorporation, as amended, to increase the number of shares of common stock authorized from 400,000,000 to 800,000,000.

NOTE 6 – ASSET PURCHASE AGREEMENT WITH KATANA

On December 22, 2020, the Company entered into an asset purchase agreement (the "Katana Asset Purchase Agreement") with Katana Pharmaceuticals, Inc. ("Katana") pursuant to which Tonix acquired Katana assets related to insulin resistance and related syndromes, including obesity (the "Katana Assets"). In connection with the acquisition of the Katana Assets, Tonix assumed Katana's rights and obligations under that certain Exclusive License Agreement by and between Katana and The University of Geneva ("Geneva") (the "Geneva License "Agreement") pursuant to an Assignment and Assumption Agreement with Geneva ("Geneva Assignment and Assumption Agreement"), dated December 22, 2020. As consideration for entering into the Katana Asset Purchase Agreement, Tonix paid $0.7 million to Katana. The costs associated with the cash payments were recorded to research and development expenses in the statement of operations for the year ended December 31, 2020. Because the Katana intellectual property was acquired prior to FDA approval, the cash consideration totaling $0.7 million, was expensed as research and development costs since there is no alternative future use and the acquired intellectual property does not constitute a business.

Pursuant to the terms of the Geneva Assignment and Assumption Agreement, Geneva has granted to Tonix an exclusive license, with the right to sublicense, certain patents related to the Katana Assets. Tonix is obligated to use commercially reasonable efforts to diligently develop, manufacture, and sell products claimed or covered by the patent and will use commercially reasonable efforts to diligently develop markets for such products. The Geneva 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 Geneva.

As of June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement.

NOTE 7 – ASSET PURCHASE AGREEMENT WITH TRIGEMINA

On June 11, 2020, the Company entered into an asset purchase agreement (the "Trigemina Asset Purchase Agreement") with Trigemina, Inc. ("Trigemina") and certain shareholders named therein (the "Executive Shareholders") pursuant to which Tonix acquired Trigemina assets related to migraine and pain treatment technologies (the "Trigemina Assets"). In connection with the acquisition of the Trigemina Assets, Tonix assumed Trigemina's rights and obligations under that certain Amended and Restated Exclusive License Agreement, dated November 30, 2007, as amended, by and between Trigemina and The Board of Trustees of the Leland Stanford Junior University ("Stanford") (the "Stanford License "Agreement") pursuant to an Assignment and Assumption Agreement with Stanford ("Assignment and Assumption Agreement"), dated June 11, 2020. As consideration for entering into the Asset Purchase Agreement, Tonix paid $824,759 to Trigemina and issued to Trigemina 2,000,000 shares of the Company's common stock, valued at $0.68 per share, based on the closing stock price on June 11, 2020, and paid Stanford $250,241 pursuant to the terms of the Assignment and Assumption Agreement. The common stock is unregistered and subject to a 12-month lock-up and a Shareholder Voting Agreement, dated June 11, 2020, pursuant to which Trigemina and the Executive Shareholders have agreed to vote the common stock on any matter put to a vote of the shareholders of the Company in accordance with management's recommendations. Both the costs associated with the cash payments and share issuance, totaling $2.4 million, were recorded to research and development expenses in the statement of operations for the year ended December 31, 2020. Because the Trigemina intellectual property was acquired prior to FDA approval, the cash and stock consideration, was expensed as research and development costs since there is no alternative future use and the acquired intellectual property does not constitute a business.

Pursuant to the terms of the Assignment and Assumption Agreement, Stanford has granted to Tonix an exclusive license, with the right to sublicense, certain patents related to the Trigemina Assets. Stanford has reserved for itself the right to practice under the patents for academic research and educational purposes. Tonix is obligated to use commercially reasonable efforts to diligently develop, manufacture, and sell products claimed or covered by the patent and will use commercially reasonable efforts to diligently develop markets for such products. The Trigemina 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 Stanford.

As of June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement.

NOTE 8 – 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 paid $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 June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement.

NOTE 9 – LICENSE AGREEMENT WITH OYAGEN

On April 14, 2021, the Company and OyaGen, Inc. ("OyaGen") entered into an exclusive License Agreement (the "OyaGen License Agreement") pursuant to which OyaGen granted to Tonix an exclusive license to certain patents and technical information related to an antiviral inhibitor of SARS-CoV-2, sangivamycin, and to develop and commercialize products thereunder, and to acquire rights to any technology based thereon for the prevention or treatment of Covid-19 developed by OyaGen during the term of the License Agreement.

As consideration for entering into the License Agreement, Tonix agreed to pay a low-seven digit license fee to OyaGen, and agreed to issue to OyaGen and an affiliated entity an aggregate of 2,752,294 shares of the Company's common stock, which are unregistered and subject to a six-month lock-up and a voting agreement, pursuant to which OyaGen and the affiliated entity have agreed to vote the common stock on any matter put to a vote of the shareholders of the Company in accordance with management's recommendations. The shares were valued at $3.0 million, which was recorded as research and development expense. The OyaGen License also provides for single-digit royalties and contingent milestone payments.

As of June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement

NOTE 10 – LICENSE AGREEMENT WITH INSERM

On February 11, 2021, the Company entered into a license agreement (the "Inserm License Agreement") pursuant to which it licensed technology using oxytocin-based therapeutics for the treatment of Prader-Willi syndrome and non-organic failure to thrive disease from Inserm (the French National Institute of Health and Medical Research), Aix-Marseille Université and Centre Hospitalier Universitaire of Toulouse. The Inserm License Agreement provides for the payment of annual fees and milestone payments upon the occurrence of specified sales milestones totaling approximately $0.4 million, as well royalties on net sales of products based on the licensed technology, and assignment/transfer and sublicense royalties.

As of June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement

NOTE 11 – 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 reserved for itself the right to practice the TFF2 Technology for academic research and educational purposes.

The Company paid a five-digit license fee to Columbia as consideration for entering into the Columbia License Agreement, which was recorded to research and development 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 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 June 30, 2021, 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, was paid during the second quarter of 2020. Both installments of the license fee were recorded to research and development expenses in the 2019 statement of operations.

The Company 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 June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement.

NOTE 12 – SALE OF COMMON STOCK

2021 Lincoln Park Transaction

On May 14, 2021, the Company entered into a purchase agreement (the "2021 Purchase Agreement") and a registration rights agreement (the "2021 Registration Rights Agreement") with Lincoln Park Capital Fund, LLC ("Lincoln Park"). Pursuant to the terms of the 2021 Purchase Agreement, Lincoln Park has agreed to purchase from the Company up to $80,000,000 of the Company's common stock (subject to certain limitations) from time to time during the term of the 2021 Purchase Agreement. Pursuant to the terms of the 2021 Registration Rights Agreement, the Company filed with the SEC a registration statement to register for resale under the Securities Act the shares that have been or may be issued to Lincoln Park under the 2021 Purchase Agreement.

Pursuant to the terms of the 2021 Purchase Agreement, at the time the Company signed the 2021 Purchase Agreement and the 2021 Registration Rights Agreement, the Company issued 1,280,000 shares of common stock to Lincoln Park as consideration for its commitment to purchase shares of our common stock under the 2021 Purchase Agreement. The commitment shares were valued at $1.6 million and recorded as an addition to equity for the issuance of the common stock and treated as a reduction to equity as a cost of capital to be raised under the 2021 Purchase Agreement.

During the six months ended June 30, 2021, the Company sold an aggregate of approximately 2.8 million shares of common stock under the 2021 Purchase Agreement, for gross proceeds of approximately $3.3 million.

February 2021 Financing

On February 8, 2021, the Company entered into a securities purchase agreement with certain institutional investors relating to the issuance and sale of 58,333,334 shares of its common stock, in a registered direct public offering ("the February 2021 Financing"), with A.G.P/Alliance Global Partners ("AGP"), acting as placement agent. The public offering price for each share of common stock was $1.20. The February 2021 Financing closed on February 9, 2021. AGP received a cash fee of 7% of the gross proceeds, for an aggregate of $4.9 million. The Company incurred other offering expenses of approximately $0.1 million. The Company received net proceeds of approximately $65.0 million, after deducting the fees and other offering expenses.

January 2021 Financing

On January 11, 2021, the Company entered into a securities purchase agreement with certain institutional investors relating to the issuance and sale of 50,000,000 shares of its common stock in a registered direct public offering ("the January 2021 Financing"), with AGP as placement agent. The public offering price for each share of common stock was $0.80. The January 2021 Financing closed on January 13, 2021. AGP received a cash fee of 7% of the gross proceeds, for an aggregate of $2.8 million. The Company incurred other offering expenses of approximately $0.3 million. The Company received net proceeds of approximately $36.9 million, after deducting the fees and other offering expenses.

At-the-Market Offerings

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. On September 4, 2020, the Company filed an amended prospectus supplement under the shelf registration relating to the Sales Agreement to increase the aggregate offering price to $100.0 million in ATM sales under the Sales Agreement. On April 19, 2021, the Company filed an amended prospectus supplement under the shelf registration relating to the Sales Agreement to increase the aggregate offering price to $170.0 million in ATM sales under the Sales Agreement. During the six months ended June 30, 2021, the Company sold approximately 25.2 million shares of common stock under the Sales Agreement, for gross proceeds of approximately $26.3 million. Subsequent to June 30, 2021, the Company has sold 11.0 million shares of common stock under the Sales Agreement, for gross proceeds of approximately $8.4 million.

March 2020 Financing

On February 28, 2020, the Company entered into an underwriting agreement with AGP, relating to the issuance and sale of 14,550,000 shares of common stock, in a registered direct public offering ("the March 2020 Financing"). The public offering price for each share of common stock was $1.10. The March 2020 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.

February 2020 Financing

On February 7, 2020, the Company entered into an underwriting agreement with 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 February 2020 Financing"). The warrants have an exercise price of $0.57, are immediately exercisable and expire five years from the date of issuance.

The February 2020 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 non-cash "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 2020 Financing, with an exercise price of $0.57, were exercised for proceeds of approximately $6.2 million.

November 2019 Financing

On November 14, 2019, 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 "November 2019 Financing"). 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 had an exercise price of $1.94 and expired 12 months from the date of issuance. The common warrants were 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 the Company's securities were traded.

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 non-cash "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.

2019 Lincoln Park Transaction

On August 20, 2019, the Company entered into a purchase agreement (the "2019 Purchase Agreement") and a registration rights agreement (the "2019 Registration Rights Agreement") with Lincoln Park Capital Fund, LLC ("Lincoln Park"). Pursuant to the terms of the 2019 Purchase Agreement, Lincoln Park has agreed to purchase from us up to $15,000,000 of the Company's common stock (subject to certain limitations) from time to time during the term of the 2019 Purchase Agreement. Pursuant to the terms of the 2019 Registration Rights Agreement, the Company filed with the SEC a registration statement to register for resale under the Securities Act the shares that have been or may be issued to Lincoln Park under the 2019 Purchase Agreement.

Pursuant to the terms of the 2019 Purchase Agreement, at the time the Company signed the 2019 Purchase Agreement and the 2019 Registration Rights Agreement, the Company issued 35,529 shares of common stock to Lincoln Park as consideration for its commitment to purchase shares of our common stock under the 2019 Purchase Agreement. The commitment shares were valued at $200,000 and recorded as an addition to equity for the issuance of the common stock and treated as a reduction to equity as a cost of capital to be raised under the 2019 Purchase Agreement.

As a result of receiving stockholder approval on January 16, 2020, the Company may sell more than 19.9% of it's common stock outstanding pursuant to the 2019 Purchase Agreement without violating Nasdaq Marketplace Rules, including Rule 5635(d), requiring shareholder approval for the sale, issuance or potential issuance by an issuer of common stock (or securities convertible into or exercisable for common stock) at a price less than the greater of book or market value.

During the six months ended June 30, 2020, the Company sold an aggregate of approximately 464,471 shares of common stock under the 2019 Purchase Agreement, for gross proceeds of approximately $0.3 million.

NOTE 13 – STOCK-BASED COMPENSATION

Stock Incentive Plans

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. On January 16, 2020, the Company's stockholders approved the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan (the "2020 Plan"). The 2020 Plan provided for the issuance of up to 600,000 shares of common stock. With the adoption of the Amended and Restated 2020 Plan (as defined below), no further grants may be made under the 2020 Plan.

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

Under the terms of the Amended and Restated 2020 Plan, the Company may issue (1) stock options (incentive and nonstatutory), (2) restricted stock, (3) stock appreciation rights ("SARs"), (4) RSUs, (5) other stock-based awards, and (6) cash-based awards. The Amended and Restated 2020 Plan initially provided for the issuance of up to 10,000,000 shares of common stock, which amount will be increased to the extent that awards granted under the Plans are forfeited, expire or are settled for cash (except as otherwise provided in the Amended and Restated 2020 Plan). In addition, the Amended and Restated 2020 Plan contains an "evergreen provision" providing for an annual increase in the number of shares of our common stock available for issuance under the Amended and Restated 2020 Plan on January 1 of each year for a period of ten years, commencing on January 1, 2021 and ending on (and including) January 1, 2030, in an amount equal to the difference between (x) twenty percent (20%) of the total number of shares of common stock outstanding on December 31st of the preceding calendar year, and (y) the total number of shares of common stock reserved under the Amended and Restated 2020 Plan on December 31st of such preceding calendar year (including shares subject to outstanding awards, issued pursuant to awards or available for future awards). The Board of Directors determines the exercise price, vesting and expiration period of the grants under the Amended and Restated 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 Amended and Restated 2020 Plan may not be more than ten years. As of June 30, 2021, 16,894,483 shares were available for future grants under the Amended and Restated 2020 Plan.

General

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

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at December 31, 2020	10,209,286	$ 2.93	9.26	$ 131,558
Grants	14,763,503	$ 1.31		
Exercised	—	—		
Forfeitures or expirations	(243)	2,937.37		
Outstanding at June 30, 2021	24,972,546	$ 1.94	9.31	$ 3,160,260
Exercisable at June 30, 2021	4,151,930	$ 5.51	8.66	$ 1,251,212

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 during the three and six months ended June 2021 was $0.96 per share and $1.08 per share, respectively. The weighted average fair value of options granted during the three and six months ended June 2020 was $0.68 per share and $0.66 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. The fair value of the award is measured on the grant date. One-third of most stock options granted pursuant to the Plans vest 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 premium options to executive officers which have an exercise price greater than the grant date fair value and has issued performance-based options which vest when target parameters are met or probable of being met, 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 service period using the straight-line method.

The assumptions used in the valuation of stock options granted during the six months ended June 30, 2021 and 2020 were as follows:

	Six Months Ended June 30, 2021	Six Months Ended June 30, 2020
Risk-free interest rate	0.80% to 1.63%	0.36% to 1.25%
Expected term of option	5.5 to 10 years	5.5 to 6 years
Expected stock price volatility	124.40% - 137.74%	124.11% -130.00%
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 $2.1 million, of which $1.5 million and $0.6 million, related to General and Administration and Research and Development, respectively was recognized for the quarter ended June 30, 2021. Stock-based compensation expense relating to options granted of $0.7 million, of which $0.5 million and $0.2 million, related to General and Administration and Research and Development, respectively was recognized for the quarter ended June 30, 2020.

Stock-based compensation expense relating to options granted of $3.3 million, of which $2.3 million and $1.0 million, related to General and Administration and Research and Development, respectively was recognized for the six-month period ended June 30, 2021. Stock-based compensation expense relating to options granted of $1.1 million, of which $0.8 million and $0.3 million, related to General and Administration and Research and Development, respectively was recognized for the six-month period ended June 30, 2020.

As of June 30, 2021, the Company had approximately $18.2 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 2.33 years.

Employee Stock Purchase Plans

On May 3, 2019, the Company's stockholders approved the Tonix Pharmaceuticals Holdings Corp. 2019 Employee Stock Purchase Plan (the "2019 ESPP"). As a result of adoption of the 2020 ESPP, as defined below, by the stockholders, no further grants may be made under the 2019 ESPP Plan. On May 1, 2020, the Company's stockholders approved the Tonix Pharmaceuticals Holdings Corp. 2020 Employee Stock Purchase Plan (the "2020 ESPP").

The 2020 ESPP allows eligible employees to purchase up to an aggregate of 300,000 shares of the Company's common stock. Under the 2020 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 2020 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 2020 ESPP, subject to the statutory limit under the Code. As of June 30, 2021, 129,048 shares were available for future sales under the 2020 ESPP.

The 2020 and 2019 ESPP are considered compensatory plans with the related compensation cost expensed over the six-month offering period. For the six months ended June 30, 2021 and 2020, $47,000 and $0, respectively were expensed. In January 2020, 1,578 shares that were purchased as of December 31, 2019, under the 2019 ESPP, were issued. Accordingly, during the first quarter of 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. As of December 31, 2020, approximately $32,000 of employee payroll deductions have accumulated and have been recorded in accrued expenses. In January 2021, 54,447 shares that were purchased as of December 31, 2020, under the 2020 ESPP, were issued. Accordingly, during the first quarter of 2021, approximately $28,000 of employee payroll deductions accumulated at December 31, 2020, related to acquiring such shares, was transferred from accrued expenses to additional paid in capital. The remaining $4,000 was returned to the employees. As of June 30, 2021, approximately $75,000 of employee payroll deductions have accumulated and have been recorded in accrued expenses. In July 2021, 116,505 shares that were purchased as of June 30, 2021, under the 2020 ESPP, were issued. Accordingly, during July 2021, approximately $68,000 of employee payroll deductions accumulated at June 30, 2021, 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 14 – STOCK WARRANTS

The following table summarizes information with respect to outstanding warrants to purchase common stock of the Company at June 30, 2021:

Exercise Price	Number Outstanding	Expiration Date
$ 0.50	24,920	November 2024
$ 0.57	123,500	February 2025
$ 35.00	490,571	December 2023
$ 630.00	5,441	October 2021
$ 687.50	474	October 2021
	644,906	

During the six months June 30, 2021, 3,400 warrants from the February 2020 Financing, with an exercise price of $0.57, were exercised for proceeds of approximately $2,000.

During the six months ended June 30, 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 six months ended June 30, 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.

NOTE 15 – 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 June 30, 2021, the Company has right-of-use assets of $1.0 million and a total lease liability for operating leases of $1.1 million of which $0.6 million is included in long-term lease liabilities and $0.5 million is included in current lease liabilities.

At June 30, 2021, 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 2021	$ 285
2022	342
2023	158
2024	145
2025	149
	1,079
Included interest	(24)
	$ 1,055

During the six months ended June 30, 2021, the Company entered into lease amendments, resulting in the Company recognizing an operating lease liability of approximately $249,000 based on the present value of the future minimum rental payments. The Company also recognized corresponding ROU assets of approximately $249,000.

During the six months ended June 30, 2020, the Company entered into new operating leases and lease amendments, resulting in the Company recognizing an additional operating lease liability of approximately $308,000 based on the present value of the minimum rental payments. The Company also recognized a corresponding increase to ROU assets of approximately $308,000.

Operating lease expense was $0.1 million for the three months ended June 30 for both reporting periods.

Operating lease expense was $0.3 and $0.2 million for the six-months ended June 30, 2021 and 2020, respectively.

Other information related to leases is as follows:

Cash paid for amounts included in the measurement of lease liabilities:	Six Months Ended June 30, 2021	Six Months Ended June 30, 2020
Operating cash flow from operating leases (in thousands)	$ 314	$ 233
Weighted Average Remaining Lease Term		
Operating leases	3.13 years	1.43 years
Weighted Average Discount Rate		
Operating leases	1.36%	2.44%

NOTE 16 – COMMITMENTS

Contractual agreements

The Company has entered into contracts with various contract research organizations with outstanding commitments aggregating approximately $39.1 million at June 30, 2021 for future work to be performed.

On July 26, 2021, the Company entered into a $17.5 million contingent non-binding Purchase and Sales Agreement in connection with a property in Maryland. The property is intended for process development activities. The purchase and sale is expected to close during the fourth quarter of 2021.

On March 3, 2021, the Company entered into a $2.9 million contingent non-binding Purchase and Sales Agreement in connection with a property in Massachusetts. The property is intended for process development activities. The purchase and sale is expected to close during the third quarter of 2021.

Defined contribution plan

The Company has 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. The Company charged operations $41,000 and $111,000 for the three and six months ended June 30, 2021, respectively, and $29,000 and $79,000 for the three and six months ended June 30, 2020, respectively, for contributions under the 401(k) Plan.

NOTE 17 – SUBSEQUENT EVENTS

On July 26, 2021, the Company entered into a $17.5 million contingent non-binding Purchase and Sales Agreement in connection with a property in Maryland. (See Note 16).

Subsequent to June 30, 2021, the Company has sold 11.0 million shares of common stock under the ATM Sales Agreement, for gross proceeds of approximately $8.4 million.

ITEM 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 small molecules and biologics to treat and prevent human disease and alleviate suffering. Tonix's portfolio is primarily composed of central nervous system, or CNS, and immunology product candidates. The CNS portfolio includes both small molecules and biologics to treat pain, neurologic, psychiatric and addiction conditions. The immunology portfolio includes vaccines to prevent infectious diseases and biologics to address organ rejection, cancer, and autoimmune diseases. Our lead programs are TNX-102 SL*, a sublingual tablet for the management of fibromyalgia, or FM, and TNX-1800**, a live virus vaccine to protect against COVID-19.

Our most advanced CNS product candidate is TNX-102 SL*, a proprietary sublingual tablet formulation of cyclobenzaprine, or CBP, designed for bedtime administration. TNX-102 SL has active investigational new drug applications, or IND's, for FM, posttraumatic stress disorder, or PTSD, agitation in Alzheimer's disease, or AAD, and alcohol use disorder, or AUD. TNX-102 SL is in mid-Phase 3 development for the management of FM which is a pain disorder characterized by chronic widespread pain, non-restorative sleep, fatigue and impaired cognition. In December 2020, we reported positive results from the Phase 3 RELIEF study of TNX-102 SL 5.6 mg for the management of fibromyalgia. In July 2021, we reported pre-planned interim analysis results from a second Phase 3 study, RALLY. Based on the recommendations from the independent data monitoring committee that the RALLY trial was unlikely to demonstrate a statistically significant improvement in the primary endpoint, we stopped enrollment of new participants but are allowing currently enrolled participants to complete the study. We expect to report topline data from the full study in the fourth quarter of 2021. For TNX-102 SL in PTSD, we completed the Phase 3 RECOVERY trial and reported topline results in the fourth quarter of 2020 in which TNX-102 SL did not meet the primary efficacy endpoint. As a next step, we intend to meet with the U.S. Food and Drug Administration, or FDA, to discuss potential new endpoints for the indication of treatment of PTSD. We also expect to begin enrolling a Phase 3 study of TNX-102 SL in police in Kenya in the fourth quarter of 2021. PTSD is a serious psychiatric condition that develops in response to experiencing a traumatic event. The AAD program is Phase 2 ready with an active IND and FDA Fast Track designation. AAD, which includes emotional lability, restlessness, irritability, and aggression, is one of the most distressing and debilitating of the behavioral complications of Alzheimer's disease. The AUD program is also Phase 2 ready with an active IND. AUD is a chronic relapsing brain disease characterized by compulsive alcohol use, loss of control over alcohol intake, and a negative emotional state when not using alcohol. We also plan to develop TNX-102 SL as a potential treatment for Long COVID Syndrome (Long COVID) which is known officially as Post-Acute Sequelae of COVID-19 (PASC). We met with the FDA in the third quarter of 2021 to seek agreement on the design of a potential Phase 2 pivotal study and the overall clinical development plan to qualify TNX-102 SL as an indicated treatment for Long COVID. We expect to receive the official minutes from this meeting in the third quarter of 2021.

Other CNS candidates in development include TNX-1900* (intranasal potentiated oxytocin), which is in development as a candidate for prophylaxis of chronic migraine and for the treatment of craniofacial pain, insulin resistance and related conditions. TNX-1900 was acquired from Trigemina, Inc. in 2020 and licensed from Stanford University in 2020. We intend to submit an IND to the FDA in the third quarter of 2021 and initiate a Phase 2 study in migraine in the fourth quarter of 2021. Tonix also licensed technology to use TNX-1900 for the treatment of insulin resistance from the University of Geneva. TNX-2900* is another intranasal oxytocin-based therapeutic in development for the treatment of Prader-Willi syndrome, or PWS. The technology for TNX-2900 was licensed from the French National Institute of Health and Medical Research. PWS, an orphan condition, is a rare genetic disorder of failure to thrive in infancy, associated with uncontrolled appetite later in life.

TNX-601 CR* (tianeptine oxalate and naloxone controlled-release tablets) is another CNS product candidate in development as a treatment for major depressive disorder, or depression, as well as for PTSD and neurocognitive dysfunction associated with corticosteroid use. We completed a Phase 1 trial for formulation development outside of the U.S. Based on official minutes from a pre-IND meeting with the FDA, we expect to initiate a Phase 2 study for the treatment of depression in the first half of 2022, pending results of toxicology studies and IND clearance.

TNX-1300** (double-mutant cocaine esterase) is also in Tonix's CNS portfolio and is in Phase 2 development for the treatment of life-threatening cocaine intoxication. TNX-1300 has been granted Breakthrough Therapy designation, or BTD by the FDA. TNX-1300 was licensed from Columbia University in 2019 after a Phase 2 study showed that it rapidly and efficiently disintegrates cocaine in the blood of volunteers who had received intravenous, or *i.v.*, cocaine. We expect to initiate a Phase 2 open-label safety study of TNX-1300 in an emergency room setting in the third quarter of 2021.

Our immunology portfolio includes vaccines to prevent infectious diseases and biologics to address organ rejection, cancer, and autoimmune diseases. Our lead vaccine candidate, TNX-1800**, is a live replicating vaccine based on the horsepox viral vector platform to protect against COVID-19, primarily by eliciting a T cell immune response. We reported positive immune response data in non-human primates in the fourth quarter of 2020 and reported positive efficacy data from animal challenge studies using live SARS-CoV-2 in the first quarter of 2021. TNX-801**, a live horsepox virus vaccine for percutaneous administration, is in the pre-IND stages of development to protect against smallpox and monkeypox. Both TNX-1800 and TNX-801 are based on the proprietary horsepox viral vector platform. We expect to initiate a Phase 1 safety study of TNX-1800 for COVID-19 in the first half of 2022.

TNX-2100** is a skin test we are developing to measure SARS-CoV-2 exposure and T cell immunity. It is an intradermal test to measure delayed-type hypersensitivity (DTH) response to SARS-CoV-2. We have manufactured GMP peptides designed to stimulate SARS-CoV-2 specific T cells and expect to submit an IND to the FDA in the third quarter of 2021 and initiate a first-in-human clinical study in the fourth quarter of 2021.

TNX-3500* (sangivamycin) is an antiviral inhibitor of SARS-CoV-2. It has demonstrated broad-spectrum activity in laboratory-based assays against the coronaviruses SARS-CoV-2 and MERS-CoV. Tonix licensed this compound from OyaGen, Inc. and intends to develop it as a treatment for COVID-19 and potentially other viral disorders. The active ingredient of TNX-3500 has been studied for safety in humans in prior studies on cancer patients at the U.S. National Cancer Institute but has not been approved for marketing in any jurisdiction. Tonix intends to conduct further animal studies.

TNX-1500** is a humanized monoclonal antibody, or mAb, directed against CD40-ligand, or CD40L, engineered to modulate binding to Fc receptors, that is being developed to prevent and treat organ transplant rejection as well as to treat autoimmune conditions. In experiments at the Massachusetts General Hospital, a teaching hospital of Harvard Medical School, TNX-1500 product candidate is being studied as monotherapy or in combination with mycophenolate mofetil in heart and kidney organ transplants in non-human primates. Preliminary results from an ongoing experiment in heart transplants indicated that TNX-1500 appeared to have comparable efficacy to historical experiments using the chimeric mouse-human anti-CD40L monoclonal antibody (mAb) hu5c8 and with TNX-1500 no evidence of thrombosis has been observed. We expect to start a Phase 1 study of TNX-1500 in the second half of 2022.

Finally, our preclinical pipeline includes TNX-1600*, TNX-1700**, TNX-701* and TNX-2300**. TNX-1600 is an inhibitor of the reuptake of neurotransmitters serotonin, norepinephrine and dopamine (a triple reuptake inhibitor). TNX-1600 was licensed from Wayne State University in 2019 and is being developed as a treatment for PTSD, depression and attention-deficit/hyperactivity disorder, or ADHD. TNX-1700 is a recombinant modified form of Trefoil Family Factor 2, or rTFF2, that was licensed from Columbia University in 2019, and is a biologic being developed to treat gastric and pancreatic cancers by an immune-oncology mechanism. TNX-701 is an undisclosed small molecule, which is being developed to prevent deleterious effects of radiation exposure which has the potential to be used as a medical countermeasure to improve biodefense. Tonix is also developing TNX-2300 as a second COVID-19 vaccine under an option agreement with Kansas State university. TNX-2300 is a live viral vaccine based on bovine parainfluenza virus.

As it relates to our COVID-19 and other infectious diseases platform, we are developing three facilities to enable internal research, development and manufacturing capabilities. Our first such facility in process is the Advanced Development Center (ADC) located in New Bedford, Massachusetts. This facility is intended to accelerate development and clinical scale manufacturing of live-virus vaccines to support Phase 1 and Phase 2 clinical trials. It is currently under construction and will be an approximately 45,000 square foot BSL-2 facility, once completed. It is expected to be operational in the first half of 2022. We also intend to build a facility in Hamilton, Montana where we purchased approximately 44 acres of land. This Commercial Manufacturing Center (CMC) will focus on developing and manufacturing commercial scale live-virus vaccines and is also intended to be biosafety level 2 (BSL-2). Construction is expected to be initiated for the CMC in 2022. Finally, we recently entered into an agreement to acquire an infectious disease R&D facility (RDF) in Frederick, Maryland. The approximately 48,000 square foot, BSL-2 facility is currently owned and operated by Southern Research. We intend for the RDF to focus on development of vaccines and antiviral drugs against COVID-19, its variants and other infectious diseases. The acquisition is expected to close in the fourth quarter of 2021.

*TNX-102 SL, TNX-601 CR, TNX-1600, TNX-1900, TNX-2900, TNX-3500 and TNX-701 are investigational new drugs and have not been approved for any indication.

**TNX-1800, TNX-801, TNX-2300, TNX-2100, TNX-1300, TNX-1500 and TNX-1700 are investigational new biologics and have not been approved for any indication.

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 June 30, 2021 Compared to Three Months Ended June 30, 2020

Research and Development Expenses. Research and development expenses for the three months ended June 30, 2021 were $18.1 million, an increase of $7.5 million, or 71%, from $10.6 million for the three months ended June 30, 2020. This increase is predominately due to increased non-clinical expenses of $7.1 million, manufacturing expenses of $2.7 million, employee-related expenses of $1.2 million and regulatory/legal expenses of $0.4 million offset by a decrease in clinical expenses of $4.1 million. We expect research and development expenses to increase during 2021 as we move our clinical development programs forward and continue to invest in our development pipeline.

General and Administrative Expenses. General and administrative expenses for the three months ended June 30, 2021 were $5.4 million, an increase of $1.8 million, or 50%, from $3.6 million incurred in the three months ended June 30, 2020. The increase in primarily due to an increase in employee-related expenses of $1.1 million, an increase in investor relations/public relations expenses of $0.2 million, an increase in financial reporting expenses of $0.2 million and an increase in insurance premiums of $0.2 million.

Net Loss. As a result of the forgoing, the net loss for the three months ended June 30, 2021 was $23.6 million, compared to a net loss of $14.2 million for the three months ended June 30, 2020.

Six Months Ended June 30, 2021 Compared to Six Months Ended June 30, 2020

Research and Development Expenses. Research and development expenses for the six months ended June 30, 2021 were $33.5 million, an increase of $18.2 million, or 119%, from $15.3 million for the six months ended June 30, 2020. This increase is predominately due to the increased non-clinical expenses of $10.0 million, manufacturing expenses of $7.0 million, employee-related expenses of $2.0 million and regulatory/legal expenses of $0.7 million offset by a decrease in clinical expenses of $1.7 million. We expect research and development expenses to increase during 2021 as we move our clinical development programs forward and continue to invest in our development pipeline.

General and Administrative Expenses. General and administrative expenses for the six months ended June 30, 2021 were $10.8 million, an increase of $4.6 million, or 74%, from $6.2 million incurred in the six months ended June 30, 2020. The increase is primarily due to employee-related expenses of $1.8 million, an increase in legal fees of $0.5 million due to increased patent prosecution costs, an increase in investor relations/public relations expenses of $0.3 million, an increase in financial reporting expenses of $1.2 million and an increase in insurance premiums of $0.2 million.

Net Loss. As a result of the foregoing, the net loss for the six months ended June 30, 2021 was $44.2 million, compared to a net loss of $21.5 million for the six months ended June 30, 2020.

License Agreements

On April 14, 2021, we and OyaGen, Inc. ("OyaGen") entered into an exclusive License Agreement (the "OyaGen License Agreement") pursuant to which OyaGen granted us an exclusive license to certain patents and technical information related to an antiviral inhibitor of SARS-CoV-2, sangivamycin, and to develop and commercialize products thereunder, and to acquire rights to any technology based thereon for the prevention or treatment of Covid-19 developed by OyaGen during the term of the License Agreement.

As consideration for entering into the License Agreement, we agreed to pay a low-seven digit license fee to OyaGen, and agreed to issue to OyaGen and an affiliated entity an aggregate of 2,752,294 shares of our common stock, valued at $3.0 million, which are unregistered and subject to a six-month lock-up and a voting agreement, pursuant to which OyaGen and the affiliated entity have agreed to vote the common stock on any matter put to a vote of the shareholders of the Company in accordance with management's recommendations. The OyaGen License also provides for single-digit royalties and contingent milestone payments. As of June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement.

On February 11, 2021, we entered into a license agreement (the "Inserm License Agreement") pursuant to which we licensed technology using oxytocin-based therapeutics for the treatment of Prader-Willi syndrome and non-organic failure to thrive disease from Inserm (the French National Institute of Health and Medical Research), Aix-Marseille Université and Centre Hospitalier Universitaire of Toulouse. The Inserm License Agreement provides for the payment of annual fees and milestone payments upon the occurrence of specified sales milestones, totaling approximately $0.4 million, as well royalties on net sales of products based on the licensed technology, and assignment/transfer and sublicense royalties. As of June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement.

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 us 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 research and development expenses in the statement of operations for the year ended December 31, 2019. We are 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 us or a sublicensee and (ii) any other products that involve material or technical information related to the TFF2 Product and transferred to us pursuant to the License Agreement ("Other Products") sold by us 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 us to any third party for intellectual property rights which are necessary for the practice of the rights licensed to us 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 June 30, 2021, 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, was paid during the second quarter of 2020. Both installments of the license fee were recorded to research and development expenses in the 2019 statement of operations.

We agreed to pay Columbia single-digit royalties on net sales of (i) Products sold by us 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 us 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 June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement.

Asset Purchase Agreements

On December 22, 2020, we entered into an asset purchase agreement (the "Asset Purchase Agreement") with Katana Pharmaceuticals, Inc. ("Katana") pursuant to which we acquired Katana assets related to insulin resistance and related syndromes, including obesity (the "Katana Assets"). In connection with the acquisition of the Assets, we assumed Katana's rights and obligations under that certain Exclusive License Agreement by and between Katana and The University of Geneva ("Geneva") (the "Geneva License "Agreement") pursuant to an Assignment and Assumption Agreement with Geneva ("Geneva Assignment and Assumption Agreement"), dated December 22, 2020. As consideration for entering into the Asset Purchase Agreement, we paid $0.7 million to Katana. The costs associated with the cash payments were recorded to research and development expenses in the statement of operations for the year ended December 31, 2020. Because the Katana intellectual property was acquired prior to FDA, the cash consideration totaling $0.7 million, was expensed as research and development costs since there is no alternative future use and the acquired intellectual property does not constitute a business.

Pursuant to the terms of the Geneva Assignment and Assumption Agreement, Geneva granted us an exclusive license, with the right to sublicense, certain patents related to the Katana Assets. We are obligated to use commercially reasonable efforts to diligently develop, manufacture, and sell products claimed or covered by the patent and will use commercially reasonable efforts to diligently develop markets for such products. The Geneva 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 Geneva. As of June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement.

On June 11, 2020, we entered into an asset purchase agreement (the "Trigemina Asset Purchase Agreement") with Trigemina, Inc. ("Trigemina") and certain shareholders named therein (the "Executive Shareholders") pursuant to which we acquired Trigemina assets related to migraine and pain treatment technologies (the "Trigemina Assets"). In connection with the acquisition of the Trigemina Assets, we assumed Trigemina's rights and obligations under that certain Amended and Restated Exclusive License Agreement, dated November 30, 2007, as amended, by and between Trigemina and The Board of Trustees of the Leland Stanford Junior University ("Stanford") (the "Stanford License "Agreement") pursuant to an Assignment and Assumption Agreement with Stanford ("Assignment and Assumption Agreement"), dated June 11, 2020. As consideration for entering into the Trigemina Asset Purchase Agreement, we paid $824,759 to Trigemina and issued to Trigemina 2,000,000 shares of our common stock and paid Stanford $250,241 pursuant to the terms of the Assignment and Assumption Agreement. The common stock is unregistered and subject to a 12 month lock-up and a Shareholder Voting Agreement, dated June 11, 2020, pursuant to which Trigemina and the Executive Shareholders have agreed to vote the common stock on any matter put to a vote of our shareholders in accordance with management's recommendations. Both the costs associated with the cash payments and share issuance, totaling $2.4 million, were recorded to research and development in the statement of operations for the year ended December 31, 2020. Because the Trigemina intellectual property was acquired prior to FDA approval, the cash and stock consideration was expensed as research and development costs since there is no alternative future use and the acquired intellectual property does not constitute a business.

Pursuant to the terms of the Assignment and Assumption Agreement, Stanford has granted us an exclusive license, with the right to sublicense, certain patents related to the Trigemina Assets. Stanford has reserved for itself the right to practice under the patents for academic research and educational purposes. We are obligated to use commercially reasonable efforts to diligently develop, manufacture, and sell products claimed or covered by the patent and will use commercially reasonable efforts to diligently develop markets for such products. The Stanford 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 Stanford. As of June 30, 2021, 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 "TRImaran 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 "TRImaran Assets"). In connection with the acquisition of the TRImaran 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 TRImaran Asset Purchase Agreement, we paid $100,000 to TRImaran and have assumed certain liabilities of TRImaran totaling $68,500. The $168,500 was recorded to research and development expenses in the statement of operations in 2019. 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. Pursuant to the terms of the TRImaran Asset Purchase Agreement, TRImaran and the Selling Shareholders are prohibited from disclosing confidential information related to the TRImaran 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. As of June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement.

Pursuant to the terms of the WSU License Agreement, WSU granted us an exclusive license, with the right to sublicense, certain patents, technical information and material (collectively, the "Technology") related to the TRImaran 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. We are 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 paid $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 June 30, 2021, no milestone payments have been accrued or paid in relation to this agreement.

Liquidity and Capital Resources

As of June 30, 2021, we had working capital of $169.2 million, comprised primarily of cash and cash equivalents of $165.7 million and prepaid expenses and other of $11.6 million, offset by $3.4 million of accounts payable, $4.2 million of accrued expenses and current lease liabilities of $0.5 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 our vaccine program. For the six months ended June, 2021 and 2020, we used approximately $40.2 million and $19.4 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 six months ended June 30, 2021 and 2020, net proceeds from financing activities were $130.8 million and $63.2 million, respectively, predominately from the sale of our common stock and warrants.

Cash used in investing activities for the six months ended June 30, 2021 and 2020, was $1.9 million and $14,000 respectively, related to the purchase of property and equipment.

We believe that our cash resources at June 30, 2021, and the proceeds that we raised from equity offerings subsequent to the end of the second quarter of 2021 will meet our operating and capital expenditure requirements through June 30, 2022, but not beyond.

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 period 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. 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.

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 clinical trials and the build out of recently acquired research and development and manufacturing facilities. 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 capital in order to fund future research and development activities and the build out of our recently acquired research and development and manufacturing facilities. 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.

2021 Lincoln Park Transaction

On May 14, 2021, we entered into a purchase agreement (the "2021 Purchase Agreement") and a registration rights agreement (the "2021 Registration Rights Agreement") with Lincoln Park Capital Fund, LLC ("Lincoln Park"). Pursuant to the terms of the 2021 Purchase Agreement, Lincoln Park has agreed to purchase from us up to $80,000,000 of our common stock (subject to certain limitations) from time to time during the term of the 2021 Purchase Agreement. Pursuant to the terms of the 2021 Registration Rights Agreement, we filed with the SEC a registration statement to register for resale under the Securities Act the shares that have been or may be issued to Lincoln Park under the 2021 Purchase Agreement.

Pursuant to the terms of the 2021 Purchase Agreement, at the time we signed the 2021 Purchase Agreement and the 2021 Registration Rights Agreement, we issued 1,280,000 shares of common stock to Lincoln Park as consideration for its commitment to purchase shares of our common stock under the 2021 Purchase Agreement. The commitment shares were valued at $1.6 million and recorded as an addition to equity for the issuance of the common stock and treated as a reduction to equity as a cost of capital to be raised under the 2021 Purchase Agreement.

During the six months ended June 30, 2021, we sold an aggregate of approximately 2.8 million shares of common stock under the 2021 Purchase Agreement, for gross proceeds of approximately $3.3 million.

February 2021 Financing

On February 8, 2021, we entered into a securities agreement ("the February 2021 Financing") with A.G.P/Alliance Global Partners ("AGP"), relating to the issuance and sale of 58,333,334 shares of our common stock, in a registered direct public offering. The public offering price for each share of common stock was $1.20. The February 2021 Financing closed on February 9, 2021. AGP purchased the shares at a seven percent discount to the then current public price, for an aggregate discount of $4.9 million. We incurred other offering expenses of approximately $0.1 million. We received net proceeds of approximately $65.0 million, after deducting the underwriting discount and other offering expenses.

January 2021 Financing

On January 11, 2021, we entered into a securities purchase agreement ("the January 2021 Financing") with AGP, relating to the issuance and sale of 50,000,000 shares of our common stock, in a registered direct public offering. The public offering price for each share of common stock was $0.80. The January 2021 Financing closed on January 13, 2021. AGP purchased the shares at a seven percent discount to the then current public price, for an aggregate discount of $2.8 million. We incurred other offering expenses of approximately $0.3 million. We received net proceeds of approximately $36.9 million, after deducting the underwriting discount and other offering expenses.

At-the-Market Offerings

On April 8, 2020, we entered into a sales agreement (the "Sales Agreement") with AGP pursuant to which we may issue and sell, from time to time, shares of our common stock having an aggregate offering price of up to $50.0 million in at-the-market offerings ("ATM") sales. On the same day, we 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. Our common stock will be sold at prevailing market prices at the time of the sale, and, as a result, prices will vary. On September 4, we filed an amended prospectus supplement under the shelf registration relating to the Sales Agreement to increase the aggregate offering price to $100.0 million in ATM sales under the Sales Agreement. On April 19, 2021, we filed an amended prospectus supplement under the shelf registration relating to the Sales Agreement to increase the aggregate offering price to $170.0 million in ATM sales under the Sales Agreement. During the six months ended June 30, 2021, we sold approximately 25.2 million shares of common stock under the Sales Agreement, for gross proceeds of approximately $26.3 million. Subsequent to June 30, 2021, we have sold 11.0 million shares of common stock under the Sales Agreement, for gross proceeds of approximately $8.4 million.

March 2020 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.

February 2020 Financing

On February 7, 2020, we entered into an underwriting agreement ("the February 20 Financing") with 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 2020 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 2020 Financing, with an exercise price of $0.57, were exercised for proceeds of approximately $6.2 million.

November 2019 Financing

On November 14, 2019, 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 had an exercise price of $1.94 and expired 12 months from the date of issuance. The common warrants were 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.

With the February 2020 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.

2019 Lincoln Park Transaction

On August 20, 2019, we entered into a purchase agreement (the "2019 Purchase Agreement") and a registration rights agreement (the "2019 Registration Rights Agreement") with Lincoln Park Capital Fund, LLC ("Lincoln Park"). Pursuant to the terms of the 2019 Purchase Agreement, Lincoln Park has agreed to purchase from us up to $15,000,000 of our common stock (subject to certain limitations) from time to time during the term of the 2019 Purchase Agreement. Pursuant to the terms of the 2019 Registration Rights Agreement, we filed with the SEC a registration statement to register for resale under the Securities Act the shares that have been or may be issued to Lincoln Park under the 2019 Purchase Agreement.

Pursuant to the terms of the 2019 Purchase Agreement, at the time we signed the 2019 Purchase Agreement and the 2019 Registration Rights Agreement, we issued 35,529 shares of common stock to Lincoln Park as consideration for its commitment to purchase shares of our common stock under the 2019 Purchase Agreement. The commitment shares were valued at $200,000 and recorded as an addition to equity for the issuance of the common stock and treated as a reduction to equity as a cost of capital to be raised under the 2019 Purchase Agreement.

As a result of receiving stockholder approval on January 16, 2020, we may sell more than 19.9% of its common stock outstanding pursuant to the 2019 Purchase Agreement without violating Nasdaq Marketplace Rules, including Rule 5635(d), requiring shareholder approval for the sale, issuance or potential issuance by an issuer of common stock (or securities convertible into or exercisable for common stock) at a price less than the greater of book or market value.

During the six months ended June 30, 2020, we sold an aggregate of approximately 464,471 shares of common stock under the 2019 Purchase Agreement, for gross proceeds of approximately $0.3 million.

Stock Compensation

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 common stock. With the adoption of the 2020 Plan (as defined below), no further grants may be made under the 2019 Plan. On January 16, 2020, our stockholders approved the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan (the "2020 Plan"). The 2020 Plan provided for the issuance of up to 600,000 shares of common stock. With the adoption of the Amended and Restated 2020 Plan (as defined below), no further grants may be made under the 2020 Plan.

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

Under the terms of the Amended and Restated 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 Amended and Restated 2020 Plan initially provided for the issuance of up to 10,000,000 shares of common stock, which amount will be increased to the extent that awards granted under the Plans are forfeited, expire or are settled for cash (except as otherwise provided in the Amended and Restated 2020 Plan). In addition, the Amended and Restated 2020 Plan contains an "evergreen provision" providing for an annual increase in the number of shares of our common stock available for issuance under the Amended and Restated 2020 Plan on January 1 of each year for a period of ten years, commencing on January 1, 2021 and ending on (and including) January 1, 2030, in an amount equal to the difference between (x) twenty percent (20%) of the total number of shares of common stock outstanding on December 31st of the preceding calendar year, and (y) the total number of shares of common stock reserved under the Amended and Restated 2020 Plan on December 31st of such preceding calendar year (including shares subject to outstanding awards, issued pursuant to awards or available for future awards). The Board of Directors determines the exercise price, vesting and expiration period of the grants under the Amended and Restated 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 Amended and Restated 2020 Plan may not be more than ten years. As of June 30, 2021, 16,894,483 shares were available for future grants under the Amended and Restated 2020 Plan.

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 our 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 during the three and six months ended June 2021 was $0.96 per share and $1.08 per share, respectively. The weighted average fair value of options granted during the three and six months ended June 2020 was $0.68 per share and $0.66 per share, respectively.

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 $2.1 million, of which $1.5 million and $0.6 million, related to General and Administration and Research and Development, respectively was recognized for the quarter ended June 30, 2021. Stock-based compensation expense relating to options granted of $0.7 million, of which $0.5 million and $0.2 million, related to General and Administration and Research and Development, respectively was recognized for the quarter ended June 30, 2020.

Stock-based compensation expense relating to options granted of $3.3 million, of which $2.3 million and $1.0 million, related to General and Administration and Research and Development, respectively was recognized for the six-month period ended June 30, 2021. Stock-based compensation expense relating to options granted of $1.1 million, of which $0.8 million and $0.3 million, related to General and Administration and Research and Development, respectively was recognized for the six-month period ended June 30, 2020.

As of June 30, 2021, the Company had approximately $18.2 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 2.33 years.

Employee Stock Purchase Plans

On May 3, 2019, our stockholders approved the Tonix Pharmaceuticals Holdings Corp. 2019 Employee Stock Purchase Plan (the "2019 ESPP"). As a result of adoption of the 2020 ESPP, as defined below, by our stockholders, no further grants may be made under the 2019 ESPP Plan. On May 1, 2020, our stockholders approved the Tonix Pharmaceuticals Holdings Corp. 2020 Employee Stock Purchase Plan (the "2020 ESPP").

The 2020 ESPP allows eligible employees to purchase up to an aggregate of 300,000 shares of our common stock. Under the 2020 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 our common stock at the end of the offering period. Each offering period under the 2020 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 2020 ESPP, subject to the statutory limit under the Code. As of June 30, 2021, 129,048 shares were available for future sales under the 2020 ESPP.

The 2020 and 2019 ESPP are considered compensatory plans with the related compensation cost expensed over the six-month offering period. For the six months ended June 30, 2021 and 2020, $47,000 and $0, respectively were expensed. In January 2020, 1,578 shares that were purchased as of December 31, 2019, under the 2019 ESPP, were issued. Accordingly, during the first quarter of 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. As of December 31, 2020, approximately $32,000 of employee payroll deductions have accumulated and have been recorded in accrued expenses. In January 2021, 54,447 shares that were purchased as of December 31, 2020, under the 2020 ESPP, were issued. Accordingly, during the first quarter of 2021, approximately $28,000 of employee payroll deductions accumulated at December 31, 2020, related to acquiring such shares, was transferred from accrued expenses to additional paid in capital. The remaining $4,000 was returned to the employees. As of June 30, 2021, approximately $75,000 of employee payroll deductions have accumulated and have been recorded in accrued expenses. In July 2021, 116,505 shares that were purchased as of June 30, 2021, under the 2020 ESPP, were issued. Accordingly, during July 2021, approximately $68,000 of employee payroll deductions accumulated at June 30, 2021, 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

Contractual agreements

We have entered into contracts with various contract research organizations with outstanding commitments aggregating approximately $39.1 million at June 30, 2021 for future work to be performed.

On July 26, 2021, the Company entered into a $17.5 million contingent non-binding Purchase and Sales Agreement in connection with a property in Maryland. The property is intended for process development activities. The purchase and sale is expected to close during the fourth quarter of 2021.

On March 3, 2021, we entered into a $2.9 million contingent non-binding Purchase and Sales Agreement in connection with a property in Massachusetts. The property is intended for process development activities. The purchase and sale is expected to close during the third quarter of 2021.

Operating leases

As of June 30, 2021, future minimum lease payments are as follows (in thousands):

Year Ending December 31,	
Remainder of 2021	$ 285
2022	342
2023	158
2024	145
2025	149
Included interest	(24)
	$ 1,055

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations are based on our condensed consolidated financial statements, which have been prepared in accordance with 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 condensed 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.

The table below summarizes our direct research and development expenses for our product candidates and development platform for the six months ended June 30, 2021, and 2020.

	Six months ended June 30, (in thousands)		
	2021	**2020**	**Change**
Research and development expenses:			
Direct expenses – TNX - 102 SL	$ 7,454	$ 7,967	$ (513)
Direct expenses – TNX - 1800	3,476	807	2,669
Direct expenses – TNX - 1300	4,740	402	4,338
Direct expenses – TNX - 1500	2,002	355	1,647
Direct expenses – TNX - 1900	700	2,452	(1,752)
Direct expenses – TNX - 3500	4,991	137	4,854
Direct expenses – Other programs	4,926	909	4,017
Internal staffing, overhead and other	5,171	2,218	2,953
Total research & development	$ 33,460	$ 15,247	$ 18,213

Our direct research and development expenses consist principally of external costs for clinical, nonclinical and manufacturing, such as fees paid to contractors, consultants and CROs in connection with our development work. Included in "Internal Staffing, Overhead and Other" is overhead, supplies, research and development employee costs (including stock option expenses), travel, regulatory and legal.

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 November 2019 and February 2020 including beneficial conversion feature. In connection with the 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 issued in the November 2019 Financing using a Monte Carlo simulation, 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 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 – QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

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

ITEM 4 – CONTROLS AND 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 June 30, 2021, 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 June 30, 2021 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

There were no material changes from the risk factors set forth under Part I, Item 1A., "Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2020, and under Part II, Item 1A., "Risk Factors" in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021. You should carefully consider the risk factors set forth in our Annual Report on Form 10-K for the fiscal year ended December 31, 2020, as well as other reports and statements that we file and have filed with the SEC, in addition to the other information set forth in this report which could materially affect our business, financial condition or future results. The risks and uncertainties described in this report and in our Annual Report on Form 10-K for the year ended December 31, 2020 and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021, as well as other reports and statements that we file with the SEC, are not the only risks and uncertainties facing us. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also have a material adverse effect on our financial position, results of operations or cash flows.

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

On May 14, 2021, we issued 1,280,000 shares of common stock to Lincoln Park Capital Fund LLC as consideration for its commitment to purchase shares of our common stock under the 2021 Purchase Agreement.

On April 14, 2021, we issued 2,614,679 shares of our common stock to OyaGen, Inc., and 137,615 shares of our common stock to Procela Partners Ltd., as partial consideration in connection with the OyaGen License Agreement.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

None.

Item 5. Other Information

None.

Item 6. Exhibits

10.01	Purchase and Sale Agreement, dated July 26, 2021, between the Company and Southern Research
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
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

TONIX PHARMACEUTICALS HOLDING CORP.

Date: August 9, 2021

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

Date: August 9, 2021

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

EXHIBIT 10.01

AGREEMENT OF PURCHASE AND SALE

THIS AGREEMENT OF PURCHASE AND SALE (this "Agreement") is made as of this 26th day of July, 2021 (the "Effective Date") by and between **SOUTHERN RESEARCH INSTITUTE**, an Alabama non-profit organization, having an address at 2000 Ninth Avenue South, Birmingham, Alabama 35205 ("Seller") and **TONIX PHARMACEUTICALS HOLDING CORP.**, a Nevada corporation, having an address at 26 Main Street, Chatham NJ 07928 (collectively with its permitted successors and assigns hereunder, "Purchaser").

W I T N E S S E T H:

WHEREAS, Seller is the owner of that certain real property comprising approximately 4.99 acres of land located at 431 Aviation Way, in the City of Frederick, County of Frederick, State of Maryland and more particularly described on Exhibit A attached hereto and made a part hereof (the "Land", and together with the Improvements (as defined below), the "Real Property");

WHEREAS, Purchaser is willing to purchase and acquire all of Seller's right, title and interest in and to the Land, together with all right, title and interest of Seller, if any, in and to the following: (a) all open or proposed highways, streets, roads, avenues, alleys, easements, strips, gores and rights of way in, on, across, in front of, contiguous to, abutting or adjoining the Land; (b) any and all buildings, structures, fixtures and other improvements now or hereafter erected on the Land ("Improvements"); (c) such furniture, equipment and other assets and inventory used in the operation, maintenance or ownership of the Real Property and such other equipment and assets (the "Equipment") more particularly described on Exhibit B attached hereto; (d) all water (including riparian, drilling and pumping), sewer, development, and other rights or any nature appurtenant to the Land or the Improvements; (e) all permits, licenses, approvals, authorizations issued by any governmental authority in connection with the Land or the Improvements (as opposed to the Equipment); (f) all assignable Permits (defined below) as contemplated by Section 5.1(i)(v) below; and (g) any and all operating manuals, plans and specifications and other intangible property associated with the Land or the Improvements (collectively, the "Other Property"), and Seller is willing to sell, assign and convey to Purchaser its right, title and interest in and to the Real Property and the Other Property, each upon and subject to the terms and conditions specified herein.

NOW THEREFORE, in consideration of the foregoing premises, the mutual promises contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto hereby agree as follows:

ARTICLE I

PURCHASE AND SALE

Section 1.1 Property. Seller agrees to sell, assign and convey to Purchaser, and Purchaser agrees to purchase, assume and acquire from Seller, all of Seller's right, title and interest in and to the Real Property and the Other Property (collectively, the "Property"), upon and subject to the terms and conditions of this Agreement. All references herein to the Property shall mean both the Property as a whole and any portion thereof.

Section 1.2 Purchase Price. In consideration of the sale, assignment and conveyance by Seller to Purchaser of the Property pursuant to the terms of this Agreement, Purchaser agrees to pay Seller an amount equal to Seventeen Million Five Hundred Thousand and 00/100 Dollars ($17,500,000.00) (the "Purchase Price"), payable in cash at the Closing (as defined in Section 3.1) delivered to Seller by Purchaser, as increased or decreased by prorations, credits, and adjustments as herein provided.

Section 1.3 Payment of Purchase Price. Subject to Section 3.4 below, the balance of the Purchase Price shall be paid by Purchaser to Seller at the Closing by wire transfer of immediately available federal funds to a bank account designated by Seller in writing.

Section 1.4 Escrow Agent; Deposits.

(a) Within two (2) Business Days of the Effective Date, Purchaser shall deposit with First American Title Insurance Company ("Escrow Agent"), the sum of Seven Hundred Fifty Thousand and 00/100 Dollars ($750,000.00) (together with all interest earned thereon, the "Deposit") by wire transfer of immediately available federal funds.

(b) Escrow Agent shall hold the Deposit in an interest bearing, federally insured escrow account in accordance with the terms and conditions of this Agreement to be disbursed as provided in this Agreement.

(c) Notwithstanding anything to the contrary provided in this Agreement, in each instance where this Agreement provides that the Deposit shall be provided or returned to Purchaser, subject to Section 1.5 below, Escrow Agent shall disburse the Deposit to Purchaser save and except for the amount of $10 thereof which shall be disbursed by Escrow Agent to Seller and retained by Seller as independent consideration to Seller for Seller's execution of this Agreement.

Section 1.5 Escrow Agent.

(a) If Seller or Purchaser claims that it is entitled to receive all or any portion of the Deposit pursuant to the terms of this Agreement, that party shall notify Escrow Agent in writing and shall simultaneously deliver written notice of its claim to the other party. Except as set forth below, if Escrow Agent does not receive a written objection from or on behalf of the other party within ten (10) days after receipt of the claiming party's notice, Escrow Agent shall deliver to the claiming party all or that portion of the Deposit claimed by the claiming party. If Escrow Agent receives conflicting instructions or claims from Seller and Purchaser, Escrow Agent shall continue to hold the Deposit until jointly directed by Seller and Purchaser or until otherwise directed by a court of competent jurisdiction. Notwithstanding the foregoing, Escrow Agent shall rely upon and follow the sole instruction of Purchaser in the event Purchaser requests the Deposit upon a termination pursuant to Sections 2.1, 2.2 or 7.2 of this Agreement. Escrow Agent may at any time discharge its duties hereunder by depositing the Deposit with a court of competent jurisdiction and notifying Seller and Purchaser.

(b) The parties acknowledge that Escrow Agent is holding the Deposit solely as a stakeholder at their request and for their convenience, that Escrow Agent shall not be deemed to be the agent of either party in carrying out its role as escrow agent hereunder, and that Escrow Agent shall not be liable to either party for any act or omission on its part unless taken in willful disregard of this Agreement or involving its gross negligence or willful misconduct. Seller and Purchaser jointly and severally indemnify and hold Escrow Agent harmless from and against any and all claims, liabilities and out-of-pocket expenses (including reasonable out-of-pocket attorneys' fees and disbursements and court costs) which Escrow Agent may incur in connection with the performance of its duties hereunder, except with respect to actions or omissions taken by Escrow Agent in willful disregard of this Agreement or involving Escrow Agent's gross negligence or willful misconduct.

(c) Escrow Agent has acknowledged its agreement to act as escrow agent in accordance with this Agreement by signing in the place indicated on the signature page of this Agreement.

(d) Since the Deposit will be held in an interest bearing escrow account, Seller and Purchaser each agree to deliver to Escrow Agent a IRS Form W-9 upon the execution and delivery of this Agreement. All interest earned on the Deposit shall be deemed to have been earned by the party to whom such interest is received pursuant to this Agreement.

ARTICLE II

TITLE, SURVEY, DUE DILIGENCE AND APPROVALS

Section 2.1 Condition of Title.

(a) Purchaser may elect to order, at its sole cost and expense (i) a survey of the Real Property by a licensed surveyor or registered professional engineer selected by Purchaser ("Survey"); and (ii) a commitment for a policy of title insurance ("Title Commitment") issued by Escrow Agent or another nationally recognized title insurance company ("Title Company") which shall include a schedule of all title exceptions (and include copies of all recorded title exceptions as shown in the Title Commitment) (the "Title Exceptions"). Purchaser shall promptly forward copies of the Survey and Title Commitment to Seller and its counsel upon receipt. As used herein, the term "Title and Survey Objection" shall mean any lien or title defect, exception or matter regarding the Real Property which is unacceptable to Purchaser as indicated by Purchaser in a written notice provided to Seller in accordance with this Section 2.1.

(b) Prior to the end of the Inspection Period (as defined in Section 2.2), Purchaser shall deliver to Seller and Escrow Agent written notice of any and all Title and Survey Objections that it may have. Subject to the provisions of Section 2.1(c), if Purchaser does not deliver a written notice to Seller and Escrow Agent of its Title and Survey Objection to any particular lien, title defect, exception or matter regarding the Real Property that is revealed or disclosed to Purchaser via the Title Commitment or the Survey by such date and time, then Purchaser shall be deemed to have waived its right to object to such lien, title defect, exception or other matters regarding the Real Property, and all such matters shall be deemed accepted by Purchaser in their "AS IS" condition.

(c) Prior to the Closing Date (as defined in Section 3.1), Purchaser shall have the right to order an update or a date-down of the Title Commitment and/or the Survey, and shall have the right, by sending a written notice to Seller and Escrow Agent not later than ten (10) days after Purchaser receives such update or date-down, but in all events prior to the Closing Date, to make any objections to any lien, title defect, exception or other title or survey matter regarding the Real Property (a "New Matter Objection") which is (i) first revealed or disclosed to Purchaser on such update or date-down (i.e., it was not revealed or disclosed in the Title Commitment or the Survey); provided, however, that Purchaser shall not have the right to make a New Matter Objection on the basis of any of the following: (1) any lien, defect, exception or other matter revealed or disclosed to Purchaser via the Title Commitment or the Survey prior to the end of the Inspection Period); (2) any lien or other matter created or caused by Purchaser or its agents, employees, contractors, subcontractors, consultants or other representatives ("Purchaser's Representatives"); and (3) the lien of real property taxes and assessments not yet due and payable. If Purchaser does not deliver a written notice to Seller and Escrow Agent of its New Matter Objection to any particular lien, title defect, exception or matter regarding the Real Property by not later than ten (10) days after Purchaser receives an applicable update or date-down of the Title Commitment and/or the Survey, but in all events prior to the Closing Date, then Purchaser shall be deemed to have waived its right to object to such matter.

After its timely receipt of a notice specifying Title and Survey Objections or New Matter Objections, as the case may be (each, an "Objection" and collectively, the "Objections"), Seller shall have the option, in its sole and absolute discretion, and at its sole cost and expense, to remedy and remove any Objections and render the title marketable and insurable at regular rates at or prior to the Closing. Notwithstanding the foregoing, Seller shall be required to satisfy or remove and cause to be released or discharged of record at the Closing the following liens against the Property: (i) the lien of any mortgage, security agreement, financing statement or other instrument which evidences or secures indebtedness, that was voluntarily recorded against the Real Property by, at the direction of, or with the consent of Seller; (ii) mechanic's liens (excluding liens relating to work or materials commissioned by Purchaser or any of Purchaser's Representatives), judgment liens against Seller and real estate tax and assessment liens; (iii) liens which were created, consented to or permitted by Seller following the Effective Date without the approval of Purchaser as provided in Section 8.22(a); and (iv) any other liens which have been filed against the Property and reduced to a liquidated sum (excluding any such liens filed by or against Purchaser or any of Purchaser's Representatives) ("Required Removal Exceptions"). Within ten (10) Business Days after Seller's timely receipt of Purchaser's notice describing any Objections, Seller shall notify Purchaser in writing as to whether or not Seller elects to remedy and remove any of such Objections (other than the Required Removal Exceptions, which Seller shall be required to remedy and remove). However, if Seller fails to so notify Purchaser in writing within the aforementioned allotted time, Seller shall be deemed to have elected to not remedy and remove such Objections. If Seller agrees in writing to remedy and remove any Objections, then Seller shall remedy and remove such Objections prior to the Closing, subject to applicable adjournment rights provided herein. If Seller elects, or is deemed to have elected, to not remedy and remove any Objections, Purchaser shall notify Seller and Escrow Agent in writing within ten (10) days

after Purchaser's receipt of Seller's notice electing to not remedy such Objections (or, if applicable, within ten (10) days after the date that Seller has been deemed to have elected to not remedy and remove such Objections), whether Purchaser elects to waive such Objections and to proceed to consummate the Closing (without any abatement or reduction in the Purchase Price) or to terminate this Agreement. If Purchaser fails to so notify Seller in writing within the aforementioned allotted time, Purchaser shall be deemed to have elected to waive such Objections and to proceed to consummate the Closing without any abatement or reduction in the Purchase Price. As used herein, the term "Permitted Exceptions" means all Title Exceptions other than the Objections, unless any such Objections are waived by Buyer, in which case such items shall be included in the Permitted Exceptions.

(d) If Purchaser elects to terminate this Agreement within the aforementioned allotted time, the Deposit shall be returned to Purchaser, and, upon the return of said sum, this Agreement shall terminate and be of no further force and effect and Seller and Purchaser shall be discharged of all liability, each to the other hereunder, except those liabilities which explicitly survive a termination of this Agreement.

(e) Seller and Purchaser shall each be entitled to adjourn the Closing Date upon written notice to the other and Escrow Agent in order to allow for the time periods set forth in this Section 2.1 to run their full course, it being agreed that the Closing Date shall be permitted to be extended to allow the parties the full time periods to respond to the other's notice or action under this Section 2.1, but in no event shall the adjournment exceed thirty (30) days after the scheduled date for Closing unless otherwise agreed to in writing by both parties.

(f) As used in this Agreement, the term "Business Day" shall mean any day other than (i) a Saturday or a Sunday, or (ii) a day observed as a holiday by the State of Maryland or the federal government.

Section 2.2 Inspection Period. As used herein, the term "Inspection Period" shall mean the period commencing on the Effective Date and expiring at 5:00 pm, Eastern Time on the date which is forty five (45) days thereafter.

(a) By no later than five (5) business days after the Effective Date, to the extent such documents are in Seller's possession, custody or control, Seller shall provide to Purchaser true, correct and complete copies of all of the books, records, files, documents, agreements, instruments and other materials relevant to the Property as set forth on Exhibit C (collectively, the "Inspection Documents") which Seller has in its possession, custody or control and which Seller has not previously provided to Buyer. Purchaser and Purchaser's Representatives may review the Inspection Documents and perform such studies, tests or inspections of the Property as Purchaser deems appropriate in its sole and absolute discretion, and at its sole cost, including, without limitation, zoning and land use investigations, environmental, soil, groundwater and vapor inspections and engineering and geotechnical inspections of the Real Property (collectively, the "Studies"). If Purchaser shall intend to carry out any inspections which will involve the physical disturbance of any portion of the Real Property, Purchaser shall give Seller at least five (5) days' prior written notice of such intention along with a summary of the intended actions. In the event this Agreement is terminated prior to Closing, upon Seller's written request and provided Seller reimburses Purchaser for Purchaser's out-of-pocket costs in connection therewith, Purchaser shall provide Seller with a copy of any third-party-prepared report with respect to any Purchaser-performed studies, tests or inspections of the Property.

(b) Seller agrees to provide Purchaser's Representatives with reasonable access to the Real Property for the purpose of conducting the Studies in accordance with the terms of this Agreement, in each instance upon one (1) business day notice and contingent upon the Seller's approval due to the nature of the research activity being conducted at the Property at the time of the notice; however, such approval will not be unreasonably withheld. Further, Purchaser agrees to abide by all security and access protocols of Seller before accessing the Property. Purchaser agrees to conduct all Studies at Purchaser's sole cost and expense.

(c) Any portions of the Real Property which are materially disturbed or otherwise materially damaged by Purchaser or Purchaser's Representatives shall, be promptly restored by Purchaser, at its sole cost and expense, to as near as practicable to their prior existing condition. Purchaser hereby agrees to protect, defend, indemnify and hold Seller and its members, officers, principals, employees and agents, and each of the respective affiliates of the foregoing (collectively, "Seller Parties") harmless from and against any and all liabilities, claims, losses and damages, demands, judgments and out-of-pocket costs and expenses (including reasonable attorneys' fees and expenses) which Seller or any of Seller Parties incur as a result of physical damage to the Real Property or injury to persons on the Real Property which were determined by a final order of a court of competent jurisdiction to have been caused by, or to have resulted from, the conduct of the Studies or any other entry onto the Real Property by Purchaser or Purchaser's Representatives; provided, however, that Purchaser shall not be responsible for any of the foregoing which may result from any pre-existing condition or defect in the Real Property, such as the presence, or exacerbation of, any hazardous substance. The foregoing indemnity and hold harmless obligation shall survive the Closing or the termination of this Agreement.

(d) If, during the Inspection Period, Purchaser determines in its sole discretion, for any reason or for no reason at all, that the Property is not satisfactory for Purchaser's purposes, Purchaser may elect to terminate this Agreement by delivering its written notice of termination to Seller and Escrow Agent prior to the expiration of the Inspection Period. Upon such termination, Purchaser shall be entitled to the return of the Deposit, following the return of which sum this Agreement shall terminate and be of no further force and effect and Seller and Purchaser shall be discharged of all liability, each to the other hereunder, except those liabilities which explicitly survive the termination of this Agreement.

ARTICLE III

CLOSING

Section 3.1 Closing of Title. Provided that all contingencies to the consummation of the Closing which are expressly specified herein shall have been satisfied or waived, the consummation of the transactions contemplated hereby (the "Closing") shall be conducted and completed via mail in escrow between counsel for Seller and Purchaser and Escrow Agent on October 1, 2021 (subject to the express adjournment rights herein, the "Closing Date").

Section 3.2 Seller's Obligations at the Closing. In connection with the Closing, Seller shall deliver to Purchaser:

(a) possession of the Property, together with all keys that are in Seller's possession, security codes, passwords and combinations to the Property, if any;

(b) a duly executed and acknowledged general warranty deed conveying good and marketable fee simple title to the Land in the form attached hereto as Exhibit D (the "Deed") subject to the Permitted Exceptions;

(c) all tax declaration forms associated with any applicable Maryland documentary stamp taxes, City conveyance taxes and any other stamp, transfer or conveyance taxes associated with the recordation of the Deed and/or the payment of the Purchase Price;

(d) a duly executed affidavit of title reasonably acceptable to the Title Company;

(e) a duly executed omnibus bill of sale, assignment and assumption agreement in the form attached hereto as Exhibit E effecting the sale and assignment of all of the Other Property (the "Omnibus Assignment");

(f) evidence of the existence, organization, good standing and authority of Seller and the authority of the person(s) executing documents on behalf of Seller reasonably satisfactory to Title Company and Purchaser;

(g) a duly executed certification that Seller is not a "foreign person" for purposes of Section 1445 of the Internal Revenue Code of 1986, as amended, in the form attached hereto as Exhibit F;

(h) a duly executed certification of exemption from withholding from Seller in accordance with Md. Tax-General Code Ann. §10-912;

(i) a duly executed certificate from Seller which confirms that Seller's representations and warranties set forth herein are true and correct in all material respects as of the Closing Date except as provided in such certificate ("Seller's Closing Certificate");

(j) a duly executed closing statement showing the Purchase Price and all credits and prorations thereto in a form mutually agreed by Purchaser and Seller (the "Closing Statement"). Seller and Purchaser hereby designate Escrow Agent as the "reporting person" for the transaction pursuant to Section 6045(e) of the Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder and agree to execute such reasonable documentation as is reasonably necessary to effectuate such designation; and

(k) such other and further documents as may be reasonably required to consummate the sale and purchase contemplated hereby which are not inconsistent with this Agreement.

Section 3.3 Purchaser's Obligations at the Closing. In connection with the Closing, Purchaser shall deliver to Seller:

(a) the balance of the Purchase Price due and payable on the Closing Date, subject to Sections 3.4 and 3.5 below, as well as a direction to Escrow Agent to comply with Section 3.4 below;

(b) a certificate duly executed by Purchaser which confirms that Purchaser's representations and warranties set forth herein are true and correct in all material respects as of the Closing Date except as provided in such certificate;

(c) the Closing Statement, duly executed by Purchaser;

(d) evidence of the existence, organization, good standing and authority of Purchaser and the authority of the person(s) executing documents on behalf of Purchaser reasonably satisfactory to Seller; and

(e) such other and further documents as may be reasonably required to consummate the sale and purchase contemplated hereby which are not inconsistent with this Agreement.

Section 3.4 Escrow Agent's Obligations at the Closing. Provided that all contingencies to the consummation of the Closing which are expressly specified herein shall have been satisfied or waived, on the Closing Date, Seller and Purchaser shall jointly direct Escrow Agent to disburse the Deposit to Seller in payment of a portion of the Purchase Price. Escrow Agent agrees that it shall follow such joint direction in accordance with its terms.

Section 3.5 Credits and Prorations.

(a) Real estate taxes and assessments levied against the Real Property as well as sewer charges, water rents, assessments, and all other items typically adjusted upon the sale of commercial real estate in Frederick County, Maryland, shall be apportioned with respect to the Real Property as of 12:01 a.m. on the Closing Date, as if Purchaser were vested with title to the Real Property during the entire day upon which the Closing occurs; provided, however, that with respect to real estate taxes (i) if there are any tax appeals pending as of the Closing Date, all amounts credited to the Real Property or otherwise received as a result thereof, together with interest thereon, shall be payable to Seller, except as to the year in which the Closing shall occur, any amounts credited to the Real Property or otherwise received as a result thereof shall be apportioned between Seller and Purchaser as of the Closing Date on a pro-rata basis after the deduction of all out-of-pocket costs of recovery (including reasonable out-of-pocket attorneys' fees and costs) and Seller's portion thereof (together with all out-of-pocket costs of recovery, including reasonable attorneys' fees and costs) shall be payable to Seller and (ii) all assessments for public improvements which have been physically completed as of the Closing Date are to be paid by Seller in full in connection with the Closing from the proceeds of the Purchase Price.

(b) On the Closing Date, in connection with the consummation of the Closing, at Purchaser's request, Seller will assign to Purchaser any deposits that Seller maintains with utility companies applicable to the Real Property. In the event of any such assignment, the amount of any such deposit shall be paid to Seller by Purchaser on the Closing Date separate and apart from the Purchase Price.

(c) Seller shall be entitled to continue or decline, at its option, to prosecute any tax appeals which may be pending as of the Closing Date, however, Seller shall take no action to appeal, forego appeal, settle or compromise taxes for the tax year in which the Closing shall occur without the reasonable approval of Purchaser.

(d) Seller and Purchaser agree to cooperate with one another in good faith for a period of one (1) year following the Closing to correct any errors in credits or prorations in connection with the Closing and to "true-up" any prorations which were estimated as of the Closing. In connection with the foregoing, Seller and Purchaser agree to promptly pay to the party entitled thereto any refund, credit or other payment necessary to correct such errors or affect such "true-up".

(e) The provisions of this Section 3.5 shall survive the Closing.

Section 3.6 Closing Costs.

(a) Seller shall pay (i) the fees of any counsel representing Seller in connection with this Agreement and the transactions contemplated hereby, and (ii) all recording charges pertaining to the removal of any mortgages, liens, exceptions or encumbrances in accordance with Section 2.1.

(b) Purchaser shall pay (i) the fees of any counsel representing Purchaser in connection with this Agreement and the transactions contemplated hereby, (ii) the fees, costs and expenses of any title examinations prepared by Title Company, (iii) the fees and costs, if any, related to any surveys, inspections and other reports commissioned by Purchaser in connection with the Studies and the transactions contemplated by this Agreement, (iv) all recording charges pertaining to the recording of the Deed, and (v) all title insurance premiums and costs.

(c) The Parties shall equally divide any documentary stamp taxes, city or county conveyance taxes and any other stamp, transfer or conveyance taxes imposed by the State of Maryland, the County of Frederick, the City of Frederick or any other governmental authorities in connection with the payment of the Purchase Price in connection with the transactions contemplated at the Closing.

(d) All other costs and expenses incident to the transactions contemplated hereby and the Closing shall be paid by the party incurring same.

Section 3.7 Conditions Precedent to Obligation of Purchaser to Consummate the Closing. The obligation of Purchaser to consummate the Closing shall be subject to the fulfillment, satisfaction or waiver by Purchaser of the following conditions (it being understood that Purchaser shall be deemed to have waived any of the following conditions which are unfulfilled as of the Closing Date if Purchaser decides to consummate the Closing despite such condition being unfulfilled, except to the extent of the survival of representations and warranties set forth herein):

(a) Seller shall have performed and observed, in all material respects, all covenants and agreements of this Agreement to be performed and observed by Seller;

(b) All representations and warranties of Seller set forth herein shall be true and correct in all material respects as of the Closing Date as if made on the Closing Date;

(c) No material change shall have occurred in the condition of the Property since the expiration of the Inspection Period and no litigation shall have been commenced since the Effective Date which, if adversely determined, could reasonably be expected to have a material adverse impact on the Property; and

(d) Seller has obtained the Seller Approvals (hereinafter defined).

(e) Purchaser has obtained all licenses, permits, consents, approvals or similar authorizations necessary to acquire at Closing and operate thereafter the Cesium Irradiator (and all equipment and property related thereto) located in the Improvements.

In the event that any of the foregoing conditions precedent shall not have been satisfied by the Closing Date, Purchaser may terminate this Agreement upon written notice to Seller and Escrow Agent, whereupon Escrow Agent shall promptly return the Deposit to Purchaser. Further, in the event of a termination of this Agreement in connection with the condition precedent in Section 3.7(d) having not been satisfied, Purchaser shall also be immediately entitled to receive upon written demand payment from Seller to reimburse Purchaser for all actual, reasonable out-of-pocket costs incurred by Purchaser in connection with the purchase and sale transaction contemplated by this Agreement, including, without limitation, costs associated with Purchaser's negotiation of this Agreement (including, without limitation, all expenses) and its performance of the Studies ("Purchaser's Reimbursable Costs") in an amount not to exceed $250,000.00 ("Purchaser's Reimbursable Costs Cap"). Following such termination and the return of the Deposit and Purchaser's Reimbursable Costs, if applicable, this Agreement shall terminate and be of no further force and effect except for any provisions hereof which shall survive a termination. However, nothing in the foregoing is intended to deprive Purchaser of its right to exercise its rights and remedies under Article VI if a failure of any of the foregoing conditions precedent to be satisfied is the result of a breach or default of this Agreement by Seller or its representatives, or limit Seller's obligations pursuant to Section 3.8 below.

Section 3.8 Conditions Precedent to Obligation of Seller to Consummate the Closing. The obligation of Seller to consummate the Closing shall be subject to the fulfillment, satisfaction or waiver by Seller of the following conditions (it being understood that Seller shall be deemed to have waived any of the following conditions which are unfulfilled as of the Closing Date if Seller decides to consummate the Closing despite such condition being unfulfilled, except to the extent of the survival of representations and warranties set forth herein):

(a) Purchaser shall have performed and observed, in all material respects, all covenants and agreements of this Agreement to be performed and observed by Purchaser;

(b) Seller has obtained the written approval of (i) the Board of Directors of Seller and (ii) any judicial or quasi-judicial regulatory body, including all applicable Municipal, County and State authorities, who may have jurisdiction over the transfer of any assignable Permit (as contemplated in Section 5.1(i)(v) below) or any aspect of the transactions contemplated herein, to enter into the transactions contemplated herein (collectively, the "Seller Approvals"); and

(c) All representations and warranties of Purchaser set forth herein shall be true and correct in all material respects as of the Closing Date as if made on the Closing Date.

In the event that any of the foregoing conditions precedent shall not have been satisfied by the Closing Date, Seller may terminate this Agreement upon written notice to Purchaser and Escrow Agent, whereupon Escrow Agent shall promptly return the Deposit to Purchaser. Further, as a condition of Seller's termination of this Agreement in connection with the condition precedent in Section 3.8(b) having not been satisfied, Purchaser shall also be immediately entitled to receive upon written demand payment from Seller to reimburse Purchaser for Purchaser's Reimbursable Costs in an amount not to exceed Purchaser's Reimbursable Costs Cap. Following any such termination and the return of the Deposit and payment of Purchaser's Reimbursable Costs, if applicable, this Agreement shall terminate and be of no further force and effect except for any provisions hereof which shall survive a termination. However, nothing in the foregoing is intended to deprive Seller of its right to exercise its rights and remedies under Article VI if a failure of any of the foregoing conditions precedent to be satisfied is the result of a breach or default of this Agreement by Purchaser or its representatives.

ARTICLE IV

SELLER COVENANTS

Section 4.1 Covenants of Seller.

(a) Between the Effective Date and the Closing Date, Seller shall not knowingly cause any easements, restrictions, liens or other encumbrances to be filed or recorded against the Real Property by or through its actions without Purchaser's approval.

(b) Between the Effective Date and the Closing Date, Seller shall operate and maintain the Property in a manner consistent with Seller's past practices.

(c) Between the Effective Date and the Closing Date, Seller shall not enter into or otherwise modify any lease, license, agreement or contract of any nature that is or will be binding on the Property or that would be binding on Purchaser following the Closing without Purchaser's approval.

(d) Seller will not cause, consent to or otherwise permit any material adverse change to the Property between the Effective Date and the Closing Date.

(e) Between the Effective Date and the Closing Date, Seller shall maintain and keep in full force and effect all insurance policies concerning the Property that are in effect as of the Effective Date and such other insurance as would be carried by a reasonably prudent owner of the Property.

(f) Seller shall promptly notify Purchaser upon receipt of any notice with respect to or otherwise concerning the Property received from any governmental organization, agency or authority or any utility company, and provide copies of the same to Purchaser.

(g) Between the Effective Date and the Closing Date, Seller shall maintain in full force and effect all Permits (as defined herein).

(h) Seller shall use diligent, commercially reasonable best efforts to obtain the Seller's Approvals on or before the date which is five (5) Business Days prior to the Closing Date. As soon as practicable following the receipt by Seller of the Seller's Approvals, Seller shall immediately (but no later than one (1) Business Day) notify Purchaser in writing that the condition precedent in Section 3.8(b) has been satisfied.

ARTICLE V

REPRESENTATIONS AND WARRANTIES

Section 5.1 Representations and Warranties of Seller. Seller hereby makes the following representations and warranties to Purchaser:

(a) Organization and Authority. Seller has been duly organized and is validly existing and in good standing as a non-profit corporation under the laws of the State of Alabama. Seller has the full right and authority to enter into this Agreement and to transfer the Property pursuant hereto and to consummate or cause to be consummated the transaction contemplated herein. The person signing this Agreement on behalf of Seller is authorized to do so. Assuming the due authorization, execution and delivery of this Agreement by and on behalf of Purchaser, this Agreement constitutes a valid and binding obligation of Seller enforceable against Seller in accordance with its terms, subject to the effects of bankruptcy, insolvency, reorganization, receivership and other similar laws affecting the rights and remedies of creditors and principles of equity. Neither the execution and delivery hereof, nor the taking of any of the actions contemplated hereby, will conflict with or result in a breach of any of the provisions of, or constitute a default, event of default or event creating a right of acceleration, termination or cancellation under any document, judgment, award, decree or other order of a court of competent jurisdiction to which Seller is bound.

(b) Pending Actions. There are no actions, suits, arbitrations, or other proceedings pending against Seller or the Property or the transactions contemplated by this Agreement, which, if adversely determined, could individually or in the aggregate have an adverse effect on the Property, on Seller's ability to transfer its title to the Property in the manner contemplated herein or which could in any material way interfere with the consummation by Seller of the transactions contemplated by this Agreement. There are no tax appeals pending with respect to the Real Property.

(c) Environmental Matters. Seller has received no written notice from any governmental authority, and otherwise Seller has no knowledge, of the presence on, in, below or about the Real Property of any Hazardous Substance in violation of any applicable Environmental Laws. As used herein, "Hazardous Substance" means any hazardous, dangerous or toxic materials, substances, pollutants, contaminants, or wastes currently identified as a hazardous substance or waste (including asbestos or polychlorinated biphenyl) in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. §§9601, et seq., Solid Waste Disposal Act, 42 U.S.C. §§6901, et seq., the Superfund Amendments and Reauthorization Act, 40 U.S.C. §§1101, et seq. and the Resource Conservation and Recovery Act, 42 U.S.C. §§6901, et seq., in each case together with its implementing regulations, guidance and policies and amendments thereto, and any other federal, state or local statute, law, code, rule, regulation, order, judgment, decree, legislation, ordinance, equitable doctrine or other requirement of any governmental authority affecting any portion of the Real Property or any Seller with respect to, pertaining to or otherwise relating to health and safety, the environment, any hazardous, toxic or dangerous waste, substance or material, including, without limitation, those relating to soil and groundwater conditions (collectively, "Environmental Laws").

(d) Notice of Violation of Law. Seller has not received any written notice from any federal, state, county or municipal authority which alleges that the Property is not in compliance with any statute, rule, regulation or ordinance applicable to the Property, and to Seller's knowledge, the Property is not in violation of any statue, rule, regulation or ordinance applicable to the Property, including but not limited to the City of Frederick Land Management Code, Ordinance No G-20-15 (Supp. No. 9)

(e) Bankruptcy and Insolvency. Seller is solvent, has not filed any voluntary petition in bankruptcy or been adjudicated as bankrupt or insolvent, has not been the subject of an involuntary proceeding in bankruptcy which has not been vacated or stayed within thirty (30) days of the filing of such proceeding, and has not filed any petition or answer seeking any reorganization, liquidation, dissolution or similar relief under any federal bankruptcy or insolvency laws, or other relief for debtors, and has not sought or consented to or acquiesced in the appointment of any trustee, receiver, conservator or liquidator of all or any substantial part of its assets or its interest in any property. No court of competent jurisdiction has entered an order, judgment, or decree approving a reorganization, arrangement, composition, readjustment, liquidation, dissolution or similar relief under any federal bankruptcy act, and no liquidator of Seller or of all or any substantial part of its assets or its interest in any property has been appointed. Seller has not admitted in writing or otherwise alleged to any person or entity that it is insolvent or is suspending or under the pending suspension of its operations.

(f) No Leases, Contracts or Agreements. There are no agreements or contracts of any kind, including leases, subleases, licenses or other occupancy agreements, supply contracts, service contracts or farming agreements (whether acreage or tonnage), which are in effect with respect to the Real Property that will be binding on Purchaser or the Real Property following the Closing. In addition, Seller has not entered into any oral leases, rental agreements, licenses, license agreements or other occupancy agreements nor has it entered into any oral extensions, amendments or modifications to any leases, rental agreements, licenses, license agreements or other occupancy agreements affecting the Real Property.

(g) No Condemnation. Seller has not received written notice of any pending condemnation or eminent domain proceedings affecting the Real Property.

(h) Utility Deposits and Rollback Assessments. Seller maintains no deposits with utility companies applicable to the Real Property and the Real Property is fully assessed for tax purposes and is not subject to any farmland or other reduced assessment that would subject Purchaser to a rollback assessment after the Closing.

(i) Regulatory Matters.

(i) Seller and its respective employees and agents hold all permits, certificates, licenses, variances, registrations, exemptions, orders, consents and approvals (collectively, "Permits") from the U.S. Food and Drug Administration (the "FDA") and any other governmental entity necessary for the lawful operation of the businesses of Seller conducted at the Real Property, including Permits required under the Federal Food, Drug, and Cosmetic Act for the testing of any chemicals or pharmaceuticals. Exhibit G sets forth a list of all Permits as of the date of this Agreement. All such Permits are valid, and in full force and effect. There has not occurred any violation of, default (with or without notice or lapse of time or both) under, or event giving to others any right of termination, amendment or cancellation of, with or without notice or lapse of time or both, any Permit. Seller is in compliance in all material respects with the terms of all Permits, and no event has occurred that, would reasonably be expected to result in the revocation, cancellation, non-renewal or adverse modification of any Permit.

(ii) Seller is and has been in compliance in all material respects with all applicable statutes, rules, regulations, decrees, writs and orders of the FDA and any other regulatory agency with respect to the labeling, storing, testing, development, manufacture, packaging and distribution of Seller products used at the Real Property. No investigation or review by any governmental entity with respect to the Real Property or any Seller activity related to the Real Property is pending or, to the Knowledge of Seller, threatened, nor has any governmental entity indicated an intention to conduct the same. All pre-clinical studies conducted by Seller at the Real Property have been and are being conducted in compliance in all material respects with applicable Permits, laws, regulations and guidances, including, without limitation, the applicable requirements of the FDA's current Good Manufacturing Practices, Good Laboratory Practices, Good Clinical Practices and other applicable requirements contained in 21 CFR Parts 312, 50, 54, 56 and 11.

(iii) In relation to the Real Property, there are no proceedings pending or, to Seller's Knowledge, threatened with respect to a violation or alleged violation by Seller of any rules and regulations of any applicable governmental authorities or regulatory bodies (including without limitation, the FDCA, FDA regulations adopted thereunder, the Controlled Substance Act or any other legislation or regulation promulgated by any other Seller regulatory agency). All applications, submissions, information and data utilized by any Seller as the basis for, or submitted by or on behalf of Seller or any of its Subsidiaries in connection with any and all requests for a Permit, when submitted to the FDA or other Seller regulatory agency, were true, correct and complete in all material respects as of the date of submission, and any updates, changes, corrections or modification to such applications, submissions, information and data required under applicable Laws have been submitted to the FDA or other Seller regulatory agency. To the Knowledge of Seller, no data generated by Seller with respect to products or services related to the Real Property is the subject of any action, either pending or threatened, by any Seller regulatory agency relating to the truthfulness or scientific adequacy of such data.

(iv) Seller has made available to Purchaser true, correct and complete copies of any and all Permits and regulatory documents related to the Property, including documents that indicate or suggest lack of compliance with the regulatory requirements of the FDA or other Seller regulatory agency.

(v) In connection with Closing, at no cost to Purchaser, Seller shall assign or cause to be assigned to Purchaser (or Purchaser's designee), to the extent assignable and useable by parties other than Seller, all the Permits. Further, with respect to such Permits which are not so assignable, Seller agrees to reasonably assist Purchaser in the execution of documents (including, without limitation, applications) and otherwise to provide commercially reasonable cooperation (as determined in Seller's reasonable discretion) in such respects, at no material cost to Seller, as may be requested by Purchaser to enable Purchaser to apply for and obtain such similar permits for Purchaser's (or its designee's) benefit. The provisions of this Section 5.1(i)(v) shall survive the Closing for a period of six (6) months. .

(j) OFAC and Anti-Corruption. Pursuant to United States Presidential Executive Order 13224 (the "Order"), the USA Patriot Act of 2001 (Public Law 107-56) ("Patriot Act"), the related rules and regulations of the Office of Foreign Assets Control ("OFAC") of the U.S. Department of the Treasury, and any enabling laws or other executive orders or regulations in respect thereof (the Patriot Act, the Order and such other rules, regulations, laws or orders are collectively referred in this Agreement as the "Anti-Terrorism Laws"), U.S. persons and entities are prohibited from transacting business with persons or entities who, from time to time are determined to have committed, or to pose a risk of committing or supporting, terrorist acts, narcotics trafficking, money laundering and related crimes. Those persons and entities are identified on a list of Specially Designated Nationals and Blocked Persons (the "List"), published and regulated by OFAC. The names, including aliases, of these persons or entities are updated frequently. In addition, OFAC enforces other Orders which, from time to time, impose restrictions on transactions with, or involving certain countries. Seller hereby certifies and represents that neither it, nor any of its owners, members of its governing body, management, employees, parent, subsidiary, affiliate, or agents is on the List or is acting for, or on behalf of, or otherwise associated (as that term is used in the Order) with, any person or entity on the List. Seller further acknowledges its obligation to remain in compliance with existing and future regulations promulgated by OFAC throughout the term of this Agreement.

(i) Seller represents and warrants that neither it nor its affiliates, nor any of their respective officers, directors, employees or agents have ever given, promised to give, received or solicited, anything of value, directly or indirectly, to or from any person for the purpose of inducing any such person, including any government official (domestic or foreign), to take any action to the benefit of Seller in connection with this Agreement, or as an inducement for Seller to take any action to the benefit of such other person in connection with this Agreement.

(ii) Seller covenants and agrees that it shall not give, promise to give, receive or solicit, anything of value, directly or indirectly, to or from any person for the purpose of inducing any such person, including any government official (domestic or foreign), to take any action for the benefit of Seller or its affiliates or their respective officers, directors, employees or agents in connection with this Agreement, or as an inducement for Seller or its affiliates or their respective officers, directors, employee or agents to take any action to the benefit of such other person in connection with this Agreement.

(iii) Seller represents and warrants that neither Seller nor any parent, subsidiary or affiliate entity of Seller (i) is listed on the Specially Designated Nationals and Blocked Persons List maintained by OFAC pursuant to the Order and/or on any other list of terrorists or terrorist organizations maintained pursuant to any of the rules and regulations of OFAC or pursuant to any of the other Anti-Terrorism Laws, (ii) is or will become a person or entity listed in or subject to the Order or (iii) knowingly engages or knowingly will engage in any dealings or transactions, or knowingly is or knowingly will be otherwise associated, with any such person or entity referred to in the foregoing clauses (i) and/or (ii).

(k) CFIUS. The transaction contemplated by this Agreement is not a covered transaction as defined in 31 C.F.R. § 800.213 or a covered real estate transaction as defined in 31 C.F.R. § 802.212.

Section 5.2 Survival of Seller's Representations and Warranties. The representations and warranties of Seller set forth in this Agreement shall survive the Closing for a period limited to twelve months after the Closing (the "Survival Period"), at which time they shall terminate unless Purchaser has notified Seller in writing of any breach prior to the expiration of the Survival Period and provided further that the damages from any breach by Seller for which timely notice has been given by Purchaser and which is in an amount reasonably likely to exceed $50,000.

Section 5.3 Representations and Warranties of Purchaser. Purchaser hereby makes the following representations and warranties to Seller:

(a) Organization and Authority. Purchaser has been duly organized and is validly existing and in good standing as a corporation under the laws of the State of Nevada. Purchaser has the full right and authority to enter into this Agreement and to acquire the Property pursuant hereto and to consummate or cause to be consummated the transaction contemplated herein. The person signing this Agreement on behalf of Purchaser is authorized to do so. Assuming the due authorization, execution and delivery of this Agreement by and on behalf of Seller, this Agreement constitutes a valid and binding obligation of Purchaser enforceable against Purchaser in accordance with its terms, subject to the effects of bankruptcy, insolvency, reorganization, receivership and other similar laws affecting the rights and remedies of creditors and principles of equity. Neither the execution and delivery hereof, nor the taking of any of the actions contemplated hereby, will conflict with or result in a breach of any of the provisions of, or constitute a default, event of default or event creating a right of acceleration, termination or cancellation under the organizational documents of Purchaser or under any instrument, note, mortgage, contract, judgment, order, award, decree or other agreement to which Purchaser is a party, or by which Purchaser is otherwise bound.

(b) Pending Actions. There is no action, suit, arbitration, unsatisfied order or judgment, government investigation or proceeding pending against Purchaser which, if adversely determined, could individually or in the aggregate materially interfere with the consummation by Purchaser of the transaction contemplated by this Agreement.

(c) Bankruptcy and Insolvency. Purchaser is solvent, has the financial capacity to fulfill its obligations hereunder, has not filed any voluntary petition in bankruptcy or been adjudicated as bankrupt or insolvent, has not been the subject of an involuntary proceeding in bankruptcy which has not been vacated or stayed within thirty (30) days of the filing of such proceeding, and has not filed any petition or answer seeking any reorganization, liquidation, dissolution or similar relief under any federal bankruptcy or insolvency laws, or other relief for debtors, and has not sought or consented to or acquiesced in the appointment of any trustee, receiver, conservator or liquidator of all or any substantial part of its assets or its interest in any property. No court of competent jurisdiction has entered an order, judgment, or decree approving a reorganization, arrangement, composition, readjustment, liquidation, dissolution or similar relief under any federal bankruptcy act, and no liquidator of Purchaser or of all or any substantial part of its assets or its interest in any property has been appointed. Purchaser has not admitted in writing or otherwise alleged to any person or entity that it is insolvent or is suspending or under the pending suspension of its operations.

(d) Patriot Act Compliance. Neither Purchaser nor any parent, subsidiary or affiliate entity of Purchaser (i) is listed on the Specially Designated Nationals and Blocked Persons List maintained by OFAC pursuant to the Order and/or on any other list of terrorists or terrorist organizations maintained pursuant to any of the rules and regulations of OFAC or pursuant to any of the other Anti-Terrorism Laws, (ii) is or will become a person or entity listed in or subject to the Order or (iii) knowingly engages or knowingly will engage in any dealings or transactions, or knowingly is or knowingly will be otherwise associated, with any such person or entity referred to in the foregoing clauses (i) and/or (ii). No portion of the Purchase Price has been or will be derived by Purchaser in violation of any of the Anti-Terrorism Laws or from any other person or entity described in the foregoing sentence. The Purchaser is not considered a "foreign person," as that term is defined in 31 C.F.R. § 800.224.

Section 5.4 Survival of Purchaser's Representations and Warranties. The representations and warranties of Purchaser set forth in Section 5.3 above shall survive the Closing for a period limited to twelve months after the Closing.

ARTICLE VI

DEFAULT AND REMEDIES

Section 6.1 Seller's Remedies for Purchaser's Default at or prior to the Closing**.** If (a) Purchaser fails to perform any of its obligations under this Agreement at or prior to the consummation of the Closing for any reason except failure by Seller to perform hereunder or failure of an express condition precedent to Purchaser's obligation to consummate the Closing as set forth in Section 3.7 (and thereafter fails to remedy such default within ten (10) days after Seller's written notice to Purchaser specifying such default, during which period Purchaser shall diligently pursue such remedy), or (b) on or prior to the Closing Date any one or more of Purchaser's representations or warranties are discovered by Seller to have been breached in any material respect, Seller shall be entitled, as its sole and exclusive remedy (except as provided in Section 6.3(a) and (b) below), TO TERMINATE THIS AGREEMENT UPON WRITTEN NOTICE TO PURCHASER AND ESCROW AGENT AND RECEIVE AND RETAIN THE DEPOSIT AS LIQUIDATED DAMAGES FOR THE DEFAULT BY PURCHASER UNDER THIS AGREEMENT; IT BEING EXPRESSLY AGREED BETWEEN THE PARTIES HERETO THAT THE ACTUAL DAMAGES TO SELLER IN THE EVENT OF SUCH BREACH ARE DIFFICULT AND IMPRACTICAL, IF NOT IMPOSSIBLE, TO ASCERTAIN AND THE AMOUNT OF THE DEPOSIT IS A FAIR AND REASONABLE ESTIMATE THEREOF. UPON SUCH TERMINATION AND RECEIPT OF THE DEPOSIT, THIS AGREEMENT SHALL BE TERMINATED AND NEITHER PARTY SHALL HAVE ANY FURTHER LIABILITY TO THE OTHER EXCEPT TO THE EXTENT OF ANY OBLIGATIONS WHICH EXPRESSLY SURVIVE A TERMINATION AND EXCEPT AS PROVIDED IN SECTION 6.3 BELOW.

Section 6.2 Purchaser's Remedies for Seller's Default at or prior to the Closing. If (a) Seller fails to perform its obligations under this Agreement for any reason except failure by Purchaser to perform hereunder or failure of an express condition precedent to Seller's obligation to consummate the Closing as set forth in Section 3.8 (and thereafter fails to remedy such default within ten (10) days after Purchaser's written notice to Seller specifying such default, during which period Seller shall diligently pursue such remedy), or (b) on or prior to the consummation of the Closing any one or more of Seller's representations or warranties are discovered by Purchaser to have been breached in any material respect, Purchaser shall be entitled, as its sole and exclusive remedy in such event (except as provided in Section 6.3 below), either to (x) terminate this Agreement upon written notice to Seller and Escrow Agent and receive the Deposit, or (y) seek specific performance of this Agreement by Seller (and any costs or expenses incurred by Purchaser in seeking specific performance shall be credited against the Purchase Price at Closing). Notwithstanding anything herein to the contrary, if (i) the remedy of specific performance is not available due to the nature of Seller's default, or (ii) Seller has fraudulently and willfully caused a material misrepresentation of an express representation or warranty of Seller in this Agreement, or (iii) Purchaser terminates under this Section 6.2 prior to the satisfaction of the condition precedent described in Section 3.7(d) above, then Seller shall also reimburse Purchaser for Purchaser's Reimbursable Costs in an amount not to exceed Purchaser's Reimbursable Costs Cap. In the event Purchaser seeks specific performance in accordance with this Section 6.2, Purchaser shall have the right to injunctive or other equitable relief of its rights under this Agreement, in addition to any and all other rights and remedies at law or in equity, and all such rights and remedies shall be cumulative. The parties agree that the remedies at law for any breach or threatened breach, including monetary damages, may be inadequate compensation for any loss and that any defense in any action for specific performance that a remedy at law would be adequate is waived. Upon any termination and receipt of Purchaser's Reimbursable Costs, if applicable, and the Deposit pursuant to this Section 6.2, this Agreement shall terminate and neither party shall have any further liability to the other except to the extent of any obligations which expressly survive a termination and except as provided herein and in Section 6.3 below.

Section 6.3 Additional Special Remedies. Notwithstanding anything in this Article VI to the contrary:

(a) Seller and Purchaser shall be entitled to strictly enforce the indemnities provided herein. Further, the limitations on the enforcement of remedies provided in this Article VI shall not affect or otherwise limit the right of Seller or Purchaser to enforce any remedy at law or in equity in the event of the breach of an obligation of the other party hereunder which expressly survives the Closing or sooner termination of this Agreement.

(b) In the event the parties agree to resolve any dispute hereunder prior to an adjudication by a court of competent jurisdiction, each party shall be responsible for its respective attorneys' fees and expenses.

ARTICLE VII

TAKING, CASUALTY AND BROKERS

Section 7.1 Taking or Casualty. In the event of a taking of a portion of the Land by the power of eminent domain or a fire or other casualty causing damage or destruction to the Real Property, Seller shall promptly notify Purchaser and Purchaser shall be afforded the opportunity to participate in any discussions or consultations with condemning authorities and Seller's insurance companies in the adjustment of any insurance claim. In the event of a taking of a portion of the Land by the power of eminent domain or a fire or other casualty causing damage or destruction to the Real Property which is not "Major" (as defined in Section 7.3), this Agreement shall remain in full force and effect, Purchaser shall pay Seller the Purchase Price in accordance with Sections 1.2 and 1.3, and Seller shall pay over and assign to Purchaser in connection with the Closing all of Seller's right, title and interest to any claims and proceeds Seller may have with respect to any condemnation awards relating to the Real Property or insurance proceeds relating to the casualty; however, Purchaser shall be entitled to a credit in the Purchase Price in the amount of any deductible under Seller's insurance policies or any self-insured retention.

Section 7.2 Major Taking or Casualty. In the event of a "Major" taking of the Land by the power of eminent domain or a fire or other casualty causing damage or destruction to the Real Property which is "Major", Purchaser may terminate this Agreement by written notice to Seller and Escrow Agent and receive the Deposit, in which event the parties hereto shall have no further rights or obligations hereunder, other than those that by their terms survive the termination of this Agreement. If Purchaser does not elect to terminate this Agreement within thirty (30) days after Seller sends Purchaser written notice of the occurrence of a Major taking or casualty, then Purchaser shall be deemed to have elected to proceed with the consummation of the Closing, in which event Seller shall pay over and assign to Purchaser in connection with the Closing all of Seller's right, title and interest to any claims and proceeds Seller may have with respect to any condemnation awards relating to the Real Property or insurance proceeds relating to the casualty and Purchaser shall pay Seller the Purchase Price on the Closing Date without abatement or reduction; except that Purchaser shall be entitled to a credit in the Purchase Price in the amount of any deductible under Seller's insurance policies or any self-insured retention.

Section 7.3 Definition of "Major" Taking and Casualty. For purposes of Sections 7.1 and 7.2 hereinabove, "Major" taking or casualty shall mean: (i) in the case of damage, damage to the Real Property such that the cost to repair or replace such damage is likely to exceed seven percent (7%) of the Purchase Price or otherwise materially adversely impacts Purchaser's intended use of the Property, in Purchaser's reasonable discretion, or, (ii) in the case of a condemnation or taking by a by the power of eminent domain, a taking which negatively impacts the value of the Real Property by more than seven percent (7%) or which results in the Real Property not having reasonable access to a publicly-dedicated street or otherwise materially adversely impacts Purchaser's intended use of the Property, in Purchaser's reasonable discretion.

Section 7.4 Brokerage Commissions. Seller and Purchaser each represent that they dealt with no brokers in connection with the transaction contemplated by this Agreement. Each party agrees that should any claim be made for brokerage commissions or finder's fees by any other broker or other finder by, through or on account of any acts of said party or its representatives, said party will indemnify and hold the other party free and harmless from and against any and all loss, liability, cost, damage and expense in connection therewith. Seller and Purchaser agree that the provisions of this Section 7.4 shall survive the Closing.

ARTICLE VIII

MISCELLANEOUS

Section 8.1 PURCHASER ACKNOWLEDGES AND AGREES THAT, EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT OR IN THE DOCUMENTS TO BE DELIVERED IN CONNECTION WITH THE CLOSING (THE "CLOSING DOCUMENTS"), NEITHER SELLER, NOR ANY AGENT OR REPRESENTATIVE OF SELLER HAS MADE, AND SELLER IS NOT LIABLE OR RESPONSIBLE FOR OR BOUND IN ANY MANNER BY, ANY EXPRESS OR IMPLIED REPRESENTATIONS, WARRANTIES, COVENANTS, AGREEMENTS, OBLIGATIONS, GUARANTEES, STATEMENTS, INFORMATION OR INDUCEMENTS PERTAINING TO THE PROPERTY OR ANY PART THEREOF, TITLE TO THE PROPERTY, THE PHYSICAL CONDITION THEREOF, THE FITNESS AND QUALITY THEREOF, THE VALUE AND PROFITABILITY THEREOF, OR ANY OTHER MATTER OR THING WHATSOEVER WITH RESPECT THERETO. WITHOUT LIMITING THE FOREGOING, PURCHASER ACKNOWLEDGES AND AGREES THAT, EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT OR IN THE CLOSING DOCUMENTS, NEITHER SELLER NOR ANY MEMBER, EMPLOYEE, AGENT OR REPRESENTATIVE OF SELLER IS LIABLE OR RESPONSIBLE FOR OR BOUND IN ANY MANNER BY (AND PURCHASER HAS NOT RELIED UPON) ANY VERBAL OR WRITTEN OR IMPLIED REPRESENTATIONS, WARRANTIES, COVENANTS, AGREEMENTS, OBLIGATIONS, GUARANTEES, STATEMENTS, INFORMATION OR INDUCEMENTS PERTAINING TO THE PROPERTY OR ANY PART THEREOF, AND ANY OTHER INFORMATION RESPECTING SAME FURNISHED BY OR OBTAINED FROM SELLER OR ANY AGENT OR REPRESENTATIVE OF SELLER. PURCHASER ACKNOWLEDGES AND AGREES THAT, EXCEPT AS OTHERWISE PROVIDED IN THIS AGREEMENT OR IN THE CLOSING DOCUMENTS, PURCHASER IS PURCHASING THE PROPERTY IN ITS "AS IS" CONDITION and "WITH ALL FAULTS" AT THE DATE HEREOF, REASONABLE WEAR AND TEAR FROM THE DATE HEREOF UNTIL THE CLOSING EXCEPTED.

Section 8.2 Intentionally omitted.

Section 8.3 Discharge of Obligations. The acceptance of the Deed for the Real Property by Purchaser shall be deemed to be a full performance and discharge of every covenant made by Seller herein, except those which are herein specifically stated to survive the Closing. Likewise, the acceptance of the Purchase Price by Seller shall be deemed to be a full performance and discharge of every covenant made by Purchaser herein, except those which are herein specifically stated to survive the Closing.

Section 8.4 Assignment. Purchaser shall have the right, without Seller's consent but upon written notice to Seller (which notice shall also include a copy of the relevant instrument of assignment and assumption agreement between Purchaser and its assignee), to assign this Agreement to a wholly owned subsidiary of Purchaser or another entity which assumes all of Purchaser's obligations hereunder. Purchaser may similarly have the right to designate, upon written notice to Seller, any other entity to be the grantee or transferee to take title to the Property at Closing. No assignment or designation by Purchaser shall relieve Purchaser from any of its obligations hereunder.

Section 8.5 Notices. Any notice pursuant to this Agreement shall be given in writing by (a) personal delivery, or (b) reputable overnight delivery service with proof of delivery, or (c) e-mail transmission sent to the intended addressee at the e-mail address set forth below (with prompt follow-up notice sent by one of the other means of delivery set forth in (a) or (b) above, within one (1) Business Day), or to such other address or to the attention of such other person as the addressee shall have designated by written notice sent in accordance herewith, and shall be deemed to have been given upon receipt or refusal to accept delivery by personal delivery, or, in the case of reputable overnight delivery, on the next Business Day after deposit with the reputable overnight delivery service, or, in the case of e-mail transmission, as of the date of the e-mail transmission if made before 5 pm, Eastern Time on a Business Day (or if not, on the following Business Day). Unless changed in accordance with the preceding sentence, the addresses for notices given pursuant to this Agreement shall be as follows:

If to Seller:
SOUTHERN RESEARCH INSTITUTE
2000 Ninth Avenue South
Birmingham, AL 35205
Attention: Joshua D. Carpenter, Ph.D.
E-mail: jcarpenter@southernresearch.org

With a copy to:
Helena F. Christine
UA System Office of Counsel
701 20th Street South (1720 2nd Avenue South)
Suite AB 820
Birmingham, AL 35233 (35294-0108)
E-mail: hchristine@uasystem.edu

If to Purchaser:
TONIX PHARMACEUTICALS HOLDING CORP.
26 Main Street
Chatham, NJ 07928
Attention: Seth Lederman, M.D., Chief Executive Officer
E-mail: seth.lederman@tonixpharma.com

with a copy to:
Lowenstein Sandler LLP
One Lowenstein Drive
Roseland, New Jersey 07068,
Attention: Michael Lerner, Esq.
E-mail: mlerner@lowenstein.com

If to Escrow Agent: First American Title Insurance Company
666 Third Avenue
New York, NY 10017
Attention: Larissa Kravanja
E-mail: lkravanja@firstam.com

Section 8.6 Modifications. This Agreement cannot be changed orally, and no agreement shall be effective to waive, change, modify or discharge it in whole or in part unless such agreement is in writing and is signed by the parties against whom enforcement of any waiver, change, modification or discharge is sought.

Section 8.7 Time of the Essence. Subject to the cure periods for default set forth in Sections 6.1 and 6.2, respectively, time is hereby made strictly of the essence of this Agreement and the consummation of the transactions contemplated hereby. In every instance in this Agreement where a time period is provided, such time period shall be strictly enforced.

Section 8.8 Successors and Assigns. The terms and provisions of this Agreement are to apply to and bind the permitted successors and assigns of the parties hereto.

Section 8.9 Entire Agreement. This Agreement, including the exhibits and schedules hereto, contains the entire agreement between the parties hereto pertaining to the subject matter hereof and fully supersedes all prior written or oral agreements and understandings between the parties pertaining to such subject matter.

Section 8.10 Further Assurances. Each party hereto agrees that it will execute and deliver such other documents and take such other action, whether prior or subsequent to the Closing, as may be reasonably requested by the other party to consummate more effectively the purposes or subject matter of this Agreement. The provisions of this Section 8.10 shall survive the Closing.

Section 8.11 Counterparts and Electronic Signatures. This Agreement may be executed in counterparts, and may also be executed electronically by email, facsimile, DocuSign or other .pdf signatures, and all such executed counterparts shall constitute the same agreement. It shall be necessary to account for only one such counterpart in proving this Agreement.

Section 8.12 Severability. If any provision of this Agreement is determined by a court of competent jurisdiction to be invalid or unenforceable, the remainder of this Agreement shall nonetheless remain in full force and effect.

Section 8.13 Applicable Law. This Agreement shall be governed by, and construed in accordance with the laws of the State of Maryland. Seller and Purchaser hereby irrevocably submit to the jurisdiction of the courts of the State of Maryland and/or federal courts sitting in the State of Maryland in any action or proceeding arising out of or relating to this Agreement and hereby irrevocably agree that all claims in respect of such action or proceeding shall be heard and determined by such courts. Purchaser and Seller agree that the provisions of this Section 8.13 shall survive the Closing.

Section 8.14 No Third-Party Beneficiary. The provisions of this Agreement and of the documents to be executed and delivered in connection with the consummation of the Closing are and will be for the benefit of Seller and Purchaser and Escrow Agent only and are not for the benefit of any third party, and accordingly, no third party shall have the right to enforce the provisions of this Agreement or of the documents to be executed and delivered in connection with the consummation of the Closing.

Section 8.15 Exhibits and Schedules. The schedules and/or exhibits attached hereto shall each be deemed to be an integral part of this Agreement.

Section 8.16 Captions. The section headings appearing in this Agreement are for convenience of reference only and are not intended, to any extent and for any purpose, to limit or define the text of any section or any subsection hereof.

Section 8.17 Construction. The parties acknowledge that the parties and their counsel have reviewed and revised this Agreement and that the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement or any exhibits or amendments hereto.

Section 8.18 Termination of Agreement. It is understood and agreed that if either Purchaser or Seller terminates this Agreement pursuant to a right of termination granted hereunder, such termination shall operate to relieve Seller and Purchaser from all obligations under this Agreement, except for such obligations as are specifically stated herein to survive the termination of this Agreement.

Section 8.19 Recordation. Neither this Agreement nor any notice thereof may be recorded by any party hereto without the prior written consent of the other party hereto. The provisions of this Section 8.19 shall survive the Closing.

Section 8.20 1031 Exchange. The parties hereto acknowledges that either party may desire to effect a tax-deferred like-kind exchange with respect to its purchase of the Real Property pursuant to Section 1031 of the Internal Revenue Code and any similar provisions of State or local law (an "Exchange"). Subject to the terms and provisions of this Section, the parties shall reasonably cooperate with each other in effecting any Exchange; provided, however, in no event shall either party be required to incur any liability, any delays, any costs or expenses or risk of ownership, title or conveyance in connection with such cooperation with the party not entering into an Exchange (the "Non-Exercising Party"). Any Exchange will be structured by the party exercising its right to enter into an Exchange (the "1031 Party") at its sole cost and expense such that the Non-Exercising Party will have no obligation to acquire or enter into the chain of title to any property other than the Land. The Non-Exercising Party shall not be responsible for compliance with or be deemed to have warranted to the 1031 Party that any Exchange in fact complies with Section 1031 of the Internal Revenue Code. The Non-Exercising Party shall have the right to review and approve any documents to be executed by the 1031 Party in connection with any Exchange; provided, however, such approval shall not be unreasonably withheld, conditioned or delayed as long as the Non-Exercising Party will not incur any liability or any cost or expense as a result thereof and the 1031 Party shall not be released from any of its obligations under this Agreement. The Non-Exercising Party shall have no obligation to execute any

documents or to undertake any action by which the Non-Exercising Party would or might incur any liability or obligation not otherwise provided for in the other provisions of this Agreement. Neither the conveyance of title to the Land to the 1031 Party's designated intermediary, or qualified exchange accommodation title holder (if applicable), nor the Exchange shall modify the representations, warranties and covenants of either party under this Agreement or the survival thereof pursuant to this Agreement in any respect, nor shall any such conveyance or Exchange result in a release of the 1031 Party with respect to such representations, warranties and/or covenants. At the 1031 Party's request, the Deed and the other documents that shall be executed and delivered to consummate the Closing shall be executed by and run in favor of the 1031 Party's designated intermediary or qualified exchange accommodation title holder; provided, however, the 1031 Party shall remain obligated to the Non-Exercising Party for any obligation under any and all such closing documents. The Closing Date shall not be extended or adjourned as a result of any Exchange. The 1031 Party hereby agrees to indemnify and hold the Non-Exercising Party harmless from and against any and all costs and liabilities arising from any Exchange (other than what would have been applicable under this Agreement without such Exchange), which indemnification obligation shall expressly survive the Closing and not be merged therein. The 1031 Party further acknowledges that any Exchange is at the request and initiation of the 1031 Party and that the 1031 Party is relying solely upon the advice and counsel of professionals of its choice in structuring, executing and consummating any Exchange.

Section 8.21 Exclusivity. Seller agrees that while this Agreement remains in full force and effect, Seller shall not negotiate for the sale of the Property, make or accept any offers to sell the Property, nor market the Property in any way, to any other person or entity other than Purchaser and its permitted assignees.

[*Remainder of page intentionally left blank; signatures to follow*]

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the Effective Date.

SELLER:

SOUTHERN RESEARCH INSTITUTE,
An Alabama non-profit corporation

By: _____
Name: Joshua D. Carpenter, Ph.D.
Title: President and Chief Executive Officer

PURCHASER:

TONIX PHARMACEUTICALS HOLDING CORP., a Nevada corporation,

By: _____
Name:
Title:

Escrow Agent agrees to act as escrow agent hereunder and to hold and disburse the Deposit in the manner provided herein.

ESCROW AGENT:

FIRST AMERICAN TITLE INSURANCE COMPANY

By: _____
Name:
Title:

EXHIBIT A

DESCRIPTION OF LAND

Parcel ID: 02218542

Address: 431 Aviation Way, Frederick , MD 21701

All those two lots or parcels of land situate, lying and being in the City of Frederick, Frederick County, Maryland, situated on Aviation Way and being known and designated as Lot 2B and Lot 2C as shown on a plat entitled "Resubdivisin of Lot #2, Section One (Recorded in Plat Book 23, page 142) 'AIRPARK INDUSTRIAL', Into Lots #2A, 2B & 2C", said plat being recorded in Plat Book 34, page 103, one of the Plat Records of Frederick County, Maryland

BEING all of the real estate described and conveyed to Southern Research Institute by deed dated January 30, 1990, from Frederick Business Properties Company, and recorded in the Land Records of Frederick County, Maryland at Book 1620, Page 1023.

AND BEING all of the real estate described and conveyed to Frederick Business Properties Company from Aircraft Owners and Pilots Association, and recorded in the Land Records of Frederick County, Maryland at Book 1386, Page 942.

EXHIBIT B

EQUIPMENT

EXHIBIT C

INSPECTION DOCUMENTS

	Description of Requested Item(s), to be provided by Seller to the extent in Seller's possession.
1	Existing Owner's Title Policy, including all Schedules.
2	Deeds, titles, licenses, charges, liens, options, agreements or any other Real Property instruments which relate to the business being conducted at the Premises.
3	Most recent appraisal.
4	Most recent property and zoning report.
5	Site plan and surveys.
6	If the Land is located in a flood zone, flood insurance certificates.
7	If issued by the applicable governmental authority, copies of all certificates of compliance (i.e. certificates of occupancy, zoning verification, etc.).
8	Plans and specifications for any improvements.
9	Current operating licenses or permits for Property.
10	Existing physical condition assessments/report.
11	Health, fire and building inspections from governmental agencies during past twelve (12) months.
12	Written notices from governmental authorities and insurance carriers received within the past twelve (12) months.
13	Insurance certificates.
14	Current loss history for property and liability claims at the Property, for the preceding three year period.
15	Inventory of capital improvements made (by year for 2021 YTD, 2020, 2019 and 2018).
16	Deferred maintenance schedule.
17	Tax bills for the two (2) years immediately preceding the month in which the Effective Date occurs and current year and notices of assessment.

18	Copies of the 5 HJF research contracts and the 1 NIAID research contract, as well as copies of all other vendor/service/operational contracts and leases, including utility contracts.
19	If any space is leased to a tenant, copies of all leases
20	Documents evidencing and/or securing any mortgage loan (as applicable).
21	Copies of all reports, notices or correspondence concerning any violation or infringement of a government regulation by any part of Business, including the areas of: permits, licenses and approvals; occupational safety and health; and environmental protection.
23	Description of all equipment, assets and inventory located at the Property, including depreciation and amortization records.
24	All engineering, financial, and architectural information related to the reconstruction of a substantial portion of the building after the 2015 flood.

EXHIBIT D

GENERAL WARRANTY DEED

THIS GENERAL WARRANTY DEED is made this _____ day of _____, 2021, by and between **SOUTHERN RESEARCH INSTITUTE**, an Alabama non-profit organization, with an address at 2000 Ninth Avenue South, Birmingham, Alabama 35205, as grantor ("the "**Grantor**) to and in favor of **TONIX PHARMACEUTICALS HOLDING CORP.**, a Nevada corporation, with an address at 26 Main Street, Chatham, New Jersey 07928, as grantee ("the **Grantee**").

WITNESSETH: For and in consideration of the sum of SEVENTEEN MILLION FIVE HUNDRED THOUSAND AND 00/100 DOLLARS ($17,500,000.00) , and other good and valuable consideration paid in hand to Grantor by Grantee, the receipt and sufficiency of which are hereby acknowledged, Grantor has GRANTED, BARGAINED, SOLD and CONVEYED, and by these presents does grant bargain, sell and convey unto Grantee, its successors and assigns, in fee simple, the real property, as the same is legally and particularly described on Exhibit A attached hereto, and incorporated herein by reference ("the Real Property"), together with all and singular rights, benefits, privileges, easements, rights of way, tenements, hereditaments, appurtenances, and other interests, in anyway appertaining or belonging to the Real Property, including any such interests on, in, or under, any land, highway, alley, street or right of way abutting or adjoining the Real Property, subject to any mineral rights not owned by the Grantor, and all buildings, structures, fixtures, facilities, and other improvement located on, under or above the Real Property, subject to those Covenants, Conditions, Restrictions and Reservations recorded in Liber 1155, Folio 352 and Liber 1386, Folio 942 of the Land Records of Frederick County, Maryland (to the extent such matters apply to the Real Property) and subject to the Permitted Exceptions set forth in Exhibit B attached hereto and made a part hereof (the "Permitted Exceptions"). To have and to hold the Real Property hereby conveyed to the Grantee, its successors and assigns, in fee simple forever.

AND GRANTOR covenants that it will warrant generally the described real property hereby granted and conveyed, and that it will execute such further assurances of the described real property as may be requisite.

IN WITNESS WHEREOF, Grantor, on the day and year first hereinabove written, has caused these presents to be executed, under seal, by its President and Chief Executive Officer.

WITNESS:

GRANTOR:

SOUTHERN RESEARCH INSTITUTE
an Alabama non-profit organization

By: _____(SEAL)
Name: Joshua D. Carpenter, Ph.D.
Title: President and Chief Executive Officer

STATE OF ALABAMA
COUNTY OF JEFFERSON

I, the undersigned, a Notary Public in and for the said County in said State, hereby certify that Joshua D. Carpenter, whose name as the President and Chief Executive Officer of Southern Research Institute is signed to the foregoing conveyance, and who is known to me, acknowledged before me on this day that, being informed of the contents of the conveyance, he, as such officer and with full authority, executed the same voluntarily for and as the act of said organization.

Given under my hand this _____ day of _____, 2021.

_____
Notary Public

My commission expires: _____

I HEREBY CERTIFY, that the forgoing General Warranty Deed was prepared by or under the supervision of the undersigned, an attorney licensed to practice law by the Court of Appeals of Maryland.

_____
Raymond Daniel Burke
Baker, Donelson, Bearman
Caldwell & Berkowitz
100 Light Street, 19th Floor
Baltimore, Maryland 21202
410-862-1192
rburke@bakerdonelson.com

Exhibit A

LEGAL DESCRIPTION

Parcel ID: 02218542

Address: 431 Aviation Way, Frederick , MD 21701

All those two lots or parcels of land situate, lying and being in the City of Frederick, Frederick County, Maryland, situated on Aviation Way and being known and designated as Lot 2B and Lot 2C as shown on a plat entitled "Resubdivisin of Lot #2, Section One (Recorded in Plat Book 23, page 142) 'AIRPARK INDUSTRIAL', Into Lots #2A, 2B & 2C", said plat being recorded in Plat Book 34, page 103, one of the Plat Records of Frederick County, Maryland

BEING all of the real estate described and conveyed to Southern Research Institute by deed dated January 30, 1990, from Frederick Business Properties Company, and recorded in the Land Records of Frederick County, Maryland at Book 1620, Page 1023.

AND BEING all of the real estate described and conveyed to Frederick Business Properties Company from Aircraft Owners and Pilots Association, and recorded in the Land Records of Frederick County, Maryland at Book 1386, Page 942.

Exhibit B

PERMITTED EXCEPTIONS

EXHIBIT E

OMNIBUS BILL OF SALE, ASSIGNMENT AND ASSUMPTION

THIS OMNIBUS BILL OF SALE, ASSIGNMENT AND ASSUMPTION (this "Assignment") is made as of _____, 2021 by and between **SOUTHERN RESEARCH INSTITUTE**, an Alabama non-profit corporation, having an address at 2000 Ninth Avenue South, Birmingham, AL 35205("Assignor") and **TONIX PHARMACEUTICALS HOLDING CORP**, a Nevada corporation, having an address at 509 Madison Avenue, Suite 306, New York, NY 10022 ("Assignee").

R E C I T A L S:

A. Effective contemporaneously herewith, Assignor has conveyed to Assignee certain real property described on Exhibit "A" (the "Real Property") located in Frederick, Maryland pursuant to the terms of that certain Agreement of Purchase and Sale, dated as of July 26, 2021, by and between Assignor and Assignee (as the same may have been amended, modified or assigned, the "Sale Agreement").

B. In connection with the conveyance of the Real Property, Assignor has agreed to transfer, convey and assign to Assignee all of Assignor's right, title and interest in and to (a) all open or proposed highways, streets, roads, avenues, alleys, easements, strips, gores and rights of way in, on, across, in front of, contiguous to, abutting or adjoining the Real Property; (b) any and all buildings, structures, fixtures and other improvements now or hereafter erected on the Real Property ("Improvements"); (c) any and all personal property used in the operation, maintenance or ownership of the Real Property including without limitation the Equipment (as defined in the Sale Agreement); (d) all water (including riparian, drilling and pumping), sewer, development, and other rights or any nature appurtenant to the Real Property or the Improvements; (e) all permits, licenses, approvals, authorizations issued by any governmental authority in connection with the Property or the Improvements (as opposed to the Equipment), (f) the Permits (as defined in the Sale Agreement) listed on Schedule A attached hereto (collectively, the "Other Property").

NOW, THEREFORE, in consideration of the purchase of the Property and of the mutual covenants herein set forth and for Ten Dollars ($10.00) and other good and valuable consideration, the parties hereto agree as follows:

1. Assignment. Assignor hereby sells, assigns, and transfers to Assignee all of Assignor's right, title and interest in and to the Other Property.

2. Assumption. Assignee hereby assumes all of Assignor's rights and obligations in respect of the Other Property from and after the date hereof.

3. Permits. [OPEN][1]

[1] Note: Any permit specific considerations can be built-in here at closing.

4. Successors and Assigns. This Assignment shall be binding on the successors and assigns of Assignor. Assignor shall execute such further and additional documents as may be necessary to evidence or carry out the provisions of this Assignment.

5. Representation or Warranty. This Assignment is made without representation or warranty by Assignor, except as set forth in the Sale Agreement.

[***Remainder of page intentionally left blank; signatures to follow***]

IN WITNESS WHEREOF, Assignor has executed or have caused this Assignment to be properly executed on the day and year set forth above.

ASSIGNOR:

SOUTHERN RESEARCH INSTITUTE,
An Alabama non-profit corporation

By: _____
Name:
Title:

ASSIGNEE:

TONIX PHARMACEUTICALS HOLDING CORP., a Nevada corporation,

By: _____
Name:
Title:

Schedule A

Permits

EXHIBIT F

FIRPTA AFFIDAVIT

Section 1445 of the Internal Revenue Code provides that a transferee of a United States real property interest must withhold tax if the transferor is a foreign person. For U.S. tax purposes (including Section 1445), the owner of a disregarded entity (which has legal title to a U.S. real property interest under local law) will be the transferor of the property and not the disregarded entity. To inform the transferee that withholding of tax is not required upon the disposition of a United States real property interest by **SOUTHERN RESEARCH INSTITUTE**, an Alabama non-profit corporation ("Seller"), under penalties of perjury, the undersigned hereby certifies the following on behalf of Seller:

1. Seller is not a foreign corporation, foreign partnership, foreign trust, foreign estate or non-resident alien (as those terms are defined in the Internal Revenue Code and Income Tax Regulations); and

2. Seller is not a disregarded entity as defined in §1.1445-2(b)(2)(iii) of the Income Tax Regulations; and

3. Seller's U.S. employer taxpayer identification number is 63-0288868; and

4. Seller's office address is 2000 Ninth Avenue South, Birmingham, AL 35205.

Seller understands that this certification may be disclosed to the Internal Revenue Service by transferee and that any false statement contained herein could be punished by fine, imprisonment, or both.

Under penalties of perjury, Seller declares that it has examined this certification and to the best of Seller's knowledge and belief it is true, correct and complete, and that the individual executing this certification has authority to sign this document on behalf of Seller.

Dated: _____, 2021.

SOUTHERN RESEARCH INSTITUTE,
An Alabama non-profit corporation

By: _____
Name: Joshua D. Carpenter, Ph.D.
Title: President and Chief Executive Officer

STATE OF ALABAMA §
§
COUNTY OF JEFFERSON §

On _____, 2021, before me, the undersigned, a notary public in and for said State, personally appeared Joshua D. Carpenter, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that, by his/her/their signature(s) on the instrument, the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

_____, Notary Public

My Commission Expires:

_____

EXHIBIT G

PERMITS

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: August 9, 2021

/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: August 9, 2021

/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 June 30, 2021 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.

Date: August 9, 2021

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

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 June 30, 2021 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.

Date: August 9, 2021

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