

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

FORM S-3

REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933

**TONIX PHARMACEUTICALS HOLDING CORP.**  
(Exact name of registrant as specified in its charter)

**Nevada**  
(State or other jurisdiction  
of incorporation or organization)

**26-1434750**  
(I.R.S. Employer  
Identification No.)

**509 Madison Avenue, Suite 1608  
New York, New York 10022  
(212) 980-9155**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Seth Lederman  
Chief Executive Officer  
Tonix Pharmaceuticals Holding Corp.  
509 Madison Avenue, Suite 1608  
New York, New York 10022  
(212) 980-9155**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

With copies to:

**Michael J. Lerner, Esq.  
Steven M. Skolnick, Esq.  
Lowenstein Sandler LLP  
1251 Avenue of the Americas  
New York, New York 10020  
(973) 597-6394**

**APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC:** From time to time after the effective date of this registration statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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 7(a)(2)(B) of the Securities Act.

**CALCULATION OF REGISTRATION FEE**

<b>Title of Each Class of Securities to be Registered</b>	<b>Amount to be Registered (1)</b>	<b>Proposed Maximum Offering Price Per Unit</b>	<b>Proposed Maximum Aggregate Offering Price (2)</b>	<b>Amount of Registration Fee (3)</b>
Common Stock, \$.001 par value per share			—	—
Preferred Stock, \$.001 par value per share			—	—
Warrants			—	—
Units (4)			—	—
<b>Total</b>	<u>N/A</u>	<u>N/A</u>	<u>\$ 150,000,000</u>	<u>\$ 19,470</u>

(1) There are being registered under this registration statement such indeterminate number of shares of common stock and preferred stock; such indeterminate number of warrants to purchase common stock, preferred stock, and/or units; and such indeterminate number of units as may be sold by the registrant from time to time, which together shall have an aggregate initial offering price not to exceed \$150,000,000. Any securities registered hereunder may be sold separately or as units with other securities registered hereunder. Includes consideration to be received by the registrant, if applicable, for registered securities that are issuable upon exercise, conversion or exchange of other registered securities. In addition, pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), the shares being registered hereunder include such indeterminate number of shares of common stock and preferred stock as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends, or similar transactions.

(2) The proposed maximum offering price per unit will be determined from time to time by the Registrant in connection with, and at the time of, the issuance of the securities and is not specified as to each class of security pursuant to General Instruction II.D. of Form S-3 under the Securities Act.

(3) Calculated pursuant to Rule 457(o) under the Securities Act based on the proposed maximum aggregate offering price of all securities listed.

(4) Each unit will represent an interest in two or more other securities, which may or may not be separable from one another.

**The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.**

## EXPLANATORY NOTE

This registration statement contains:

- a base prospectus, which covers the offering, issuance and sales by us of up to \$150,000,000 in the aggregate of the securities identified above from time to time in one or more offerings; and
- a sales agreement prospectus covering the offer, issuance and sale by us of up to a maximum aggregate offering price of up to \$50,000,000 of our common stock that may be issued and sold from time to time under a sales agreement with A.G.P / Alliance Global Partners (the "Sales Agreement").

The base prospectus immediately follows this explanatory note. The specific terms of any securities to be offered pursuant to the base prospectus will be specified in a prospectus supplement to the base prospectus. The sales agreement prospectus immediately follows the base prospectus. The \$50,000,000 of common stock that may be offered, issued and sold under the sales agreement prospectus is included in the \$150,000,000 of securities that may be offered, issued and sold by us under the base prospectus. Upon termination of the Sales Agreement, any portion of the \$50,000,000 included in the sales agreement prospectus that is not sold pursuant to the Sales Agreement will be available for sale in other offerings pursuant to the base prospectus, and if no shares are sold under the Sales Agreement, the full \$50,000,000 of securities may be sold in other offerings pursuant to the base prospectus.

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**The information in this prospectus is not complete and may be changed. We may not sell these securities under this prospectus until the registration statement of which it is a part and filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.**

**PRELIMINARY PROSPECTUS**

**SUBJECT TO COMPLETION, DATED APRIL 8, 2020**

**\$150,000,000**



**Common Stock  
Preferred Stock  
Warrants  
Units**

We may offer and sell, from time to time in one or more offerings, any combination of common stock, preferred stock, warrants, or units having an aggregate initial offering price not exceeding \$150,000,000. The preferred stock, warrants, and units may be convertible or exercisable or exchangeable for common stock or preferred stock or other securities of ours and have not been approved for listing on any market or exchange, and we have not made any application for such listing.

Each time we sell a particular class or series of securities, we will provide specific terms of the securities offered in a supplement to this prospectus. The prospectus supplement may also add, update or change information in this prospectus. You should read this prospectus and any prospectus supplement, as well as the documents incorporated by reference or deemed to be incorporated by reference into this prospectus, carefully before you invest in any securities.

**This prospectus may not be used to offer or sell our securities unless accompanied by a prospectus supplement relating to the offered securities.**

Our common stock is presently listed on The NASDAQ Global Market under the symbol "TNXP". On April 7, 2020, the last reported sale price of our common stock was \$0.70. Each prospectus supplement will indicate if the securities offered thereby will be listed on any securities exchange.

These securities may be sold directly by us, through dealers or agents designated from time to time, to or through underwriters or dealers or through a combination of these methods on a continuous or delayed basis. See "Plan of Distribution" in this prospectus. We may also describe the plan of distribution for any particular offering of our securities in a prospectus supplement. If any agents, underwriters or dealers are involved in the sale of any securities in respect of which this prospectus is being delivered, we will disclose their names and the nature of our arrangements with them in a prospectus supplement. The net proceeds we expect to receive from any such sale will also be included in a prospectus supplement.

**Investing in our securities involves various risks. See "Risk Factors" beginning on page 2 of this prospectus and in the applicable prospectus supplement, and in the risks discussed in the documents incorporated by reference in this prospectus and in the applicable prospectus supplement, as they may be amended, updated or modified periodically in our reports filed with the Securities and Exchange Commission. You should carefully read and consider these risk factors before you invest in our securities.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

**This prospectus is dated \_\_\_\_\_, 2020**

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## ABOUT THIS PROSPECTUS

This prospectus is part of a shelf registration statement that we filed with the Securities and Exchange Commission (the “SEC”) using a “shelf” registration process. Under this shelf registration process, we may sell any combination of the securities described in this prospectus in one or more offerings from time to time having an aggregate initial offering price of \$150,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we offer securities, we will provide you with a prospectus supplement that describes the specific amounts, prices and terms of the securities we offer. The prospectus supplement also may add, update or change information contained in this prospectus. You should read carefully both this prospectus and any prospectus supplement together with additional information described below under the caption “Where You Can Find More Information.”

This prospectus does not contain all the information provided in the registration statement we filed with the SEC. You should read both this prospectus, including the section titled “Risk Factors,” and the accompanying prospectus supplement, together with the additional information described under the heading “Where You Can Find More Information.”

You should rely only on the information contained or incorporated by reference in this prospectus or a prospectus supplement. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus is not an offer to sell securities, and it is not soliciting an offer to buy securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus or any prospectus supplement, as well as information we have previously filed with the SEC and incorporated by reference, is accurate as of the date on the front of those documents only. Our business, financial condition, results of operations and prospects may have changed since those dates.

## OUR BUSINESS

*Except where the context otherwise requires, the terms, “we,” “us,” “our” or “the Company,” refer to the business of Tonix Pharmaceuticals Holding Corp., a Nevada corporation and its wholly-owned subsidiaries.*

### Overview

We are a clinical-stage biopharmaceutical company focused on discovering, licensing, acquiring and developing drugs and biologics to treat and prevent human disease and alleviate suffering. Our current portfolio includes biologics to prevent infectious diseases and small molecules and biologics to treat pain, psychiatric and addiction conditions. In February 2020, we announced a program to develop a potential vaccine, TNX-1800 (live modified horsepox virus vaccine for percutaneous administration) to protect against the novel coronavirus disease emerging in 2019, or COVID-19. TNX-1800 is based on our proprietary horsepox vaccine platform and is molecularly designed to express the Spike protein of the SARS-CoV-2 virus that causes COVID-19. TNX-801 (live horsepox virus vaccine for percutaneous administration) is in development to protect against smallpox and monkeypox. Our most advanced drug development programs are focused on delivering safe and effective long-term treatments for fibromyalgia, or FM, and posttraumatic stress disorder, or PTSD. Our most advanced product candidate, TNX-102 SL, is in Phase 3 development as a bedtime treatment for fibromyalgia and PTSD. We are enrolling participants in the Phase 3 RELIEF trial in fibromyalgia and expect results from an unblinded interim analysis in the third quarter of 2020 and topline data in the first half of 2021, however, we cannot predict whether the global COVID-19 pandemic will impact the timing of topline results. The Phase 3 RECOVERY trial (P302) for TNX-102 SL (trade name Tonmya) in PTSD has stopped enrollment based on the Independent Data Monitoring Committee’s recommendation to stop the study for futility following an interim analysis of the first 50% of enrolled participants. Topline data for RECOVERY is expected in the second quarter of 2020, however, we cannot predict whether the global COVID-19 pandemic will impact the timing of topline results. TNX-102 SL for PTSD has U.S. Food and Drug Administration (FDA) Breakthrough Therapy Designation. TNX-102 SL is also in development for agitation in Alzheimer’s disease and alcohol use disorder (AUD). The agitation in Alzheimer’s disease program is Phase 2 ready with FDA Fast Track designation, and the development program for AUD is in the pre-Investigational New Drug (IND) application stage. Our programs for treating addiction conditions also include TNX-1300 (T172R/G173Q double-mutant cocaine esterase 200 mg, i.v. solution), which is in Phase 2 development for the treatment of cocaine intoxication and has FDA Breakthrough Therapy Designation. TNX-601 CR (tianeptine oxalate controlled-release tablets) is in development as a daytime treatment for depression as well as PTSD and corticosteroid-induced cognitive dysfunction. The first efficacy study in depression will be performed outside the U.S. TNX-1600 (a triple reuptake inhibitor) is a pre-clinical new molecular entity (NCE) being developed as a treatment for PTSD. Our preclinical pipeline includes TNX-1500 (anti-CD154), a monoclonal antibody being developed to prevent and treat organ transplant rejection and autoimmune conditions and TNX-1700 (rTFF2), a biologic being developed to treat gastric and pancreatic cancers. TNX-1200 (live vaccinia virus vaccine for percutaneous administration) is in development to protect against smallpox and monkeypox. Finally, TNX-701 (undisclosed small molecule) to prevent radiation effects is being advanced as a medical countermeasure to improve biodefense.

## Corporate Information

We were incorporated on November 16, 2007 under the laws of the State of Nevada as Tamandare Explorations Inc. On October 11, 2011, we changed our name to Tonix Pharmaceuticals Holding Corp. Our principal executive offices are located at 509 Madison Avenue, Suite 306, New York, New York 10022, and our telephone number is (212) 980-9155. Our website addresses are [www.tonixpharma.com](http://www.tonixpharma.com), [www.tonix.com](http://www.tonix.com), and [www.krele.com](http://www.krele.com). The information on our websites is not part of this prospectus. We have included our website addresses as a factual reference and do not intend them to be active links to our websites.

### Risks Associated with Our Business and this Offering

Our business and our ability to implement our business strategy are subject to numerous risks, as more fully described in the section of this prospectus entitled “Risk Factors.” You should read these risks before you invest in our securities. We may be unable, for many reasons, including those that are beyond our control, to implement our business strategy. In particular, risks associated with our business include:

- There is substantial doubt about our ability to continue as a going concern, which may affect our ability to obtain future financing and may require us to curtail our operations. We will need to raise additional capital to support our operations.
- We have incurred losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future, and our future profitability is uncertain.
- Our product candidates must undergo rigorous clinical testing. Such clinical testing may fail to demonstrate safety and efficacy and any of our product candidates could cause undesirable side effects, which would substantially delay or prevent regulatory approval or commercialization.
- We are dependent on patents and proprietary technology. If we fail to adequately protect this intellectual property or if we otherwise do not have exclusivity for the marketing of our products, our ability to commercialize products could suffer.
- If our competitors are able to develop and market products that are more effective, safer or more affordable than ours are, or obtain marketing approval before we do, our commercial opportunities may be limited.
- We may not be able to manufacture, or otherwise secure the manufacture of, sufficient amounts of our product candidates for our preclinical studies and clinical trials.
- We may be unable to achieve and maintain effective internal control over financial reporting in accordance with Section 404 of the Sarbanes-Oxley Act.
- If you purchase our securities in this offering, you may incur dilution.
- We will have broad discretion in the use of the net proceeds from this offering and may not use them effectively.
- Our ability to advance our clinical development programs could be impacted by the COVID-19 pandemic.

### RISK FACTORS

*Investing in our securities involves a high degree of risk. Prior to making a decision about investing in our securities, you should carefully consider the specific risk factors discussed in the sections entitled “Risk Factors” contained in our annual report on Form 10-K for the fiscal year ended December 31, 2019 under the heading “Item 1A. Risk Factors,” and as described or may be described in any subsequent quarterly report on Form 10-Q under the heading “Item 1A. Risk Factors,” as well as in any applicable prospectus supplement and contained or to be contained in our filings with the SEC and incorporated by reference in this prospectus, together with all of the other information contained in this prospectus, or any applicable prospectus supplement. For a description of these reports and documents, and information about where you can find them, see “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.” If any of the risks or uncertainties described in our SEC filings or any prospectus supplement or any additional risks and uncertainties actually occur, our business, financial condition and results of operations could be materially and adversely affected.*

*In that case, the trading price of our securities could decline and you might lose all or part of the value of your investment.*

## DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements. Such forward-looking statements include those that express plans, anticipation, intent, contingency, goals, targets or future development and/or otherwise are not statements of historical fact. These forward-looking statements are based on our current expectations and projections about future events and they are subject to risks and uncertainties known and unknown that could cause actual results and developments to differ materially from those expressed or implied in such statements.

In some cases, you can identify forward-looking statements by terminology, such as “expects,” “anticipates,” “intends,” “estimates,” “plans,” “believes,” “seeks,” “may,” “should,” “could” or the negative of such terms or other similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus.

You should read this prospectus and any accompanying prospectus supplement and the documents that we reference herein and therein and have filed as exhibits to the registration statement, of which this prospectus is part, completely and with the understanding that our actual future results may be materially different from what we expect. You should assume that the information appearing in this prospectus and any accompanying prospectus supplement is accurate as of the date on the front cover of this prospectus or such prospectus supplement only. Because the risk factors referred to above, as well as the risk factors referred to on page 2 of this prospectus and incorporated herein by reference, could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We qualify all of the information presented in this prospectus and any accompanying prospectus supplement, and particularly our forward-looking statements, by these cautionary statements.



#### USE OF PROCEEDS

Except as otherwise provided in the applicable prospectus supplement, we intend to use the net proceeds from the sale of the securities offered by this prospectus for working capital and general corporate purposes.

The intended application of proceeds from the sale of any particular offering of securities using this prospectus will be described in the accompanying prospectus supplement relating to such offering. The precise amount and timing of the application of these proceeds will depend on our funding requirements and the availability and costs of other funds.

## THE SECURITIES WE MAY OFFER

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize all the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we indicate in the applicable prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We will also include in the prospectus supplement information, where applicable, about material United States federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

We may sell from time to time, in one or more offerings:

- shares of our common stock;
- shares of our preferred stock;
- warrants to purchase any of the securities listed above; and/or
- units consisting of any of the securities listed above.

The terms of any securities we offer will be determined at the time of sale. We may issue securities that are exchangeable for or convertible into common stock or any of the other securities that may be sold under this prospectus. When particular securities are offered, a supplement to this prospectus will be filed with the SEC, which will describe the terms of the offering and sale of the offered securities.

## DESCRIPTION OF COMMON STOCK

*The following is a summary of all material characteristics of our common stock as set forth in our articles of incorporation and bylaws. The summary does not purport to be complete and is qualified in its entirety by reference to our articles of incorporation and bylaws, each as amended, and to the provisions of Chapters 78 and 92A of the Nevada Revised Statutes, as amended ("NRS").*

### Common Stock

We are authorized to issue up to 150,000,000 shares of our common stock, par value \$0.001 per share. As of April 7, 2020, there were 49,353,134 shares of our common stock issued and outstanding. The outstanding shares of our common stock are validly issued, fully paid and nonassessable.

Holders of our common stock are entitled to one vote for each share on all matters submitted to a stockholder vote. Holders of our common stock do not have cumulative voting rights. Therefore, holders of a majority of the shares of our common stock voting for the election of directors collectively hold the voting power to elect all of the directors. Holders of our common stock representing a majority of the voting power of our capital stock issued, outstanding and entitled to vote, represented in person or by proxy, are necessary to constitute a quorum at any meeting of stockholders. A vote by the holders of a majority of our outstanding shares is required to effectuate certain fundamental corporate changes such as dissolution, merger or an amendment to our articles of incorporation. However, a two-thirds vote is required for stockholders to amend our bylaws.

Subject to the rights of holders of shares of our preferred stock, if any, the holders of our common stock are entitled to share in all dividends that our board of directors, in its discretion, declares on our common stock from legally available funds. In the event of a liquidation, dissolution or winding up, each outstanding share of our common stock entitles its holder to participate pro rata in all assets that remain after payment of liabilities and after providing for each class of stock, if any, having preference over our common stock. Our common stock has no pre-emptive, subscription or conversion rights and there are no redemption provisions applicable to our common stock.

### Transfer Agent and Registrar

The Transfer Agent and Registrar for our common stock is vStock Transfer, LLC, 18 Lafayette Place, Woodmere, NY 11598.

## DESCRIPTION OF PREFERRED STOCK

*The following is a summary of all material characteristics of our preferred stock as set forth in our articles of incorporation and bylaws. The summary does not purport to be complete and is qualified in its entirety by reference to our articles of incorporation and bylaws, each as amended, and to the provisions of Chapter 78 and 92A of the NRS.*

### Preferred Stock

We are authorized to issue up to 5,000,000 shares of preferred stock, par value \$0.001 per share, none of which are currently outstanding. Shares of our preferred stock may be issued in series, and each such series shall have such voting powers, full or limited, or no voting powers, and such designations, preferences and relative participating, optional or other special rights, and qualifications, limitations or restrictions thereof, as shall be stated and expressed in the certificate of designation relating to such series, as approved by our board of directors and filed with the Nevada Secretary of State. The board of directors is expressly vested with the authority to determine and fix in the resolution or resolutions providing for the issuances of preferred stock the voting powers, designations, preferences and rights, and the qualifications, limitations or restrictions thereof, of each such series to the full extent now or hereafter permitted by the laws of the State of Nevada.

### *Terms of the Preferred Stock That We May Offer and Sell to You*

We summarize below some of the provisions that will apply to the preferred stock that we may offer to you unless the applicable prospectus supplement provides otherwise. This summary may not contain all information that is important to you. You should read the prospectus supplement, which will contain additional information and which may update or change some of the information below. Prior to the issuance of any new series of preferred stock, we will further amend our articles of incorporation, as amended, by way of a certificate of designation designating such series and setting forth its terms. We will file the certificate of designation that contains the terms of each new series of preferred stock with the Nevada Secretary of State, and we will file a copy of the certificate of designation with the SEC, each time we designate a new series of preferred stock. Each certificate of designation will establish the number of shares included in a designated series and fix the designation, powers, privileges, preferences and rights of the shares of each series as well as any applicable qualifications, limitations or restrictions. You should refer to our articles of incorporation, as amended, including the applicable certificate of designation relating to such series of preferred stock and all other then-effective certificates of designation, before deciding to buy shares of any series of our preferred stock as described in the applicable prospectus supplement.

Our board of directors has the authority, without further action by the stockholders, to issue preferred stock in one or more series and to fix the number of shares, dividend rights, conversion rights, voting rights, redemption rights, liquidation preferences, sinking funds, and any other rights, preferences, privileges and restrictions applicable to each such series of preferred stock.

The issuance of any preferred stock could adversely affect the rights of the holders of common stock and, therefore, reduce the value of the common stock. The ability of our board of directors to issue preferred stock could discourage, delay or prevent a takeover or other corporate action.

The terms of any particular series of preferred stock will be described in the prospectus supplement relating to that particular series of preferred stock, including, where applicable:

- the designation, stated value and liquidation preference of such preferred stock;
- the number of shares within the series;
- the offering price;
- the dividend rate or rates (or method of calculation), the date or dates from which dividends shall accrue, and whether such dividends shall be cumulative or noncumulative and, if cumulative, the dates from which dividends shall commence to cumulate;
- any redemption or sinking fund provisions;
- the amount that shares of such series shall be entitled to receive in the event of our liquidation, dissolution or winding-up;
- the terms and conditions, if any, on which shares of such series shall be convertible or exchangeable for shares of our stock of any other class or classes, or other series of the same class;
- the voting rights, if any, of shares of such series; the status as to reissuance or sale of shares of such series redeemed, purchased or otherwise reacquired, or surrendered to us on conversion or exchange;
- the conditions and restrictions, if any, on the payment of dividends or on the making of other distributions on, or the purchase, redemption or other acquisition by us or any subsidiary, of the common stock or of any other class of our shares ranking junior to the shares of such series as to dividends or upon liquidation;
- the conditions and restrictions, if any, on the creation of indebtedness by us or by any subsidiary, or on the issuance of any additional stock ranking on a parity with or prior to the shares of such series as to dividends or upon liquidation; and
- any additional dividend, liquidation, redemption, sinking or retirement fund and other rights, preferences, privileges, limitations and restrictions of such preferred stock.

The description of the terms of a particular series of preferred stock in the applicable prospectus supplement will not be complete. You should refer to our articles of incorporation, as amended, including the applicable certificate of designation relating to such series of preferred stock and all other then-effective certificates of designation, for complete information regarding a series of our preferred stock.

The preferred stock will, when issued against payment of the consideration payable therefor, be fully paid and nonassessable.

## DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. If we indicate in the prospectus supplement, the terms of any warrants offered under that prospectus supplement may differ from the terms described below. If there are differences between that prospectus supplement and this prospectus, the prospectus supplement will control. Thus, the statements we make in this section may not apply to a particular series of warrants. Specific warrant agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit to the registration statement which includes this prospectus.

### General

We may issue warrants for the purchase of common stock and/or preferred stock in one or more series. We may issue warrants independently or together with common stock and/or preferred stock, and the warrants may be attached to or separate from these securities.

We will evidence each series of warrants by warrant certificates that we may issue under a separate agreement. We may enter into the warrant agreement with a warrant agent. Each warrant agent may be a bank that we select which has its principal office in the United States and a combined capital and surplus of at least \$50,000,000. We may also choose to act as our own warrant agent. We will indicate the name and address of any such warrant agent in the applicable prospectus supplement relating to a particular series of warrants.

We will describe in the applicable prospectus supplement the terms of the series of warrants, including:

- the offering price and aggregate number of warrants offered;
- the currency for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
- the warrant agreement under which the warrants will be issued;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreement and the warrants;
- anti-dilution provisions of the warrants, if any;
- the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the dates on which the right to exercise the warrants will commence and expire or, if the warrants are not continuously exercisable during that period, the specific date or dates on which the warrants will be exercisable;
- the manner in which the warrant agreement and warrants may be modified;
- the identities of the warrant agent and any calculation or other agent for the warrants;
- federal income tax consequences of holding or exercising the warrants;
- the terms of the securities issuable upon exercise of the warrants;

- any securities exchange or quotation system on which the warrants or any securities deliverable upon exercise of the warrants may be listed; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

#### **Exercise of Warrants**

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to 5:00 p.m. Eastern Time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate, and in the applicable prospectus supplement, the information that the holder of the warrant will be required to deliver to the warrant agent.

Until the warrant is properly exercised, no holder of any warrant will be entitled to any rights of a holder of the securities purchasable upon exercise of the warrant.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

#### **Enforceability of Rights By Holders of Warrants**

Any warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants in accordance with their terms.

#### **Calculation Agent**

Calculations relating to warrants may be made by a calculation agent, an institution that we appoint as our agent for this purpose. The prospectus supplement for a particular warrant will name the institution that we have appointed to act as the calculation agent for that warrant as of the original issue date for that warrant. We may appoint a different institution to serve as calculation agent from time to time after the original issue date without the consent or notification of the holders.

The calculation agent's determination of any amount of money payable or securities deliverable with respect to a warrant will be final and binding in the absence of manifest error.

## DESCRIPTION OF UNITS

We may issue units comprised of one or more of the other securities described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

The applicable prospectus supplement will describe:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any unit agreement under which the units will be issued;
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units; and
- whether the units will be issued in fully registered or global form.

The applicable prospectus supplement will describe the terms of any units. The preceding description and any description of units in the applicable prospectus supplement does not purport to be complete and is subject to and is qualified in its entirety by reference to the unit agreement and, if applicable, collateral arrangements and depositary arrangements relating to such units.

## PLAN OF DISTRIBUTION

We may sell the securities being offered pursuant to this prospectus through underwriters or dealers, through agents, or directly to one or more purchasers or through a combination of these methods. The applicable prospectus supplement will describe the terms of the offering of the securities, including:

- the name or names of any underwriters, if any, and if required, any dealers or agents;
- the purchase price of the securities and the proceeds we will receive from the sale;
- any underwriting discounts and other items constituting underwriters' compensation;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

We may distribute the securities from time to time in one or more transactions at:

- a fixed price or prices, which may be changed;
- market prices prevailing at the time of sale;
- prices related to such prevailing market prices; or
- negotiated prices.

Only underwriters named in the prospectus supplement are underwriters of the securities offered by the prospectus supplement.

If underwriters are used in an offering, we will execute an underwriting agreement with such underwriters and will specify the name of each underwriter and the terms of the transaction (including any underwriting discounts and other terms constituting compensation of the underwriters and any dealers) in a prospectus supplement. The securities may be offered to the public either through underwriting syndicates represented by managing underwriters or directly by one or more investment banking firms or others, as designated. If an underwriting syndicate is used, the managing underwriter(s) will be specified on the cover of the prospectus supplement. If underwriters are used in the sale, the offered securities will be acquired by the underwriters for their own accounts and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may be changed from time to time. Unless otherwise set forth in the prospectus supplement, the obligations of the underwriters to purchase the offered securities will be subject to conditions precedent and the underwriters will be obligated to purchase all of the offered securities if any are purchased.

We may grant to the underwriters options to purchase additional securities to cover over-allotments, if any, at the public offering price, with additional underwriting commissions or discounts, as may be set forth in a related prospectus supplement. The terms of any over-allotment option will be set forth in the prospectus supplement for those securities.

If we use a dealer in the sale of the securities being offered pursuant to this prospectus or any prospectus supplement, we will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. The names of the dealers and the terms of the transaction will be specified in a prospectus supplement.

We may sell the securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, any agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.



In connection with the sale of the securities, underwriters, dealers or agents may receive compensation from us or from purchasers of the securities for whom they act as agents in the form of discounts, concessions or commissions. Underwriters may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters or commissions from the purchasers for whom they may act as agents. Underwriters, dealers and agents that participate in the distribution of the securities, and any institutional investors or others that purchase securities directly and then resell the securities, may be deemed to be underwriters, and any discounts or commissions received by them from us and any profit on the resale of the securities by them may be deemed to be underwriting discounts and commissions under the Securities Act.

We may provide agents and underwriters with indemnification against particular civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to such liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

In addition, we may enter into derivative transactions with third parties (including the writing of options), or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with such a transaction, the third parties may, pursuant to this prospectus and the applicable prospectus supplement, sell securities covered by this prospectus and the applicable prospectus supplement. If so, the third party may use securities borrowed from us or others to settle such sales and may use securities received from us to close out any related short positions. We may also loan or pledge securities covered by this prospectus and the applicable prospectus supplement to third parties, who may sell the loaned securities or, in an event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and the applicable prospectus supplement. The third party in such sale transactions will be an underwriter and will be identified in the applicable prospectus supplement or in a post-effective amendment.

To facilitate an offering of a series of securities, persons participating in the offering may engage in transactions that stabilize, maintain, or otherwise affect the market price of the securities. This may include over-allotments or short sales of the securities, which involves the sale by persons participating in the offering of more securities than have been sold to them by us. In those circumstances, such persons would cover such over-allotments or short positions by purchasing in the open market or by exercising the over-allotment option granted to those persons. In addition, those persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to underwriters or dealers participating in any such offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. Such transactions, if commenced, may be discontinued at any time. We make no representation or prediction as to the direction or magnitude of any effect that the transactions described above, if implemented, may have on the price of our securities.

All securities we may offer, other than common stock, will be new issues of securities with no established trading market. Any agents or underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities. There is currently no market for any of the offered securities, other than our common stock which is listed on The NASDAQ Global Market. We have no current plans for listing of the preferred stock, warrants, units or subscription rights on any securities exchange or quotation system; any such listing with respect to any particular preferred stock, warrants, units or subscription rights will be described in the applicable prospectus supplement or other offering materials, as the case may be. Any underwriters to whom securities are sold by us for public offering and sale may make a market in the securities, but such underwriters will not be obligated to do so and may discontinue any market making at any time without notice.

In order to comply with the securities laws of some states, if applicable, the securities offered pursuant to this prospectus will be sold in those states only through registered or licensed brokers or dealers. In addition, in some states securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and complied with.

## LEGAL MATTERS

The validity of the issuance of the shares of common stock and shares of preferred stock offered hereby will be passed upon for us by Brownstein Hyatt Farber Schreck, LLP, Las Vegas, Nevada. Lowenstein Sandler, LLP, New York, New York, will pass upon certain legal matters relating to the issuance and sale of the securities offered hereby on behalf of Tonix Pharmaceuticals Holding Corp.

## EXPERTS

The consolidated balance sheets of Tonix Pharmaceuticals Holding Corp. and subsidiaries as of December 31, 2019 and 2018 and the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the years then ended have been audited by EisnerAmper LLP, independent registered public accounting firm, as stated in their report which is incorporated herein by reference, which report includes explanatory paragraphs about the existence of substantial doubt concerning the Company's ability to continue as a going concern and the change in method of accounting for leases due to the adoption of Accounting Standards Codification Topic 842, Leases. Such financial statements have been incorporated herein by reference in reliance on the report of such firm given upon their authority as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

This prospectus constitutes a part of a registration statement on Form S-3 filed under the Securities Act. As permitted by the SEC's rules, this prospectus and any prospectus supplement, which form a part of the registration statement, do not contain all the information that is included in the registration statement. You will find additional information about us in the registration statement. Any statements made in this prospectus or any prospectus supplement concerning legal documents are not necessarily complete and you should read the documents that are filed as exhibits to the registration statement or otherwise filed with the SEC for a more complete understanding of the document or matter.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read, without charge, and copy the documents we file at the SEC's public reference rooms in Washington, D.C. at 100 F Street, NE, Room 1580, Washington, DC 20549. You can request copies of these documents by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. Our SEC filings are also available to the public at no cost from the SEC's website at <http://www.sec.gov>.

## INCORPORATION OF DOCUMENTS BY REFERENCE

We have filed a registration statement on Form S-3 with the Securities and Exchange Commission under the Securities Act. This prospectus is part of the registration statement but the registration statement includes and incorporates by reference additional information and exhibits. The Securities and Exchange Commission permits us to "incorporate by reference" the information contained in documents we file with the Securities and Exchange Commission, which means that we can disclose important information to you by referring you to those documents rather than by including them in this prospectus. Information that is incorporated by reference is considered to be part of this prospectus and you should read it with the same care that you read this prospectus. Information that we file later with the Securities and Exchange Commission will automatically update and supersede the information that is either contained, or incorporated by reference, in this prospectus, and will be considered to be a part of this prospectus from the date those documents are filed. We have filed with the Securities and Exchange Commission, and incorporate by reference in this prospectus:

- Annual Report on Form 10-K for the year ended December 31, 2019, filed on March 24, 2020;
- Definitive Proxy Statement on Schedule 14A, filed on March 30, 2020;
- Current Reports on Form 8-K, filed on January 6, 2020, January 13, 2020, January 16, 2020, January 23, 2020, January 24, 2020, January 29, 2020, February 5, 2020, February 7, 2020, February 10, 2020, February 11, 2020, February 26, 2020, February 28, 2020, March 3, 2020, March 20, 2020, March 24, 2020 and April 8, 2020 (other than any portions thereof deemed furnished and not filed); and

- The description of our common stock contained in our Form 8-A, filed on July 23, 2013.

We also incorporate by reference all additional documents that we file with the Securities and Exchange Commission under the terms of Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, that are made after the initial filing date of the registration statement of which this prospectus is a part until the offering of the particular securities covered by a prospectus supplement or term sheet has been completed. We are not, however, incorporating, in each case, any documents or information that we are deemed to furnish and not file in accordance with Securities and Exchange Commission rules.

You may request, and we will provide you with, a copy of these filings, at no cost, by contacting us at:

Tonix Pharmaceuticals Holding Corp.  
509 Madison Avenue, Suite 1608  
New York, New York 10022  
Attention: Investor Relations  
Telephone (212) 980-9155

The information contained in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

**PROSPECTUS (Subject to Completion)**

**Dated April 8, 2020**

**\$50,000,000**



## **Common Stock**

On April 8, 2020, we entered into a certain Sales Agreement, or sales agreement, with A.G.P. / Alliance Global Partners, or A.G.P., relating to shares of our common stock offered by this prospectus. In accordance with the terms of the sales agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$50,000,000 from time to time through A.G.P.

Our common stock is quoted on The NASDAQ Global Market under the symbol "TNXP." On April 7, 2020, the last reported sale price of our common stock was \$0.70 per share.

Sales of our common stock, if any, under this prospectus may be made in sales deemed to be "at the market offerings" as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, or the Securities Act. If authorized by us in writing, A.G.P. may also sell shares of our common stock in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices. A.G.P. is not required to sell any specific number or dollar amount of securities, but will act as a sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between A.G.P. and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The compensation to A.G.P. for sales of common stock sold pursuant to the sales agreement will be equal to 3.0% of the gross proceeds of any shares of common stock sold under the sales agreement. In connection with the sale of the common stock on our behalf, A.G.P. will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of A.G.P. will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to A.G.P. with respect to certain liabilities, including liabilities under the Securities Act or the Exchange Act of 1934, as amended, or the Exchange Act.

*Investing in our common stock involves risks. See "Risk Factors" beginning on page 2 of this prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.*

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

**A.G.P.**

\_\_\_\_\_, 2020

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## ABOUT THIS PROSPECTUS

This prospectus relates to the offering of our common stock. Before buying any of the common stock that we are offering, we urge you to carefully read this prospectus, together with the accompanying base prospectus and the information incorporated by reference as described under the headings “Where You Can Find More Information” and “Incorporation of Certain Information by Reference” in this prospectus, and any free writing prospectus or prospectus supplement that we have authorized for use in connection with this offering. These documents contain important information that you should consider when making your investment decision.

This prospectus describes the terms of this offering of common stock and also adds to and updates information contained in the documents incorporated by reference into this prospectus. To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any document incorporated by reference into this prospectus that was filed with the Securities and Exchange Commission, or SEC, before the date of this prospectus, on the other hand, you should rely on the information in this prospectus. If any statement in one of these documents is inconsistent with a statement in another document having a later date — for example, a document incorporated by reference into this prospectus — the statement in the document having the later date modifies or supersedes the earlier statement.

We have not, and the sales agent has not, authorized anyone to provide you with information different than that contained or incorporated by reference in this prospectus and any free writing prospectus or prospectus supplement that we have authorized for use in connection with this offering. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. You should assume that the information appearing in this prospectus, the documents incorporated by reference herein, and in any free writing prospectus or prospectus supplement that we have authorized for use in connection with this offering is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus, the documents incorporated by reference herein, and any free writing prospectus or prospectus supplement that we have authorized for use in connection with this offering in their entirety before making an investment decision.

We are offering to sell, and are seeking offers to buy, the shares only in jurisdictions where such offers and sales are permitted. The distribution of this prospectus and the offering of the shares in certain jurisdictions or to certain persons within such jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus must inform themselves about and observe any restrictions relating to the offering of the shares and the distribution of this prospectus outside the United States. This prospectus does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

We own or have rights to various trademarks, service marks and trade names that we use in connection with the operation of our business. This prospectus may also contain trademarks, service marks and trade names of third parties, which are the property of their respective owners. Our use or display of third parties’ trademarks, service marks, trade names or products in this prospectus is not intended to, and does not imply a relationship with, or endorsement or sponsorship by us. Solely for convenience, the trademarks, service marks and trade names referred to in this prospectus may appear without the ®, TM or SM symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the right of the applicable licensor to these trademarks, service marks and trade names.

## CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the documents that we incorporate by reference, contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. Such forward-looking statements include those that express plans, anticipation, intent, contingency, goals, targets or future development and/or otherwise are not statements of historical fact. These statements include, but are not limited to, statements regarding:

- our expectations regarding clinical studies, the timing of clinical results, development timelines and regulatory filings and submissions for our product candidates;
- risks related to failure to obtain FDA clearances or approvals and noncompliance with FDA regulations;
- the time, resources, and expense required to develop and conduct clinical trials and seek regulatory approvals for our product candidates
- the success of competing therapies and products that are or may become available;
- uncertainties of government and third party payor reimbursement;
- the performance of third parties, including contract research organizations and third-party manufacturers;
- the cost of preparing, filing, prosecuting, defending, and enforcing patent claims and other patent related costs, including litigation costs and the results of such litigation;
- our liquidity and our expectations regarding our needs for and ability to raise additional capital;
- the amount, and our expected uses, of the net proceeds of this offering; and
- the impact the COVID-19 pandemic will have on our ability to advance our clinical development programs.

These forward-looking statements are based on our current expectations and projections about future events and they are subject to risks and uncertainties known and unknown to us that could cause actual results and developments to differ materially from those expressed or implied in such statements, including the risks described under “Risk Factors” in this prospectus and our Annual Report on Form 10-K for the year ended December 31, 2019 as updated by our subsequent filings under the Exchange Act, each of which is incorporated by reference in this prospectus in their entirety.

In some cases, you can identify forward-looking statements by terminology, such as “expects,” “anticipates,” “intends,” “estimates,” “plans,” “believes,” “seeks,” “may,” “should,” “could” or the negative of such terms or other similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus.

You should read this prospectus and the documents that we reference herein and therein, completely and with the understanding that our actual future results may be materially different from what we expect. You should assume that the information appearing in this prospectus and the documents incorporated by reference is accurate as of their respective dates. Our business, financial condition, results of operations and prospects may change. We may not update these forward-looking statements, even though our situation may change in the future, unless required by law to update and disclose material developments related to previously disclosed information. We qualify all of the information presented in this prospectus, and particularly our forward-looking statements, by these cautionary statements.

## PROSPECTUS SUMMARY

*The following summary is qualified in its entirety by, and should be read together with, the more detailed information and financial statements and related notes thereto appearing elsewhere or incorporated by reference in this prospectus. Before you decide to invest in our securities, you should read the entire prospectus carefully, including the risk factors and the financial statements and related notes included or incorporated by reference in this prospectus.*

*Unless otherwise indicated or unless the context requires otherwise, this prospectus includes the accounts of Tonix Pharmaceuticals Holding Corp., a Nevada corporation and its wholly-owned subsidiaries, collectively referred to as “we”, “us”, “Tonix” or the “Company”.*

### Overview

We are a clinical-stage biopharmaceutical company focused on discovering, licensing, acquiring and developing drugs and biologics to treat and prevent human disease and alleviate suffering. Our current portfolio includes biologics to prevent infectious diseases and small molecules and biologics to treat pain, psychiatric and addiction conditions. In February 2020, we announced a program to develop a potential vaccine, TNX-1800 (live modified horsepox virus vaccine for percutaneous administration) to protect against the novel coronavirus disease emerging in 2019, or COVID-19. TNX-1800 is based on our proprietary horsepox vaccine platform and is molecularly designed to express the Spike protein of the SARS-CoV-2 virus that causes COVID-19. TNX-801 (live horsepox virus vaccine for percutaneous administration) is in development to protect against smallpox and monkeypox. Our most advanced drug development programs are focused on delivering safe and effective long-term treatments for fibromyalgia, or FM, and posttraumatic stress disorder, or PTSD. Our most advanced product candidate, TNX-102 SL, is in Phase 3 development as a bedtime treatment for fibromyalgia and PTSD. We are enrolling participants in the Phase 3 RELIEF trial in fibromyalgia and expect results from an unblinded interim analysis in the third quarter of 2020 and topline data in the first half of 2021, however, we cannot predict whether the global COVID-19 pandemic will impact the timing of topline results. The Phase 3 RECOVERY trial (P302) for TNX-102 SL (trade name Tonmya) in PTSD has stopped enrollment based on the Independent Data Monitoring Committee’s recommendation to stop the study for futility following an interim analysis of the first 50% of enrolled participants. Topline data for RECOVERY is expected in the second quarter of 2020, however, we cannot predict whether the global COVID-19 pandemic will impact the timing of topline results. TNX-102 SL for PTSD has U.S. Food and Drug Administration (FDA) Breakthrough Therapy Designation. TNX-102 SL is also in development for agitation in Alzheimer’s disease and alcohol use disorder (AUD). The agitation in Alzheimer’s disease program is Phase 2 ready with FDA Fast Track designation, and the development program for AUD is in the pre-Investigational New Drug (IND) application stage. Our programs for treating addiction conditions also include TNX-1300\* (T172R/G173Q double-mutant cocaine esterase 200 mg, i.v. solution), which is in Phase 2 development for the treatment of cocaine intoxication and has FDA Breakthrough Therapy Designation. TNX-601 CR (tianeptine oxalate controlled-release tablets) is in development as a daytime treatment for depression as well as PTSD and corticosteroid-induced cognitive dysfunction. The first efficacy study in depression will be performed outside the U.S. TNX-1600 (a triple reuptake inhibitor) is a pre-clinical new molecular entity (NCE) being developed as a treatment for PTSD. Our preclinical pipeline includes TNX-1500 (anti-CD154), a monoclonal antibody being developed to prevent and treat organ transplant rejection and autoimmune conditions and TNX-1700 (rTFF2), a biologic being developed to treat gastric and pancreatic cancers. TNX-1200\* (live vaccinia virus vaccine for percutaneous administration) is in development to protect against smallpox and monkeypox. Finally, TNX-701 (undisclosed small molecule) to prevent radiation effects is being advanced as a medical countermeasure to improve biodefense.

### Corporate Information

We were incorporated on November 16, 2007 under the laws of the State of Nevada as Tamandare Explorations Inc. On October 11, 2011, we changed our name to Tonix Pharmaceuticals Holding Corp. Our principal executive offices are located at 509 Madison Avenue, Suite 306, New York, New York 10022, and our telephone number is (212) 980-9155. Our website addresses are [www.tonixpharma.com](http://www.tonixpharma.com), [www.tonix.com](http://www.tonix.com), and [www.krele.com](http://www.krele.com). The information on our websites is not part of this prospectus. We have included our website addresses as a factual reference and do not intend them to be active links to our websites.

### The Offering

<b>Common stock offered by us:</b>	Shares of our common stock having an aggregate offering price of up to \$50,000,000.
<b>Manner of offering:</b>	“At the market offering” that may be made from time to time through our sales agent, A.G.P. See “Plan of Distribution” on page 4.
<b>Use of proceeds:</b>	We intend to use the net proceeds, if any, from this offering, for working capital and general corporate purposes. See “Use of Proceeds” on page 3.
<b>Risk Factors:</b>	Investing in our common stock involves significant risks. See “Risk Factors” beginning on page 2 of this prospectus and other information included or incorporated by reference into this prospectus for a discussion of factors you should carefully consider before investing in our securities.
<b>NASDAQ Global Market trading symbol:</b>	TNXP



## RISK FACTORS

*Investing in our common stock involves a high degree of risk. Prior to making a decision about investing in our common stock, you should carefully consider the specific risk factors discussed in the sections entitled "Risk Factors" contained in our annual report on Form 10-K for the fiscal year ended December 31, 2019 under the heading "Item 1A. Risk Factors," and as described or may be described in any subsequent quarterly report on Form 10-Q under the heading "Item 1A. Risk Factors," as well as in any applicable prospectus supplement and contained or to be contained in our filings with the SEC and incorporated by reference in this prospectus, together with all of the other information contained in this prospectus, or any applicable prospectus supplement. For a description of these reports and documents, and information about where you can find them, see "Where You Can Find More Information" and "Incorporation of Certain Information by Reference." If any of the risks or uncertainties described in our SEC filings or any prospectus supplement or any additional risks and uncertainties actually occur, our business, financial condition and results of operations could be materially and adversely affected.*

### **Risks Relating to this Offering**

***We may allocate the net proceeds from this offering in ways that you or other stockholders may not approve.***

We currently intend to use the net proceeds of this offering, if any, for working capital and general corporate purposes, which may include capital expenditures, research and development expenditures, regulatory affairs expenditures, clinical trial expenditures, acquisitions of new technologies and investments, and the financing of possible acquisitions or business expansions. This expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development efforts, the status of and results from clinical trials, as well as any third party intellectual property or other assets that we may opportunistically identify and seek to license or acquire or any collaborations that we may enter into with third parties for our product candidates, and any unforeseen cash needs. Because the number and variability of factors that will determine our use of the proceeds from this offering, their ultimate use may vary substantially from their currently intended use. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering and could spend the proceeds in ways that do not necessarily improve our operating results or enhance the value of our common stock. See "Use of Proceeds."

## USE OF PROCEEDS

We currently intend to use the net proceeds from this offering, if any, for working capital and general corporate purposes.

The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business. As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the net proceeds to us from this offering. As a result, our management will have broad discretion regarding the timing and application of the net proceeds from this offering. Pending their ultimate use, we intend to invest the net proceeds in short-term, investment-grade, interest-bearing instruments.

## MARKET PRICE OF OUR COMMON STOCK

Our common stock is presently listed on The NASDAQ Global Market under the symbol “TNXP”. On April 7, 2020, the last reported sale price of our common stock was \$0.70.

### Holders

As of April 7, 2020 we had 105 registered holders of record of our common stock. A substantially greater number of holders of our common stock are “street name” or beneficial holders, whose shares of record are held through banks, brokers, other financial institutions and registered clearing agencies.

## DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock. We currently intend to retain our future earnings, if any, for use in our business and therefore do not anticipate paying cash dividends in the foreseeable future. Payment of future dividends, if any, will be at the discretion of our board of directors after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs and plans for expansion.

## PLAN OF DISTRIBUTION

We have entered into the sales agreement with A.G.P. under which we may issue and sell shares of our common stock from time to time up to \$50,000,000 to or through A.G.P., acting as our sales agent. The sales of our common stock, if any, under this prospectus supplement will be made at market prices by any method deemed to be an “at the market offering” as defined in Rule 415(a)(4) under the Securities Act, including sales made directly on The NASDAQ Global Market, on any other existing trading market for our common stock or to or through a market maker.

Each time that we wish to issue and sell shares of our common stock under the sales agreement, we will provide A.G.P. with a placement notice describing the amount of shares to be sold, the time period during which sales are requested to be made, any limitation on the amount of shares of common stock that may be sold in any single day, any minimum price below which sales may not be made or any minimum price requested for sales in a given time period and any other instructions relevant to such requested sales. Upon receipt of a placement notice, A.G.P., acting as our sales agent, will use commercially reasonable efforts, consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of The NASDAQ Global Market, to sell shares of our common stock under the terms and subject to the conditions of the placement notice and the sales agreement. We or A.G.P. may suspend the offering of common stock pursuant to a placement notice upon notice and subject to other conditions.

Settlement for sales of common stock, unless the parties agree otherwise, will occur on the second trading day following the date on which any sales are made in return for payment of the net proceeds to us. There are no arrangements to place any of the proceeds of this offering in an escrow, trust or similar account. Sales of our common stock as contemplated in this prospectus supplement will be settled through the facilities of The Depository Trust Company or by such other means as we and A.G.P. may agree upon.

We will pay A.G.P. commissions for its services in acting as our sales agent in the sale of our common stock pursuant to the sales agreement. A.G.P. will be entitled to compensation at a fixed commission rate of 3.0% of the gross proceeds from the sale of our common stock on our behalf pursuant to the sales agreement. We have also agreed to reimburse A.G.P. for its reasonable and documented out-of-pocket expenses (including but not limited to the reasonable and documented fees and expenses of its legal counsel) in an amount not to exceed \$40,000.

We estimate that the total expenses for this offering, excluding compensation payable to A.G.P. and certain expenses reimbursable to A.G.P. under the terms of the sales agreement, will be approximately \$50,000. The remaining sales proceeds, after deducting any expenses payable by us and any transaction fees imposed by any governmental, regulatory, or self-regulatory organization in connection with the sales, will equal our net proceeds for the sale of such common stock.

Because there are no minimum sale requirements as a condition to this offering, the actual total public offering price, commissions and net proceeds to us, if any, are not determinable at this time. The actual dollar amount and number of shares of common stock we sell through this prospectus supplement will be dependent, among other things, on market conditions and our capital raising requirements.

We will report at least quarterly the number of shares of common stock sold through A.G.P. under the sales agreement, the net proceeds to us and the compensation paid by us to A.G.P. in connection with the sales of common stock under the sales agreement.

In connection with the sale of the common stock on our behalf, A.G.P. will be deemed to be an “underwriter” within the meaning of the Securities Act, and the compensation of A.G.P. will be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to A.G.P. against certain civil liabilities, including liabilities under the Securities Act.

A.G.P. will not engage in any market making activities involving our common stock while the offering is ongoing under this prospectus supplement if such activity would be prohibited under Regulation M or other anti-manipulation rules under the Securities Act. As our sales agent, A.G.P. will not engage in any transactions that stabilizes our common stock.

The offering pursuant to the sales agreement will terminate upon the earlier of (i) the sale of all shares of common stock subject to the sales agreement and (ii) termination of the sales agreement as permitted therein. We may terminate the sales agreement in our sole discretion at any time by giving 10 days' prior notice to A.G.P. A.G.P. may terminate the sales agreement under the circumstances specified in the sales agreement and in its sole discretion at any time by giving 10 days' prior notice to us.

A.G.P. and/or its affiliates have provided, and may in the future provide, various investment banking and other financial services for us, for which services they have received and may in the future receive customary fees.

This prospectus supplement in electronic format may be made available on a website maintained by A.G.P., and A.G.P. may distribute this prospectus supplement electronically.

#### **LEGAL MATTERS**

The validity of the shares of common stock offered by this prospectus will be passed upon by Brownstein Hyatt Farber Schreck, LLP, Las Vegas, Nevada. A.G.P. / Alliance Global Partners is being represented in connection with this offering by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., New York, New York.

#### **EXPERTS**

The consolidated balance sheets of Tonix Pharmaceuticals Holding Corp. and subsidiaries as of December 31, 2019 and 2018 and the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the years then ended have been audited by EisnerAmper LLP, independent registered public accounting firm, as stated in their report which is incorporated herein by reference, which report includes explanatory paragraphs about the existence of substantial doubt concerning the Company's ability to continue as a going concern and the change in method of accounting for leases due to the adoption of Accounting Standards Codification Topic 842, Leases. Such financial statements have been incorporated herein by reference in reliance on the report of such firm given upon their authority as experts in accounting and auditing.

#### **WHERE YOU CAN FIND MORE INFORMATION**

This prospectus is part of the registration statement on Form S-3 we filed with the Securities and Exchange Commission, or SEC, under the Securities Act, and does not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus to any of our contracts, agreements or other documents, the reference may not be complete, and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus for a copy of such contract, agreement or other document. You may inspect a copy of the registration statement, including the exhibits and schedules, without charge, at the SEC's public reference room mentioned below, or obtain a copy from the SEC upon payment of the fees prescribed by the SEC.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read, without charge, and copy the documents we file at the SEC's public reference rooms in Washington, D.C. at 100 F Street, NE, Room 1580, Washington, DC 20549. You can request copies of these documents by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. Our SEC filings are also available to the public at no cost from the SEC's website at <http://www.sec.gov>.

## INCORPORATION OF DOCUMENTS BY REFERENCE

We incorporate by reference the filed documents listed below, except as superseded, supplemented or modified by this prospectus, and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (unless otherwise noted, the SEC file number for each of the documents listed below is 001-36019):

- Annual Report on Form 10-K for the year ended December 31, 2019, filed on March 24, 2020;
- Definitive Proxy Statement on Schedule 14A, filed on March 30, 2020;
- Current Reports on Form 8-K, filed on January 6, 2020, January 13, 2020, January 16, 2020, January 23, 2020, January 24, 2020, January 29, 2020, February 5, 2020, February 7, 2020, February 10, 2020, February 11, 2020, February 26, 2020, February 28, 2020, March 3, 2020, March 20, 2020, March 24, 2020 and April 8, 2020 (other than any portions thereof deemed furnished and not filed); and
- The description of our common stock contained in our Form 8-A, filed on July 23, 2013.

We also incorporate by reference into this prospectus additional documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits on such form that are related to such items) that we may file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the completion or termination of the offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information deemed furnished and not filed with the SEC. Any statements contained in a previously filed document incorporated by reference into this prospectus is deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, or in a subsequently filed document also incorporated by reference herein, modifies or supersedes that statement.

This prospectus may contain information that updates, modifies or is contrary to information in one or more of the documents incorporated by reference in this prospectus. You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus, or the date of the documents incorporated by reference in this prospectus.

We will provide to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, at no cost to the requester, a copy of any and all of the information that is incorporated by reference in this prospectus.

You may request, and we will provide you with, a copy of these filings, at no cost, by contacting us at:

Tonix Pharmaceuticals Holding Corp.  
509 Madison Avenue, Suite 1608  
New York, New York 10022  
Attention: Investor Relations  
Telephone (212) 980-9155

**\$50,000,000**



**Common Stock**

**PROSPECTUS**

**A.G.P.**

\_\_\_\_\_, 2020

**PART II**

**INFORMATION NOT REQUIRED IN PROSPECTUS**

**ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.**

The expenses in connection with the issuance and distribution of the securities being registered, other than underwriting discounts and commissions, are estimated below:

SEC registration fee	\$	19,470
FINRA filing fee		*
NASDAQ listing fee		*
Legal fees and expenses		*
Accounting fees and expenses		*
Transfer agent fees and expenses		*
Printing and engraving expenses		*
Miscellaneous expenses		*
Total		*

\*Estimated expenses are presently not known and cannot be estimated.

**ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS.**

Nevada Revised Statutes (“NRS”) 78.7502(1) provides that a corporation may indemnify, pursuant to the provisions of that statute, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation), by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses, including attorneys’ fees, judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with the action, suit or proceeding if the person (i) is not liable pursuant to NRS 78.138 or (ii) acted in good faith and in a manner which he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the conduct was unlawful. NRS 78.7502(2) provides that a corporation may indemnify, pursuant to the provisions of that statute, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses, including amounts paid in settlement and attorneys’ fees actually and reasonably incurred by the person in connection with the defense or settlement of the action or suit if the person (a) is not liable pursuant to NRS 78.138 or (ii) acted in good faith and in a manner which he or she reasonably believed to be in or not opposed to the best interests of the corporation. To the extent that a director, officer, employee or agent of a corporation has been successful on the merits or otherwise in defense of any such action, suit or proceeding, or in defense of any claim, issue or matter therein, the corporation shall indemnify him or her against expenses, including attorneys’ fees, actually and reasonably incurred by him or her in connection with the defense. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent, does not, of itself, create a presumption that the person is liable pursuant to NRS 78.138 or did not act in good faith and in a manner which he or she reasonably believed to be in or not opposed to the best interests of the corporation, or that, with respect to any criminal action or proceeding, he or she had reasonable cause to believe that the conduct was unlawful. Indemnification made pursuant to NRS 78.7502 may not be made for any claim, issue or matter as to which such a person has been adjudged by a court of competent jurisdiction, after exhaustion of all appeals therefrom, to be liable to the corporation or for amounts paid in settlement to the corporation, unless and only to the extent that the court in which the action or suit was brought or other court of competent jurisdiction determines upon application that in view of all the circumstances of the case, the person is fairly and reasonably entitled to indemnity for such expenses as the court deems proper.

NRS 78.7502(3) provides that any discretionary indemnification pursuant to NRS 78.7502 (unless ordered by a court or advanced pursuant to NRS 78.751(2)), may be made by the corporation only as authorized in the specific case upon a determination that indemnification of the director, officer, employee or agent is proper in the circumstances. The determination must be made (i) by the stockholders; (ii) by the board of directors by majority vote of a quorum consisting of directors who were not parties to the action, suit or proceeding; (iii) if a majority vote of a quorum consisting of directors who were not parties to the action, suit or proceeding so orders, by independent legal counsel in a written opinion; or (iv) if a quorum consisting of directors who were not parties to the action, suit or proceeding cannot be obtained, by independent legal counsel in a written opinion. NRS 78.751(2) provides that unless otherwise restricted by the corporation's articles of incorporation or bylaws, or an agreement made by the corporation, the corporation may pay the expenses of officers and directors incurred in defending a civil or criminal action, suit or proceeding must be paid by the corporation as they are incurred and in advance of the final disposition of the action, suit or proceeding, upon receipt of an undertaking by or on behalf of the director or officer to repay the amount if it is ultimately determined by a court of competent jurisdiction that the director or officer is not entitled to be indemnified by the corporation.

Our articles of incorporation provide that our directors or officers shall not be personally liable to us or our stockholders for monetary damages for breach of such director's or officer's fiduciary duty, except for liability (i) for any breach of the duty of loyalty to our company or our stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, or (iii) for any transaction from which the officer or director derived any improper personal benefit. Our articles of incorporation and our amended and restated bylaws provide for the indemnification of any of our directors and officers who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such person is or was a director or officer of the our company , against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, subject to certain express limitations and conditions. We believe that these provisions in our articles of incorporation bylaws, as amended, are necessary to attract and retain qualified persons as directors and officers.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.



## ITEM 16. EXHIBITS

- a) Exhibits.
- 1.01 \* Form of Underwriting Agreement.
- [1.02](#) Sales Agreement, dated April 8, 2020, by and between Tonix Pharmaceuticals Holding Corp. and A.G.P. / Alliance Global Partners, filed herewith.
- [3.01](#) Articles of Incorporation, filed as an exhibit to the Registration Statement on Form S-1, filed with the Commission on April 9, 2008 and incorporated herein by reference.
- [3.02](#) Articles of Merger between Tamandare Explorations Inc. and Tonix Pharmaceuticals Holding Corp., effective October 11, 2011, filed as an exhibit to the Current Report on Form 8-K, filed with the Commission on October 17, 2011 and incorporated herein by reference.
- [3.03](#) Third Amended and Restated Bylaws, filed as an exhibit to the Current Report on Form 8-K, filed with the Commission on June 3, 2016 and incorporated herein by reference.
- [3.04](#) Certificate of Change of Tonix Pharmaceuticals Holding Corp., dated March 13, 2017 and effective March 17, 2017, filed as an exhibit to the Current Report on Form 8-K, filed with the Commission on March 16, 2017 and incorporated herein by reference.
- [3.05](#) Certificate of Amendment to Tonix Pharmaceuticals Holding Corp.'s Articles of Incorporation, as amended, filed with the Secretary of State of the State of Nevada on June 16, 2017, filed as an exhibit to the Current Report on Form 8-K, filed with the Commission on June 16, 2017 and incorporated herein by reference.
- [3.06](#) Specimen Common Stock Certificate, filed as an exhibit to the Current Report on Form 8-K, filed with the Commission on May 24, 2018 and incorporated herein by reference.
- 3.07 Certificate of Amendment to Tonix Pharmaceuticals Holding Corp.'s Articles of Incorporation, as amended, filed with the Secretary of State of the State of Nevada on May 3, 2019, filed as an exhibit to the Current Report on Form 8-K, filed with the Commission on May 3, 2019 and incorporated herein by reference.
- 4.01 \* Specimen Common Stock Certificate of the Registrant, filed as an exhibit to the Current Report on Form 8-K, filed with the Commission on May 24, 2018 and incorporated herein by reference..
- 4.02 \* Form of Warrant Agreement, including form of Warrant.
- 4.03 \* Form of Unit Agreement.
- [5.01](#) Opinion of Brownstein Hyatt Farber Schreck, LLP.
- [5.02](#) Opinion of Lowenstein Sandler, LLP.
- [23.01](#) Consent of EisnerAmper LLP.
- [23.02](#) Consent of Brownstein Hyatt Farber Schreck, LLP (included in Exhibit 5.01).
- [23.03](#) Consent of Lowenstein Sandler, LLP (included in Exhibit 5.02).
- [24.01](#) Power of Attorney (contained on the signature pages to the registration statement).

\* To be filed by amendment or as an exhibit to a Current Report on Form 8-K and incorporated herein by reference, if applicable.

## ITEM 17. UNDERTAKINGS.

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of the securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this registration statement;

provided, however, that the undertakings set forth in paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") that are incorporated by reference in this registration statement or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of this registration statement;

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser:

(i) If the registrant is relying on Rule 430B;

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of this registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424 (b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date of the Securities Act prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

(ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing of the Registration Statement on Form S-3 and has duly caused this Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized, in New York, New York, on the 8<sup>th</sup> day of April, 2020.

### TONIX PHARMACEUTICALS HOLDING CORP.

Date: April 8, 2020

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

Date: April 8, 2020

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

## POWER OF ATTORNEY

### KNOW ALL PERSONS BY THESE PRESENTS:

That the undersigned officers and directors of Tonix Pharmaceuticals Holding Corp., a Nevada corporation, do hereby constitute and appoint Seth Lederman and Bradley Saenger and each of them his or her true and lawful attorney-in-fact and agent with full power and authority to do any and all acts and things and to execute any and all instruments which said attorney and agent, determine may be necessary or advisable or required to enable said corporation to comply with the Securities Act of 1933, as amended, and any rules or regulations or requirements of the Securities and Exchange Commission in connection with this Registration Statement. Without limiting the generality of the foregoing power and authority, the powers granted include the power and authority to sign the names of the undersigned officers and directors in the capacities indicated below to this Registration Statement, and to any and all instruments or documents filed as part of or in conjunction with this Registration Statement or amendments or supplements thereof, including post-effective amendments, to this Registration Statement or any registration statement relating to this offering to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, and each of the undersigned hereby ratifies and confirms that said attorney and agent, shall do or cause to be done by virtue thereof. This Power of Attorney may be signed in several counterparts.

IN WITNESS WHEREOF, each of the undersigned has executed this Power of Attorney. In accordance with the requirements of the Securities Act of 1933, as amended, this registration statement was signed by the following persons in the capacities and on the dates stated:

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ SETH LEDERMAN</u> Seth Lederman	Chief Executive Officer (Principal Executive Officer) and Director	April 8, 2020
<u>/s/ BRADLEY SAENGER</u> Bradley Saenger	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	April 8, 2020
<u>/s/ MARGARET SMITH BELL</u> Margaret Smith Bell	Director	April 8, 2020
<u>/s/ DANIEL GOODMAN</u> Daniel Goodman	Director	April 8, 2020
<u>/s/ DAVID GRANGE</u> David Grange	Director	April 8, 2020
<u>/s/ ADEOYE OLUKOTUN</u> Adeoye Olukotun	Director	April 8, 2020
<u>/s/ JOHN RHODES</u> John Rhodes	Director	April 8, 2020
<u>/s/ JAMES TRECO</u> James Treco	Director	April 8, 2020

TONIX PHARMACEUTICALS HOLDING CORP.

COMMON STOCK

SALES AGREEMENT

April 8, 2020

A.G.P./Alliance Global Partners  
590 Madison Avenue  
New York, NY 10022

Ladies and Gentlemen:

Tonix Pharmaceuticals Holding Corp., a Nevada corporation (the “Company”), confirms its agreement (this “Agreement”) with A.G.P./Alliance Global Partners, as follows:

1. Issuance and Sale of Shares. The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell to or through A.G.P./Alliance Global Partners, acting as agent and/or principal (the “Sales Agent”), shares of the Company’s common stock, par value \$0.001 per share (the “Common Stock”), subject to the limitations set forth in Section 3(b) hereof. The issuance and sale of shares of Common Stock to or through the Sales Agent will be effected pursuant to the Registration Statement (as defined below) filed by the Company and which was declared effective under the Securities Act (as defined below) by the U.S. Securities and Exchange Commission (the “Commission”).

On the date of this Agreement, the Company has filed, or will file, in accordance with the provisions of the Securities Act of 1933, as amended, and the rules and regulations thereunder (collectively, the “Securities Act”), with the Commission, a shelf registration statement on Form S-3, including a base prospectus, relating to certain securities, including the Common Stock, to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder (collectively, the “Exchange Act”). The Company has prepared a prospectus supplement specifically relating to the offering of Common Stock pursuant to this Agreement included as part of such registration statement (the “ATM Prospectus”). As soon as practicable following the date that such registration statement is declared effective, the Company will furnish to the Sales Agent, for use by the Sales Agent, copies of the ATM Prospectus included as part of such registration statement, relating to the Placement Shares (as defined below). Except where the context otherwise requires, such registration statement, as amended when it becomes effective, including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act or deemed to be a part of such registration statement pursuant to Rule 430B or 462(b) of the Securities Act, is herein called the “Registration Statement.” The base prospectus, including all documents incorporated therein by reference (to the extent such information has not been superseded or modified in accordance with Rule 412 under the Securities Act (as qualified by Rule 430B(g) of the Securities Act), and the ATM Prospectus, including all documents incorporated therein by reference (to the extent such information has not been superseded or modified in accordance with Rule 412 under the Securities Act (as qualified by Rule 430B(g) of the Securities Act), each of which is included in the Registration Statement, as it or they may be supplemented by any additional prospectus supplement, in the form in which such prospectus and/or ATM Prospectus have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act, together with any “issuer free writing prospectus” (“Issuer Free Writing Prospectus”), as defined in Rule 433 of the Securities Act (“Rule 433”), relating to the Placement Shares that (i) is required to be filed with the Commission by the Company or (ii) is exempt from filing pursuant to Rule 433(d)(5)(i), in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company’s records pursuant to Rule 433(g), is herein called the “Prospectus.” Any reference herein to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated by reference therein, and any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement or the Prospectus shall be deemed to refer to and include the filing after the execution hereof of any document with the Commission deemed to be incorporated by reference therein. For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include any copy filed with the Commission pursuant to either the Electronic Data Gathering Analysis and Retrieval System, or if applicable, the Interactive Data Electronic Applications (collectively “EDGAR”).

2 . **Placements.** Each time that the Company wishes to issue and sell the Common Stock through the Sales Agent, as agent, hereunder (each, a **Placement**”), it will notify the Sales Agent by email notice (or other method mutually agreed to in writing by the parties) (a **“Placement Notice”**) containing the parameters in accordance with which it desires the Common Stock to be sold, which shall at a minimum include the number of shares of Common Stock to be issued (the **“Placement Shares”**), the time period during which sales are requested to be made, any limitation on the number of shares of Common Stock that may be sold in any one Trading Day (as defined in **Section 3**) and any minimum price below which sales may not be made, a form of which containing such minimum sales parameters necessary is attached hereto as **Schedule 1**. The Placement Notice shall originate from any of the individuals from the Company set forth on **Schedule 2** (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from the Sales Agent set forth on **Schedule 2**, as such **Schedule 2** may be amended from time to time. The Placement Notice shall be effective upon receipt by the Sales Agent unless and until (i) in accordance with the notice requirements set forth in **Section 4**, the Sales Agent declines to accept the terms contained therein for any reason, in its sole discretion, (ii) the entire amount of the Placement Shares have been sold, (iii) in accordance with the notice requirements set forth in **Section 4**, the Company suspends or terminates the Placement Notice, (iv) the Company issues a subsequent Placement Notice with parameters superseding those on the earlier dated Placement Notice, or (v) the Agreement has been terminated under the provisions of **Section 11**. The amount of any discount, commission or other compensation to be paid by the Company to the Sales Agent in connection with the sale of the Placement Shares through the Sales Agent, as agent, shall be as set forth in **Schedule 3**. It is expressly acknowledged and agreed that neither the Company nor the Sales Agent will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to the Sales Agent and the Sales Agent does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3. Sale of Placement Shares by the Sales Agent

(a) Subject to the terms and conditions herein set forth, upon the Company's issuance of a Placement Notice, and unless the sale of the Placement Shares described therein has been declined, suspended, or otherwise terminated in accordance with the terms of this Agreement, the Sales Agent, as agent for the Company, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of The Nasdaq Capital Market (the "Exchange"), for the period specified in the Placement Notice, to sell such Placement Shares up to the amount specified by the Company in, and otherwise in accordance with the terms of such Placement Notice. If acting as agent hereunder, the Sales Agent will provide written confirmation to the Company (including by email correspondence to each of the individuals of the Company set forth on Schedule 2, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the volume-weighted average price of the Placement Shares, the compensation payable by the Company to the Sales Agent pursuant to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by the Sales Agent (as set forth in Section 5(a)) from the gross proceeds that it receives from such sales. Subject to the terms of the Placement Notice, the Sales Agent may sell Placement Shares by any method permitted by law deemed to be an "at the market" offering as defined in Rule 415 under the Securities Act, including without limitation sales made directly on the Exchange, on any other existing trading market for the Common Stock or to or through a market maker. Subject to the terms of a Placement Notice, the Sales Agent may also sell Placement Shares by any other method permitted by law, including but not limited to in negotiated transactions with the Company's prior written consent. The Company acknowledges and agrees that (i) there can be no assurance that the Sales Agent will be successful in selling Placement Shares, (ii) the Sales Agent will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by the Sales Agent to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares as required under this Agreement and (iii) the Sales Agent shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement, except as otherwise agreed by the Sales Agent and the Company in writing and expressly set forth in a Placement Notice. For the purposes hereof, "Trading Day" means any day on which the Company's Common Stock is purchased and sold on the principal market on which the Common Stock is listed or quoted.

(b) Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate number or gross sales proceeds of Placement Shares sold pursuant to this Agreement would exceed the lesser of: (i) the number or dollar amount of shares of Common Stock registered pursuant to the Registration Statement pursuant to which the offering hereunder is being made, (ii) the number of authorized but unissued and unreserved shares of Common Stock, (iii) the number or dollar amount of shares of Common Stock permitted to be offered and sold by the Company under Form S-3 (including General Instruction I.B.6. of Form S-3, if and for so long as applicable), (iv) the number or dollar amount of shares of Common Stock authorized from time to time to be issued and sold under this Agreement by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to the Sales Agent in writing, or (v) the number or dollar amount of shares of Common Stock for which the Company has filed the ATM Prospectus or other prospectus supplement specifically relating to the offering of the Placement Shares pursuant to this Agreement. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to this Agreement at a price lower than the minimum price authorized from time to time by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to the Sales Agent in writing. Notwithstanding anything to the contrary contained herein, the parties hereto acknowledge and agree that compliance with the limitations set forth in this Section 3(b) on the number or dollar amount of Placement Shares that may be issued and sold under this Agreement from time to time shall be the sole responsibility of the Company, and that the Sales Agent shall have no obligation in connection with such compliance.

(c) During the term of this Agreement, neither the Sales Agent nor any of its affiliates or subsidiaries shall engage in (i) any short sale of any security of the Company or (ii) any sale of any security of the Company that the Sales Agent does not own or any sale which is consummated by the delivery of a security of the Company borrowed by, or for the account of, the Sales Agent. During the term of this Agreement and notwithstanding anything to the contrary herein, the Sales Agent agrees that in no event will the Sales Agent or its affiliates engage in any market making, bidding, stabilization or other trading activity with regard to the Common Stock or related derivative securities if such activity would be prohibited under Regulation M or other anti-manipulation rules under the Exchange Act.

#### 4. Suspension of Sales.

(a) The Company or the Sales Agent may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 2, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party set forth on Schedule 2), suspend any sale of Placement Shares for a period of time (a "Suspension Period"); *provided, however*, that such suspension shall not affect or impair either party's obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. Each of the parties agrees that no such notice under this Section 4 shall be effective against the other unless it is made to one of the individuals named on Schedule 2 hereto, as such schedule may be amended from time to time. During a Suspension Period, the Company shall not issue any Placement Notices and the Sales Agent shall not sell any Placement Shares hereunder. The party that issued a suspension notice shall notify the other party in writing of the Trading Day on which the Suspension Period shall expire not later than twenty-four (24) hours prior to such Trading Day.



(b) Notwithstanding any other provision of this Agreement, during any period in which the Company is in possession of material non-public information, the Company and the Sales Agent agree that (i) no sale of Placement Shares will take place, (ii) the Company shall not request the sale of any Placement Shares, and (iii) the Sales Agent shall not be obligated to sell or offer to sell any Placement Shares.

5. Settlement.

(a) Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the second (2<sup>nd</sup>) Trading Day (or such earlier day as is industry practice for regular-way trading) following the respective Point of Sale (as defined below) (each, a **Settlement Date**). The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the **Net Proceeds**) will be equal to the aggregate sales price received by the Sales Agent at which such Placement Shares were sold, after deduction for (i) the Sales Agent's discount, commission or other compensation for such sales payable by the Company pursuant to Section 2 hereof, and (ii) any transaction fees imposed by any clearing organization or any governmental or self-regulatory organization in respect of such sales.

(b) Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting the Sales Agent's or its designee's account (provided the Sales Agent shall have given the Company written notice of such designee prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. On each Settlement Date, the Sales Agent will deliver the related Net Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver duly authorized Placement Shares on a Settlement Date, through no fault of the Sales Agent, the Company agrees that in addition to and in no way limiting the rights and obligations set forth in Section 9(a) (Indemnification and Contribution) hereto, the Company will (i) hold the Sales Agent, its directors, officers, members, partners, employees and agents of the Sales Agent, each broker dealer affiliate of the Sales Agent, and each person, if any, who (A) controls the Sales Agent within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (B) is controlled by or is under common control with the Sales Agent (each, a "**Sales Agent Affiliate**"), and the Sales Agent's clearing organization, harmless against any loss, claim, damage, or reasonable and documented expense (including reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to the Sales Agent any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

6. Representations and Warranties of the Company. The Company represents and warrants to, and agrees with, the Sales Agent that as of each Applicable Time (as defined in Section 22(a)), unless such representation, warranty or agreement specifies a different time or times:

( a ) Compliance with Registration Requirements. As of each Applicable Time other than the date of this Agreement, the Registration Statement and any Rule 462(b) Registration Statement have been declared effective by the Commission under the Securities Act. The Company has complied to the Commission's satisfaction with all requests of the Commission for additional or supplemental information related to the Registration Statement and the Prospectus. No stop order suspending the effectiveness of the Registration Statement or any Rule 462(b) Registration Statement is in effect and no proceedings for such purpose have been instituted or are pending or, to the knowledge of the Company, are contemplated or threatened by the Commission. The Registration Statement and, assuming no act or omission on the part of the Sales Agent that would make such statements untrue, the offer and sale of the Placement Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said Rule. In the section entitled "Plan of Distribution" in the ATM Prospectus, the Company has named A.G.P./Alliance Global Partners as an agent that the Company has engaged in connection with the transactions contemplated by this Agreement. The Company was not and is not an "ineligible issuer" as defined in Rule 405 under the Securities Act.

(b) No Misstatement or Omission. The Registration Statement and any post-effective amendment thereto, at the time it became or becomes effective, complied or will comply in all material respects with the Securities Act. The Prospectus, and any amendment or supplement thereto, on the date of such Prospectus or amendment or supplement, complied or will comply in all material respects with the Securities Act. The Registration Statement and any post-effective amendment thereto, at the time it became or becomes effective, did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus, as amended or supplemented, as of its date, did not and, as of each Point of Sale and each Settlement Date, will not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The representations and warranties set forth in the two immediately preceding sentences do not apply to statements in or omissions from the Registration Statement or any post-effective amendment thereto, or the Prospectus, or any amendments or supplements thereto, made in reliance upon and in conformity with information relating to the Sales Agent furnished to the Company in writing by the Sales Agent expressly for use therein. "**Point of Sale**" means, for a Placement, the time at which an acquiror of Placement Shares entered into a contract, binding upon such acquiror, to acquire such Placement Shares.

( c ) Offering Materials Furnished to the Sales Agent. Copies of the Registration Statement, the Prospectus, and all amendments or supplements thereto and all documents incorporated by reference therein that were filed with the Commission on or prior to the date of this Agreement, have been delivered, or are publicly available through EDGAR, to the Sales Agent. Each Prospectus delivered to the Sales Agent for use in connection with the sale of the Placement Shares pursuant to this Agreement will be identical to the version of such Prospectus filed with the Commission via EDGAR, except to the extent permitted by Regulation S-T.

( d ) Distribution of Offering Material By the Company. The Company has not distributed and will not distribute, prior to the completion of the Sales Agent's distribution of the Placement Shares, any offering material in connection with the offering and sale of the Placement Shares other than the Prospectus or the Registration Statement.

( e ) The Sales Agreement. This Agreement has been duly authorized, executed and delivered by the Company, and constitutes a valid, legal, and binding obligation of the Company, enforceable against the Company in accordance with its terms, except as rights to indemnity hereunder may be limited by federal or state securities laws and except as such enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting the rights of creditors generally, and subject to general principles of equity. The Company has full corporate power and authority to enter into this Agreement and to authorize, issue and sell the Placement Shares as contemplated by this Agreement. This Agreement conforms in all material respects to the descriptions thereof in the Registration Statement and the Prospectus.

( f ) Authorization of the Placement Shares. The Placement Shares, when issued and paid for as contemplated herein, will be validly issued, fully paid and nonassessable, will be issued in compliance with all applicable securities laws, and will be free of preemptive, registration or similar rights, and will conform to the description of the Common Stock contained in the Registration Statement and the Prospectus.

( g ) No Applicable Registration or Other Similar Rights. There are no persons with registration or other similar rights to have any equity or debt securities registered for sale under the Registration Statement or included in the offering contemplated by this Agreement, except for such rights as have been duly waived. No person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Placement Shares hereunder, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Placement Shares as contemplated hereby or otherwise.

( h ) No Material Adverse Change. Except as otherwise disclosed in the Prospectus, subsequent to the respective dates as of which information is given in the Prospectus: (i) there has been no material adverse change in the business, properties, prospects, operations, condition (financial or otherwise) or results of operations of the Company (any such change is called a "**Material Adverse Change**"), which, individually or in the aggregate, has had or would reasonably be expected to result in a Material Adverse Change; (ii) the Company has not incurred any material liability or obligation, indirect, direct or contingent, not in the ordinary course of business nor entered into any material transaction or agreement not in the ordinary course of business; (iii) there has been no dividend or distribution of any kind declared, paid or made by the Company; (iv) no officer or director of the Company has resigned from any position with the Company; and (v) there has not been any Material Adverse Change in the Company's long-term debt.

( i ) Independent Accountants. To the knowledge of the Company, EisnerAmper LLP, whose report is filed with the Commission and included or incorporated by reference in the Registration Statement and the Prospectus, is an independent registered public accounting firm as required by the Securities Act and the Public Company Accounting Oversight Board.

(j) Financial Statements. Preparation of the Financial Statements. The financial statements filed with the Commission as a part of the Registration Statement and included in the Prospectus, together with the related notes and schedules, present fairly, in all material respects, the consolidated financial position of the Company and its subsidiaries as of and at the dates indicated and the results of their operations and cash flows for the periods specified. Such financial statements and supporting schedules have been prepared in conformity with U.S. generally accepted accounting principles (“GAAP”) applied on a consistent basis throughout the periods involved, except as may be expressly stated in the related notes thereto. No other financial statements or supporting schedules are required to be included in or incorporated in the Registration Statement.

(k) Forward-Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) contained in the Registration Statement or the Prospectus has been made or reaffirmed by the Company without a reasonable basis or has been disclosed by the Company other than in good faith.

(l) Statistical and Marketing-Related Data. The statistical and market-related data included in each of the Registration Statement and the Prospectus are based on or derived from sources that the Company reasonably and in good faith believes are reliable and accurate or represent the Company’s good faith estimates that are made on the basis of data derived from such sources.

(m) XBRL. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission’s rules and guidelines applicable thereto.

(n) Incorporation and Good Standing of the Company. The Company is a corporation duly incorporated and validly existing under the laws of the State of Nevada. The Company has requisite corporate power to carry on its business as described in the Prospectus. The Company is duly qualified to transact business and is in good standing in all jurisdictions in which the conduct of its business requires such qualification; except where the failure to be so qualified or to be in good standing would not result in a Material Adverse Change. The Company has no subsidiaries and does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Company’s Annual Report on Form 10-K for the most recently ended fiscal year and other than (i) those subsidiaries not required to be listed on Exhibit 21.1 by Item 601 of Regulation S-K under the Exchange Act and (ii) those subsidiaries formed since the last day of the most recently ended fiscal year.

(o) Capital Stock Matters. All issued and outstanding securities of the Company issued prior to the transactions contemplated by this Agreement have been duly authorized and validly issued and are fully paid and non-assessable; the holders thereof have no rights of rescission with respect thereto, and are not subject to personal liability by reason of being such holders; and none of such securities were issued in violation of the preemptive rights of any holders of any security of the Company or similar contractual rights granted by the Company. The authorized shares of Common Stock conform in all material respects to all statements relating thereto contained in the Registration Statement and the Prospectus. The offers and sales of the outstanding shares of Common Stock were at all relevant times either registered under the Securities Act and the applicable state securities or “blue sky” laws or, based in part on the representations and warranties of the purchasers of such shares, exempt from such registration requirements. The description of the Company’s stock option, stock bonus and other stock plans or arrangements, and the options or other rights granted thereunder, as described in the Registration Statement and the Prospectus, accurately and fairly present, in all material respects, the information required to be shown with respect to such plans, arrangements, options and rights.

(p) Non-Contravention of Existing Instruments; No Further Authorizations or Approvals Required. The Company's execution, delivery and performance of this Agreement and consummation of the transactions contemplated hereby or by the Registration Statement and the Prospectus (including the issuance and sale of the Placement Shares and the use of the proceeds from the sale of the Placement Shares as described in the Prospectus under the caption "Use of Proceeds") will not (A) result in a material violation of any existing applicable law, rule, regulation, judgment, order or decree of any Governmental Entity as of the date hereof (including, without limitation, those promulgated by the Food and Drug Administration of the U.S. Department of Health and Human Services (the "**FDA**") or by any foreign, federal, state or local regulatory authority performing functions similar to those performed by the FDA), (B) conflict with, result in any violation or breach of, or constitute a default (or an event that with notice or lapse of time or both would become a default) under, or give to others any right of termination, amendment, acceleration or cancellation (with or without notice, lapse of time or both) (a "**Default Acceleration Event**") of, any agreement, lease, credit facility, debt, note, bond, mortgage, indenture or other instrument ("**Contract**") or obligation or other understanding to which the Company is a party or by which any property or asset of the Company is bound or affected, except to the extent that such conflict, default, or Default Acceleration Event is not reasonably likely to result in a Material Adverse Change, or (C) result in a breach or violation of any of the terms and provisions of, or constitute a default under, the Company's articles of incorporation (as the same may be amended or restated from time to time) or bylaws (as the same may be amended or restated from time to time). The Company is not in violation, breach or default under its articles of incorporation (as the same may be amended or restated from time to time) or bylaws (as the same may be amended or restated from time to time). Neither the Company nor, to its knowledge, any other party is in violation, breach or default of any Contract that has resulted in or could reasonably be expected to result in a Material Adverse Change. Each approval, consent, order, authorization, designation, declaration or filing by or with any regulatory, administrative or other governmental body necessary in connection with the execution and delivery by the Company of this Agreement and the performance of the Company of the transactions herein contemplated has been obtained or made and is in full force and effect, except (i) with respect to any Applicable Time at which the Sales Agent would not be able to rely on Rule 5110(b)(7)(C)(i) of the Financial Industry Regulatory Authority, Inc. ("**FINRA**"), such additional steps as may be required by FINRA, (ii) filings with the Commission required under the Securities Act or the Exchange Act, or filings with the Exchange pursuant to the rules and regulations of the Exchange, in each case that are contemplated by this Agreement to be made after the date of this Agreement, and (iii) such additional steps as may be necessary to qualify the Common Stock for sale by the Sales Agent under state securities or Blue Sky laws.

(q) No Material Actions or Proceedings. There is no action, suit, proceeding, inquiry, arbitration, investigation, litigation or governmental proceeding pending or, to the Company's knowledge, threatened against, or involving the Company or, to the Company's knowledge, any executive officer or director, including any proceeding before the FDA or comparable federal, state, local or foreign governmental bodies (it being understood that the interaction between the Company and the FDA and such comparable governmental bodies relating to the clinical development and product approval process shall not be deemed proceedings for purposes of this representation), which has not been disclosed in the Registration Statement and the Prospectus which is required to be disclosed, except as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Change.

(r) Labor Disputes. No labor dispute with the employees of the Company exists or, to the knowledge of the Company, is imminent. The Company is not aware that any key employee or significant group of employees of the Company plans to terminate employment with the Company.

(s) Compliance with Certain Applicable Laws. The Company: (A) is and at all times has been in compliance with all statutes, rules, or regulations applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product manufactured or distributed by the Company ("Applicable Laws"), except as could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Change; (B) has not received any warning letter, untitled letter or other correspondence or notice from any governmental authority alleging or asserting noncompliance with any Applicable Laws or any licenses, certificates, approvals, clearances, authorizations, permits and supplements or amendments thereto required by any such Applicable Laws ("Authorizations"); (C) possesses all material Authorizations and such Authorizations are valid and in full force and effect and are not in material violation of any term of any such Authorizations; (D) has not received notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any governmental authority or third party alleging that any product operation or activity is in violation of any Applicable Laws or Authorizations and has no knowledge that any such governmental authority or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding; (E) has not received notice that any governmental authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any Authorizations and has no knowledge that any such governmental authority is considering such action; and (F) has filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and correct on the date filed (or were corrected or supplemented by a subsequent submission).

(t) Tax Law Compliance. The Company has filed all returns (as hereinafter defined) required to be filed with taxing authorities prior to the date hereof or has duly obtained extensions of time for the filing thereof. The Company has paid all taxes (as hereinafter defined) shown as due on such returns that were filed and has paid all taxes imposed on or assessed against the Company. The provisions for taxes payable, if any, shown on the financial statements filed with or as part of or incorporated by reference in the Registration Statement are sufficient for all accrued and unpaid taxes, whether or not disputed, and for all periods to and including the dates of such consolidated financial statements. Other than as disclosed in the Registration Statement and the Prospectus, (i) no issues have been raised (and are currently pending) by any taxing authority in connection with any of the returns or taxes asserted as due from the Company, and (ii) no waivers of statutes of limitation with respect to the returns or collection of taxes have been given by or requested from the Company. There are no tax liens against the assets, properties or business of the Company. The term "taxes" means all federal, state, local, foreign and other net income, gross income, gross receipts, sales, use, ad valorem, transfer, franchise, profits, license, lease, service, service use, withholding, payroll, employment, excise, severance, stamp, occupation, premium, property, windfall profits, customs, duties or other taxes, fees, assessments or charges of any kind whatever, together with any interest and any penalties, additions to tax or additional amounts with respect thereto. The term "returns" means all returns, declarations, reports, statements and other documents required to be filed in respect to taxes.

(u) Company Not an “Investment Company”. The Company is not, and will not be, either after receipt of payment for the Placement Shares or after the application of the proceeds therefrom as described under “Use of Proceeds” in the Registration Statement or the Prospectus, required to register as an “investment company” under the Investment Company Act of 1940, as amended (the “**Investment Company Act**”).

( v ) Insurance. The Company carries or is entitled to the benefits of insurance, with reputable insurers, in such amounts and covering such risks which the Company believes are adequate, and all such insurance is in full force and effect. The Company has no reason to believe that it will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not result in a Material Adverse Change.

(w) No Price Stabilization or Manipulation. The Company has not taken, directly or indirectly (without giving any effect to the activities of the Agent), any action designed to or that might cause or result in stabilization or manipulation of the price of the Common Stock or of any “reference security” (as defined in Rule 100 of Regulation M under the Exchange Act (“**Regulation M**”)) with respect to the Common Stock, whether to facilitate the sale or resale of the Placement Shares or otherwise, and has taken no action which would directly or indirectly violate Regulation M.

( x ) Related Party Transactions. There are no business relationships or related party transactions involving the Company or any other person required to be described in the Registration Statement and the Prospectus that have not been described as required pursuant to the Securities Act.

( y ) Exchange Act Compliance. The documents incorporated or deemed to be incorporated by reference in the Registration Statement, the Prospectus or any amendment or supplement thereto, at the time they were or hereafter are filed with the Commission under the Exchange Act, complied and will comply in all material respects with the requirements of the Exchange Act, and, when read together with the other information in the Prospectus, at each Point of Sale and each Settlement Date, will not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(z) Conformity of Issuer Free Writing Prospectus. Each Issuer Free Writing Prospectus conformed or will conform in all material respects to the requirements of the Securities Act on the date of first use, and the Company has complied or will comply with any filing requirements applicable to such Issuer Free Writing Prospectus pursuant to the Securities Act. Each Issuer Free Writing Prospectus, as of its issue date and at all subsequent times through the completion of the public offer and sale of the Placement Shares, did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any document incorporated by reference therein that has not been superseded or modified. The Company has not made any offer relating to the Placement Shares that would constitute an Issuer Free Writing Prospectus without the prior written consent of the Sales Agent. The Company has retained in accordance with the Securities Act all Issuer Free Writing Prospectuses that were not required to be filed pursuant to the Securities Act.

(aa) Compliance with Environmental Laws. The Company is in compliance with all foreign, federal, state and local rules, laws and regulations relating to the use, treatment, storage and disposal of hazardous or toxic substances or waste and protection of health and safety or the environment which are applicable to its business (“Environmental Laws”), except where the failure to comply would not, singularly or in the aggregate, result in a Material Adverse Change. There has been no storage, generation, transportation, handling, treatment, disposal, discharge, emission, or other release of any kind of toxic or other wastes or other hazardous substances by, due to, or caused by the Company (or, to the Company’s knowledge, any other entity for whose acts or omissions the Company is or may otherwise be liable) upon any of the property now or previously owned or leased by the Company, or upon any other property, in violation of any law, statute, ordinance, rule, regulation, order, judgment, decree or permit or which would, under any law, statute, ordinance, rule (including rule of common law), regulation, order, judgment, decree or permit, give rise to any liability, except for any violation or liability which would not have, singularly or in the aggregate with all such violations and liabilities, a Material Adverse Change; and there has been no disposal, discharge, emission or other release of any kind onto such property or into the environment surrounding such property of any toxic or other wastes or other hazardous substances with respect to which the Company has knowledge, except for any such disposal, discharge, emission, or other release of any kind which would not have, singularly or in the aggregate with all such discharges and other releases, a Material Adverse Change. In the ordinary course of business, the Company conducts periodic reviews of the effect of Environmental Laws on its business and assets, in the course of which it identifies and evaluates associated costs and liabilities (including, without limitation, any capital or operating expenditures required for clean-up, closure of properties or compliance with Environmental Laws or governmental permits issued thereunder, any related constraints on operating activities and any potential liabilities to third parties). On the basis of such reviews, the Company has reasonably concluded that such associated costs and liabilities would not have, singularly or in the aggregate, a Material Adverse Change.

(b b) Intellectual Property. The Company owns or possesses or has valid rights to use all patents, patent applications, trademarks, service marks, trade names, trademark registrations, service mark registrations, copyrights, licenses, inventions, trade secrets and similar rights (“Intellectual Property Rights”) necessary for the conduct of the business of the Company as currently carried on and as described in the Registration Statement and the Prospectus, except as would not be reasonably likely to result in a Material Adverse Change. To the knowledge of the Company, no action or use by the Company necessary for the conduct of its business as currently carried on and as described in the Registration Statement and the Prospectus will involve or give rise to any infringement of, or license or similar fees for, any Intellectual Property Rights of others, except where such action, use, license or fee is not reasonably likely to result in a Material Adverse Change. The Company has not received any notice alleging any such infringement, fee or conflict with asserted Intellectual Property Rights of others. Except as would not reasonably be expected to result, individually or in the aggregate, in a Material Adverse Change (A) to the knowledge of the Company, there is no infringement, misappropriation or violation by third parties of any of the Intellectual Property Rights owned by the Company; (B) there is no pending or, to the knowledge of the Company, threatened action, suit, proceeding or claim by others challenging the rights of the Company in or to any such Intellectual Property Rights, and the Company is unaware of any facts which would form a reasonable basis for any such claim, that would, individually or in the aggregate, together with any other claims in this Section 6(bb), reasonably be expected to result in a Material Adverse Change; (C) the Intellectual Property Rights owned by the Company and, to the knowledge of the Company, the Intellectual Property Rights licensed to the Company have not been adjudged by a court of competent jurisdiction invalid or unenforceable, in whole or in part, and there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by others challenging the validity or scope of any such Intellectual Property Rights, and the Company is unaware of any facts which would form a reasonable basis for any such claim that would, individually or in the aggregate, together with any other claims in this Section 6(bb), reasonably be expected to result in a Material Adverse Change; (D) there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by others that the Company infringes, misappropriates or otherwise violates any Intellectual Property Rights or other proprietary rights of others, the Company has not received any written notice of such claim and the Company is unaware of any other facts which would form a reasonable basis for any such claim that would, individually or in the aggregate, together with any other claims in this Section 6(bb), reasonably be expected to result in a Material Adverse Change; and (E) to the Company’s knowledge, no employee of the Company is in or has ever been in violation in any material respect of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee’s employment with the Company, or actions undertaken by the employee while employed with the Company and could reasonably be expected to result, individually or in the aggregate, in a Material Adverse Change. To the Company’s knowledge, all material technical information developed by and belonging to the Company which has not been patented has been kept confidential. The Company is not a party to or bound by any options, licenses or agreements with respect to the Intellectual Property Rights of any other person or entity that are required to be set forth in the Registration Statement and the Prospectus and are not described therein. The Registration Statement and the Prospectus contain in all material respects the same description of the matters set forth in the preceding sentence. None of the technology employed by the Company has been obtained or is being used by the Company in violation of any contractual obligation binding on the Company or, to the Company’s knowledge, any of its officers, directors or employees, or otherwise in violation of the rights of any persons.



(cc) Brokers. The Company is not a party to any contract, agreement or understanding with any person (other than as contemplated by this Agreement) that would give rise to a valid claim against the Company or the Sales Agent for a brokerage commission, finder's fee or like payment in connection with the offering and sale of the Placement Shares by the Sales Agent under this Agreement.

(dd) No Outstanding Loans or Other Indebtedness. There are no outstanding loans, advances (except normal advances for business expenses in the ordinary course of business) or guarantees or indebtedness by the Company to or for the benefit of any of the officers or directors of the Company, or any of their respective family members, except as disclosed in the Registration Statement and the Prospectus.

(ee) No Reliance. The Company has not relied upon the Sales Agent or legal counsel for the Sales Agent for any legal, tax or accounting advice in connection with the offering and sale of the Placement Shares.

(ff) Broker-Dealer Status. Neither the Company nor any of its related entities (i) is required to register as a "broker" or "dealer" in accordance with the provisions of the Exchange Act or (ii) directly or indirectly through one or more intermediaries, controls or is a "person associated with a member" or "associated person of a member" (within the meaning of Article I of the NASD Manual administered by FINRA). To the Company's knowledge, there are no affiliations or associations between any member of FINRA and any of the Company's officers, directors or 5% or greater security holders, except as set forth in the Registration Statement.

(gg) Public Float Calculation. At the time the Registration Statement and any Rule 462(b) Registration Statement was or will be filed with the Commission, at the time the Registration Statement and any Rule 462(b) Registration Statement was or will be declared effective by the Commission, and at the time the Company's most recent Annual Report on Form 10-K was filed with the Commission, the Company met or will meet the then applicable requirements for the use of Form S-3 under the Securities Act. As of the close of trading on the Exchange on April 8, 2020, the aggregate market value of the outstanding voting and non-voting common equity (as defined in Rule 405) of the Company held by persons other than affiliates of the Company (pursuant to Rule 144 of the Securities Act, those that directly, or indirectly through one or more intermediaries, control, or are controlled by, or are under common control with, the Company) (the "Non-Affiliate Shares"), was approximately \$86.8 million (calculated by multiplying (x) the price at which the common equity of the Company was last sold on the Exchange on February 27, 2020 by (y) the number of Non-Affiliate Shares outstanding on April 8, 2020). The Company is not a shell company (as defined in Rule 405) and has not been a shell company for at least 12 calendar months previously and if it has been a shell company at any time previously, has filed current Form 10 information (as defined in Instruction I.B.6. of Form S-3) with the Commission at least 12 calendar months previously reflecting its status as an entity that is not a shell company.

(hh) FINRA Matters. All of the information provided to the Sales Agent or to counsel for the Sales Agent by the Company, its counsel, its officers and directors and, to the Company's knowledge, the holders of any securities (debt or equity) or options to acquire any securities of the Company in connection with the offering of the Placement Shares is true, complete, correct and compliant with FINRA's rules in all material respects and any letters, filings or other supplemental information provided to FINRA pursuant to FINRA Rules or NASD Conduct Rules is true, complete and correct in all material respects. Except as disclosed in the Registration Statement and the Prospectus, there is no (i) officer or director of the Company, (ii) beneficial owner of 5% or more of any class of the Company's securities or (iii) beneficial owner of the Company's unregistered equity securities that were acquired during the 180-day period immediately preceding the date of this Agreement that is an affiliate or associated person of a FINRA member participating in the offer, issuance and sale of the Placement Shares as contemplated by this Agreement and the Registration Statement and the Prospectus (as determined in accordance with the rules and regulations of FINRA).

(ii) Compliance with Orders. The Company is not in violation of any material judgment, decree, or order of any court, arbitrator or other governmental authority.

(jj) Sarbanes-Oxley Act. The Company is in material compliance with any and all applicable requirements of the Sarbanes-Oxley Act of 2002 and the rules and regulations promulgated in connection therewith (the "Sarbanes-Oxley Act") that are effective as of the date hereof, and any and all applicable rules and regulations promulgated by the Commission thereunder that are effective as of the date hereof and as of the date hereof.

( k k ) Disclosure Controls And Procedures. Except as set forth in the Registration Statement and the Prospectus, the Company maintains systems of “internal control over financial reporting” (as defined under Rules 13a-15 and 15d-15 under the Exchange Act) that comply with the requirements of the Exchange Act and have been designed by, or under the supervision of, their respective principal executive and principal financial officers, or persons performing similar functions, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP, including, but not limited to, internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management’s general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management’s general or specific authorization; (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences; and (v) the interactive data in eXtensible Business Reporting Language included or incorporated by references in the Registration Statement and the Prospectus fairly present the information called for in all material respects and are prepared in accordance with the Commission’s rules and guidelines applicable thereto. Since the date of the latest audited financial statements included in the Registration Statement and the Prospectus, there has been no change in the Company’s internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting.

( 11 ) ERISA. The Company and any “employee benefit plan” (as defined under the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, “ERISA”)) established or maintained by the Company or its “ERISA Affiliates” (as defined below) are in compliance in all material respects with ERISA. “ERISA Affiliate” means, with respect to the Company, any member of any group of organizations described in Sections 414(b),(c),(m) or (o) of the Internal Revenue Code of 1986, as amended, and the regulations and published interpretations thereunder (the “Code”) of which the Company is a member. No “reportable event” (as defined under ERISA) has occurred or is reasonably expected to occur with respect to any “employee benefit plan” established or maintained by the Company or any of its ERISA Affiliates. No “employee benefit plan” established or maintained by the Company or any of its ERISA Affiliates, if such “employee benefit plan” were terminated, would have any “amount of unfunded benefit liabilities” (as defined under ERISA). Neither the Company nor any of its ERISA Affiliates has incurred or reasonably expects to incur any material liability under (i) Title IV of ERISA with respect to termination of, or withdrawal from, any “employee benefit plan” or (ii) Sections 412, 4971, 4975 or 4980B of the Code. Each “employee benefit plan” established or maintained by the Company or any of its ERISA Affiliates that is intended to be qualified under Section 401(a) of the Code is so qualified and, to the knowledge of the Company, nothing has occurred, whether by action or failure to act, which would cause the loss of such qualification.

(mm) Contracts and Agreements. The agreements and documents described in the Registration Statement and the Prospectus conform in all material respects to the descriptions thereof contained therein and there are no agreements or other documents required by the Securities Act to be described in the Registration Statement and the Prospectus or to be filed with the Commission as exhibits to the Registration Statement, that have not been so described or filed. Each agreement or other instrument (however characterized or described) to which the Company is a party or by which it is or may be bound or affected and (i) that is referred to in the Registration Statement and the Prospectus, or (ii) is material to the Company's business, has been duly authorized and validly executed by the Company, is in full force and effect in all material respects and is enforceable against the Company and, to the Company's knowledge, the other parties thereto, in accordance with its terms, except (x) as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting creditors' rights generally, (y) as enforceability of any indemnification or contribution provision may be limited under the federal and state securities laws, and (z) that the remedy of specific performance and injunctive and other forms of equitable relief may be subject to the equitable defenses and to the discretion of the court before which any proceeding therefor may be brought. None of such agreements or instruments has been assigned by the Company, and neither the Company nor, to the Company's knowledge, any other party is in default thereunder and, to the Company's knowledge, no event has occurred that, with the lapse of time or the giving of notice, or both, would constitute a default thereunder. To the best of the Company's knowledge, performance by the Company of the material provisions of such agreements or instruments will not result in a violation of any existing applicable law, rule, regulation, judgment, order or decree of any governmental agency or court, domestic or foreign, having jurisdiction over the Company or any of its assets or businesses (each, a "Governmental Entity"), including, without limitation, those relating to environmental laws and regulations.

(nn) Title to Properties. Except as set forth in the Registration Statement and the Prospectus, the Company has good and marketable title in fee simple to, or has valid rights to lease or otherwise use, all items of real or personal property which are material to the business of the Company, in each case free and clear of all liens, encumbrances, security interests, claims and defects that do not, singly or in the aggregate, materially affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company; and all of the leases and subleases material to the business of the Company, and under which the Company holds properties described in the Registration Statement and the Prospectus, are in full force and effect, and the Company has not received any notice of any material claim of any sort that has been asserted by anyone adverse to the rights of the Company under any of the leases or subleases mentioned above, or affecting or questioning the rights of the Company to the continued possession of the leased or subleased premises under any such lease or sublease, which would result in a Material Adverse Change.

(oo) No Unlawful Contributions or Other Payments. No payments or inducements have been made or given, directly or indirectly, to any federal or local official or candidate for, any federal or state office in the United States or foreign offices by the Company or any of its officers or directors, or, to the knowledge of the Company, by any of its employees or agents or any other person in connection with any opportunity, contract, permit, certificate, consent, order, approval, waiver or other authorization relating to the business of the Company, except for such payments or inducements as were lawful under applicable laws, rules and regulations. Neither the Company, nor, to the knowledge of the Company, any director, officer, agent, employee or other person associated with or acting on behalf of the Company, (i) has used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made any direct or indirect unlawful payment to any government official or employee from corporate funds; or (iii) made any bribe, unlawful rebate, payoff, influence payment, kickback or other unlawful payment in connection with the business of the Company.

(pp) Foreign Corrupt Practices Act. None of the Company or, to the knowledge of the Company, any director, officer, agent, employee, affiliate or other person acting on behalf of the Company, is aware of or has taken any action, directly or indirectly, that would result in a violation by such persons of the Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder (collectively, the “**FCPA**”), including, without limitation, making use of the mails or any means or instrumentality of interstate commerce corruptly in furtherance of an offer, payment, promise to pay or authorization of the payment of any money, or other property, gift, promise to give, or authorization of the giving of anything of value to any “foreign official” (as such term is defined in the FCPA) or any foreign political party or official thereof or any candidate for foreign political office, in contravention of the FCPA. The Company has conducted its business in compliance with the FCPA and has instituted and maintains policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith.

(qq) Money Laundering Laws. The operations of the Company are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “**Money Laundering Laws**”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(rr) OFAC. None of the Company or, to the knowledge of the Company, any director, officer, agent, employee, affiliate or person acting on behalf of the Company is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department (“**OFAC**”); and the Company will not directly or indirectly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity, for the purpose of financing the activities of any person currently subject to any U.S. sanctions administered by OFAC.

(ss) Exchange Listing. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and is currently listed on the Exchange under the trading symbol “TNXP”. Except as disclosed in the Registration Statement and the Prospectus, there is no action pending by the Company or, to the Company’s knowledge, the Exchange to delist the Common Stock from the Exchange, nor has the Company received any notification that the Exchange is contemplating terminating such listing. The Company has no intention to delist the Common Stock from the Exchange or to deregister the Common Stock under the Exchange Act, in either case, at any time during the period commencing on the date of this Agreement through and including the 90th calendar day after the termination of this Agreement. The Placement Shares have been approved for listing on the Exchange. The issuance and sale of the Placement Shares under this Agreement does not contravene the rules and regulations of the Exchange.

(tt) Margin Rules. The Company owns no “margin securities” as that term is defined in Regulation U of the Board of Governors of the Federal Reserve System (the “**Federal Reserve Board**”), and none of the proceeds from the issuance, sale and delivery of the Placement Shares as contemplated by this Agreement and as described in the Registration Statement and the Prospectus will be used, directly or indirectly, for the purpose of purchasing or carrying any margin security, for the purpose of reducing or retiring any indebtedness which was originally incurred to purchase or carry any margin security or for any other purpose which might cause any of the shares of Common Stock to be considered a “purpose credit” within the meanings of Regulation T, U or X of the Federal Reserve Board.

(u u) Underwriter Agreements. The Company is not a party to any agreement with an agent or underwriter for any other “at-the-market” or continuous equity transaction.

(v v) Board of Directors. The qualifications of the persons serving as board members of the Company and the overall composition of the Company’s Board of Directors comply with the applicable requirements of the Exchange Act and the Sarbanes-Oxley Act and the listing rules of the Exchange applicable to the Company. At least one member of the Audit Committee of the Board of Directors of the Company qualifies as an “audit committee financial expert,” as such term is defined under Regulation S-K and the listing rules of the Exchange. In addition, at least a majority of the persons serving on the Board of Directors of the Company qualify as “independent,” as defined under the listing rules of the Exchange.

(w w) No Integration. Neither the Company, nor any of its affiliates, nor any person acting on its or their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would cause the offer and sale of the Placement Shares hereunder to be integrated with prior offerings by the Company for purposes of the Securities Act that would require the registration of any such securities under the Securities Act.

(x x) No Material Defaults. The Company has not defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Change. The Company has not filed a report pursuant to Section 13(a) or 15(d) of the Exchange Act since the filing of its last Annual Report on Form 10-K, indicating that it (i) has failed to pay any dividend or sinking fund installment on preferred stock or (ii) has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Change.

(y y) Books and Records. The minute books of the Company have been made available to the Sales Agent and counsel for the Sales Agent, and such books (i) contain a substantially complete summary of all meetings and material actions of the board of directors (including each board committee) and stockholders of the Company (or analogous governing bodies and interest holders, as applicable) since the time of its respective incorporation or organization through the date of the latest meeting and action, and (ii) accurately in all material respects reflect all transactions referred to in such minutes.

(z z) Regulations. The disclosures in the Registration Statement and the Prospectus concerning the effects of federal, state, local and all foreign regulation on the Company’s business in the past and as currently contemplated are correct in all material respects and no other such regulations are required to be disclosed in the Registration Statement and the Prospectus which are not so disclosed.

(aaa) Regulatory Matters: Compliance. All preclinical and other nonclinical studies and clinical trials conducted by or on behalf of the Company that are material to the Company have been adequately described in the Registration Statement and the Prospectus, in all material respects. The clinical trials and nonclinical studies conducted by or on behalf of the Company that are described in the Registration Statement and the Prospectus or the results of such trials and studies which are referred to in the Registration Statement and the Prospectus were and, if still ongoing, are being conducted in material compliance with all laws and regulations applicable thereto in the jurisdictions in which they are being conducted. The descriptions in the Registration Statement and the Prospectus of the results of such trials and studies are accurate and complete in all material respects and fairly present the data derived from such trials and studies, and the Company has no knowledge of any clinical trials the aggregate results of which are inconsistent with or otherwise call into question the results of any clinical trial conducted by or on behalf of the Company that are described in the Registration Statement and the Prospectus or the results of which are referred to in the Registration Statement and the Prospectus. Except as disclosed in the Registration Statement and the Prospectus, the Company has not received any written notices or other communications from the FDA, the European Medicines Agency (“EMA”) or any other governmental agency or authority imposing, requiring, requesting or suggesting a clinical hold, termination, suspension or material modification of any clinical trial that is described in the Registration Statement and the Prospectus or the results of which are referred to in the Registration Statement and the Prospectus. Except as disclosed in the Registration Statement and the Prospectus, the Company has not received any written notices or other communications from the FDA, the EMA or any other governmental agency, and otherwise has no knowledge of, or reason to believe that, (i) any investigational new drug application for a potential product of the Company is or has been rejected or determined to be non-approvable or conditionally approvable; and (ii) any license, approval, permit or authorization to conduct any clinical trial of any potential product of the Company has been, will be or may be suspended, revoked, modified or limited.

(bbb) Confidentiality and Non-Competitions. To the Company’s knowledge, no director, officer, key employee or consultant of the Company is subject to any confidentiality, non-disclosure, non-competition agreement or non-solicitation agreement with any employer or prior employer that could reasonably be expected to materially affect his ability to be and act in his respective capacity of the Company or be expected to result in a Material Adverse Change.

Any certificate signed by an officer of the Company and delivered to the Sales Agent or to counsel for the Sales Agent pursuant to or in connection with this Agreement shall be deemed to be a representation and warranty by the Company to the Sales Agent as to the matters set forth therein.

The Company acknowledges that the Sales Agent and, for purposes of the opinions to be delivered pursuant to Section 7 hereof, counsel to the Company and counsel to the Sales Agent, will rely upon the accuracy and truthfulness of the foregoing representations and hereby consents to such reliance.

7. Covenants of the Company. The Company covenants and agrees with the Sales Agent that:

( a ) Registration Statement Amendments. After the date of this Agreement and during any period in which a Prospectus relating to any Placement Shares is required to be delivered by the Sales Agent under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 153 or Rule 172 under the Securities Act), (i) the Company will notify the Sales Agent promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus or for additional information; (ii) the Company will prepare and file with the Commission, promptly upon the Sales Agent's reasonable request, any amendments or supplements to the Registration Statement or Prospectus that, in the Sales Agent's reasonable opinion, may be necessary or advisable in connection with the distribution of the Placement Shares by the Sales Agent (*provided, however*, that the failure of the Sales Agent to make such request shall not relieve the Company of any obligation or liability hereunder, or affect the Sales Agent's right to rely on the representations and warranties made by the Company in this Agreement, and *provided, further*, that the only remedy the Sales Agent shall have with respect to the failure to make such filing shall be to cease making sales under this Agreement until such amendment or supplement is filed); (iii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus, other than documents incorporated by reference, relating to the Placement Shares or a security convertible into the Placement Shares unless a copy thereof has been submitted to the Sales Agent within a reasonable period of time before the filing and the Sales Agent has not reasonably objected thereto (*provided, however*, that the failure of the Sales Agent to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect the Sales Agent's right to rely on the representations and warranties made by the Company in this Agreement, and *provided, further*, that the only remedy the Sales Agent shall have with respect to the failure by the Company to obtain such consent shall be to cease making sales under this Agreement); (iv) the Company will furnish to the Sales Agent at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; and (v) the Company will cause each amendment or supplement to the Prospectus, other than documents incorporated by reference, to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act (without reliance on Rule 424(b)(8) of the Securities Act) or, in the case of any documents incorporated by reference, to be filed with the Commission as required pursuant to the Exchange Act, within the time period prescribed.

(b) Notice of Commission Stop Orders. The Company will advise the Sales Agent, promptly after it receives notice or obtains knowledge thereof, of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any notice objecting to, or other order preventing or suspending the use of, the Prospectus, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction, or of the initiation of any proceeding for any such purpose or any examination pursuant to Section 8(e) of the Securities Act, or if the Company becomes the subject of a proceeding under Section 8A of the Securities Act in connection with the offering of the Placement Shares; and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. Until such time as any stop order is lifted, the Sales Agent shall cease making offers and sales under this Agreement.



(c) Delivery of Prospectus; Subsequent Changes. During any period in which a Prospectus relating to the Placement Shares is required to be delivered by the Sales Agent under the Securities Act with respect to a pending sale of the Placement Shares (including in circumstances where such requirement may be satisfied pursuant to Rule 153 or Rule 172 under the Securities Act), the Company will comply in all material respects with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If during such period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify the Sales Agent to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; *provided, however*, that the Company may delay any such amendment or supplement if, in the reasonable judgment of the Company, it is in the best interests of the Company to do so.

(d) Listing of Placement Shares. During any period in which the Prospectus relating to the Placement Shares is required to be delivered by the Sales Agent under the Securities Act with respect to a pending sale of the Placement Shares (including in circumstances where such requirement may be satisfied pursuant to Rule 153 or Rule 172 under the Securities Act), the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on the Exchange and to qualify the Placement Shares for sale under the securities laws of such jurisdictions as the Sales Agent reasonably designates and to continue such qualifications in effect so long as required for the distribution of the Placement Shares; *provided, however*, that the Company shall not be required in connection therewith to qualify as a foreign corporation or dealer in securities or file a general consent to service of process in any jurisdiction.

(e) Delivery of Registration Statement and Prospectus. The Company will furnish to the Sales Agent and its counsel (at the expense of the Company) copies of the Registration Statement, the Prospectus (including all documents incorporated by reference therein) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during any period in which a Prospectus relating to the Placement Shares is required to be delivered under the Securities Act (including all documents filed with the Commission during such period that are deemed to be incorporated by reference therein), in each case as soon as reasonably practicable and in such quantities as the Sales Agent may from time to time reasonably request and, at the Sales Agent's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; *provided, however*, that the Company shall not be required to furnish any document (other than the Prospectus) to the Sales Agent to the extent such document is available on EDGAR.

(f) Earnings Statement. The Company will make generally available to its security holders as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement of the Company (which need not be audited) covering a 12-month period that complies with Section 11(a) and Rule 158 of the Securities Act. The terms "earnings statement" and "make generally available to its security holders" shall have the meanings set forth in Rule 158 under the Securities Act.

(g) Expenses. The Company, whether or not the transactions contemplated hereunder are consummated or this Agreement is terminated in accordance with the provisions of Section 11 hereunder, will pay the following expenses all incident to the performance of its obligations hereunder, including, but not limited to, expenses relating to (i) the preparation, printing and filing of the Registration Statement and each amendment and supplement thereto, of each Prospectus and of each amendment and supplement thereto, (ii) the preparation, issuance and delivery of the Placement Shares, including any stock or other transfer taxes and any stamp or other duties payable upon the sale, issuance or delivery of the Placement Shares to the Sales Agent, (iii) the fees and disbursements of the counsel, accountants and other advisors to the Company in connection with the transactions contemplated by this Agreement; (iv) the qualification of the Placement Shares under securities laws in accordance with the provisions of Section 7(d) of this Agreement, including filing fees (*provided, however*, that any fees or disbursements of counsel for the Sales Agent in connection therewith shall be paid by the Sales Agent except as set forth in (ix) below), (v) the printing and delivery to the Sales Agent of copies of the Prospectus and any amendments or supplements thereto, and of this Agreement, (vi) the fees and expenses incurred in connection with the listing or qualification of the Placement Shares for trading on the Exchange, (vii) the fees and expenses of the transfer agent or registrar for the Common Stock; (viii) filing fees and expenses, if any, of the Commission and the FINRA Corporate Financing Department (*provided, however*, that any fees or disbursements of counsel for the Sales Agent in connection therewith shall be paid by the Sales Agent except as set forth in (ix) below) and (ix) the Company shall reimburse the Sales Agent for its reasonable and documented out-of-pocket expenses (including but not limited to the reasonable and documented fees and expenses of counsel to the Sales Agent) in an amount not to exceed \$40,000.

(h) Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

(i) Notice of Other Sales. The Company (I) shall provide the Sales Agent notice as promptly as reasonably possible before it offers to sell, contracts to sell, sells, grants any option to sell or otherwise disposes of any shares of Common Stock (other than Placement Shares offered pursuant to the provisions of this Agreement) or securities convertible into or exchangeable for Common Stock, or warrants or any rights to purchase or acquire Common Stock, during the period beginning on the fifth (5<sup>th</sup>) Trading Day immediately prior to the date on which any Placement Notice is delivered to the Sales Agent hereunder and ending on the fifth (5<sup>th</sup>) Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, the fifth (5<sup>th</sup>) Trading Day immediately following the date of such suspension or termination), and (II) will not directly or indirectly in any other "at-the-market" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any shares of Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for shares of Common Stock, warrants or any rights to purchase or acquire, shares of Common Stock prior to the termination of this Agreement; *provided, however*, that such notice requirements or restrictions, as the case may be, will not be required in connection with the Company's issuance or sale of (i) shares of Common Stock, options to purchase shares of Common Stock, other equity awards or shares of Common Stock issuable upon the exercise of options or other equity awards, pursuant to any employee or director stock option or benefits plan, stock ownership plan or dividend reinvestment plan of the Company whether now in effect or hereafter implemented, (ii) shares of Common Stock issuable upon exchange, conversion or redemption of securities or the exercise of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing (including by email correspondence) to the Sales Agent and (iii) shares of Common Stock or securities convertible into or exchangeable for shares of Common Stock as consideration for mergers, acquisitions, sale or purchase of assets or other business combinations or strategic alliances occurring after the date of this Agreement which are not issued for capital raising purposes. Notwithstanding the foregoing, the Company shall provide the Sales Agent notice at least two (2) days prior to pursuing any private or public offerings of equity and/or other securities (including debt securities) in one or more transactions.

(j) Change of Circumstances. The Company will, at any time during a fiscal quarter in which the Company intends to tender a Placement Notice or sell Placement Shares, advise the Sales Agent promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document provided to the Sales Agent pursuant to this Agreement.

(k) Due Diligence Cooperation. The Company will cooperate with any reasonable due diligence review conducted by the Sales Agent or its agents in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices, as the Sales Agent may reasonably request.

(l) Required Filings Relating to Placement of Placement Shares. The Company shall set forth in each Annual Report on Form 10-K and Quarterly Report on Form 10-Q filed by the Company with the Commission in respect of any quarter in which sales of Placement Shares were made by or through the Sales Agent under this Agreement, with regard to the relevant period, the amount of Placement Shares sold to or through the Sales Agent, the Net Proceeds to the Company and the compensation payable by the Company to the Sales Agent with respect to such sales of Placement Shares. To the extent that the filing of a prospectus supplement with the Commission with respect to any sales of Placement Shares becomes required under Rule 424(b) under the Securities Act, the Company agrees that, on or before such dates as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act, which prospectus supplement will set forth, with regard to the relevant period, the amount of Placement Shares sold to or through the Sales Agent, the Net Proceeds to the Company and the compensation payable by the Company to the Sales Agent with respect to such Placement Shares, and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market. The Company shall afford the Sales Agent and its counsel with a reasonable opportunity to review and comment upon, shall consult with the Sales Agent and its counsel on the form and substance of, and shall give due consideration to all such comments from the Sales Agent or its counsel on, any such filing prior to the issuance, filing or public disclosure thereof; provided, however, that the Company shall not be required to submit for review (A) any portion of any periodic reports filed with the Commission under the Exchange Act other than the specific disclosure relating to any sales of Placement Shares and (B) any disclosure contained in periodic reports filed with the Commission under the Exchange Act if it shall have previously provided the same disclosure for review in connection with a previous filing.

(m) **Representation Dates; Certificate.** On or prior to the date the first Placement Notice is given hereunder and each time the Company (i) files the Prospectus relating to the Placement Shares or amends or supplements the Registration Statement or the Prospectus relating to the Placement Shares (other than (A) a prospectus supplement filed in accordance with Section 7(l) of this Agreement or (B) a supplement or amendment that relates to an offering of securities other than the Placement Shares) by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of document(s) by reference to the Registration Statement or the Prospectus relating to the Placement Shares; (ii) files an annual report on Form 10-K under the Exchange Act (including any Form 10-K/A containing amended financial information or a material amendment to the previously filed Form 10-K); (iii) files a quarterly report on Form 10-Q under the Exchange Act; or (iv) files a current report on Form 8-K containing amended financial information (other than an earnings release, to “furnish” information pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) under the Exchange Act (each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a “**Representation Date**”), the Company shall furnish the Sales Agent within three (3) Trading Days after each Representation Date with a certificate, in the form attached hereto as Exhibit 7(m). The requirement to provide a certificate under this Section 7(m) shall be waived for any Representation Date occurring at a time at which no Placement Notice is pending, which waiver shall continue until the earlier to occur of the date the Company delivers a Placement Notice hereunder (which for such calendar quarter shall be considered a Representation Date) and the next occurring Representation Date; *provided, however*, that such waiver shall not apply for any Representation Date on which the Company files its annual report on Form 10-K. Notwithstanding the foregoing, if the Company subsequently decides to sell Placement Shares following a Representation Date when the Company relied on such waiver and did not provide the Sales Agent with a certificate under this Section 7(m), then before the Company delivers the Placement Notice or the Sales Agent sells any Placement Shares, the Company shall provide the Sales Agent with a certificate, in the form attached hereto as Exhibit 7(m), dated the date of the Placement Notice.

(n) **Legal Opinion.** On or prior to the date the first Placement Notice is given hereunder, the Company shall cause to be furnished to the Sales Agent (i) the written opinion and negative assurance of Lowenstein Sandler LLP, as counsel to the Company, or other counsel reasonably satisfactory to the Sales Agent (“**SEC Counsel**”), (ii) the written opinion and negative assurance of Haley Giuliano LLP, intellectual property counsel to the Company, or other counsel reasonably satisfactory to the Sales Agent (“**Intellectual Property Counsel**”), and (iii) the written opinion of Brownstein Hyatt Farber Schreck, LLP, as local Nevada counsel to the Company (“**Nevada Counsel**”) and, together with SEC Counsel and Intellectual Property Counsel, “**Company Counsel**”), in each case substantially in the forms previously agreed between the Company and the Sales Agent. Thereafter, within three (3) Trading Days after each Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 7(m) for which no waiver is applicable pursuant to Section 7(m), and not more than once per calendar quarter, the Company shall cause to be furnished to the Sales Agent the written opinion and negative assurance of each Company Counsel substantially in the forms previously agreed between the Company and the Sales Agent, modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented; *provided, however*, that if each Company Counsel has previously furnished to the Sales Agent such written opinion and negative assurance of such counsel, in each case substantially in the forms previously agreed between the Company and the Sales Agent, then each Company Counsel may, in respect of any future Representation Date, furnish the Sales Agent with a letter signed by such counsel (each, a “**Reliance Letter**”) in lieu of such opinion and negative assurance of such counsel to the effect that the Sales Agent may rely on the prior opinion and negative assurance of such counsel delivered pursuant to this Section 7(n) to the same extent as if it were dated the date of such Reliance Letter (except that statements in such prior opinion and negative assurance shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented to the date of such Reliance Letter).

(o) Comfort Letter. On or prior to the date the first Placement Notice is given hereunder and within three (3) Trading Days after each subsequent Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 7(m) for which no waiver is applicable pursuant to Section 7(m), other than a Representation Date under Section 7(m)(iii) or Section 7(m)(iv) unless with respect to a Representation Date under Section 7(m)(iv) the Sales Agent reasonably requests delivery thereof, the Company shall cause its independent accountants to furnish the Sales Agent letters (the “**Comfort Letters**”), dated the date that the Comfort Letter is delivered, in form and substance satisfactory to the Sales Agent, (i) confirming that they are an independent registered public accounting firm within the meaning of the Securities Act, the Exchange Act and the rules and regulations of the PCAOB and are in compliance with the applicable requirements relating to the qualification of accountants under Rule 2-01 of Regulation S-X of the Commission, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants’ “comfort letters” to the Sales Agent in connection with registered public offerings (the first such letter, the “**Initial Comfort Letter**”) and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

(p) Market Activities. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or might reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Common Stock or (ii) sell, bid for, or purchase shares of Common Stock in violation of Regulation M, or pay anyone any compensation for soliciting purchases of the Placement Shares other than the Sales Agent.

(q) Insurance. The Company shall maintain insurance in such amounts and covering such risks as is reasonable and customary for the business in which it is engaged.

(r) Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that it is not and, after giving effect to the offering and sale of the Placement Shares and the application of proceeds therefrom as described in the Prospectus, will not be, an “investment company” within the meaning of such term under the Investment Company Act.

(s) Securities Act and Exchange Act. The Company will use its reasonable best efforts to comply with all requirements imposed upon it by the Securities Act and the Exchange Act as from time to time in force, so far as necessary to permit the continuance of sales of, or dealings in, the Placement Shares as contemplated by the provisions hereof and the Prospectus.

(t) No Offer to Sell. Other than the Prospectus and an Issuer Free Writing Prospectus approved in advance by the Company and the Sales Agent in its capacity as principal or agent hereunder, neither the Sales Agent nor the Company (including its agents and representatives, other than the Sales Agent in its capacity as such) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405 under the Securities Act), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

(u) Sarbanes-Oxley Act. The Company will use its reasonable best efforts to comply with all effective applicable provisions of the Sarbanes-Oxley Act.

(v) Transfer Agent. The Company shall maintain, at its sole expense, a registrar and transfer agent for the Common Stock.

8 . Conditions to the Sales Agent's Obligations. The obligations of the Sales Agent hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein, to the due performance by the Company of its obligations hereunder, to the completion by the Sales Agent of a due diligence review satisfactory to the Sales Agent in its reasonable judgment, and to the continuing satisfaction (or waiver by the Sales Agent in its sole discretion) of the following additional conditions:

(a) Registration Statement Effective. The Registration Statement shall be effective and shall be available for the sale of all Placement Shares contemplated to be issued by any Placement Notice.

(b) Securities Act Filings Made. The Company shall have filed with the Commission the ATM Prospectus pursuant to Rule 424(b) under the Securities Act not later than the Commission's close of business on the second Business Day following the date of this Agreement. All other filings with the Commission required by Rule 424(b) or Rule 433 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424(b) (without reliance on Rule 424(b)(8) of the Securities Act) or Rule 433, as applicable.

(c) No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state governmental authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus; (ii) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, related Prospectus or such documents so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(d) No Misstatement or Material Omission. The Sales Agent shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in the Sales Agent's reasonable opinion is material, or omits to state a fact that in the Sales Agent's reasonable opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

(e) Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any material adverse change in the authorized capital stock of the Company or any Material Adverse Change or any development that could reasonably be expected to result in a Material Adverse Change, the effect of which, in the case of any such action by a rating organization described above, in the reasonable judgment of the Sales Agent (without relieving the Company of any obligation or liability it may otherwise have), is so material as to make it impracticable or inadvisable to proceed with the offering of the Placement Shares on the terms and in the manner contemplated by this Agreement and the Prospectus.

(f) Representation Certificate. The Sales Agent shall have received the certificate required to be delivered pursuant to Section 7(m) on or before the date on which delivery of such certificate is required pursuant to Section 7(m).

(g) Legal Opinions. The Sales Agent shall have received the opinion and negative assurance of each Company Counsel required to be delivered pursuant to Section 7(n) on or before the date on which such delivery of such opinion and negative assurance is required pursuant to Section 7(n).

(h) Comfort Letter. The Sales Agent shall have received the Comfort Letter required to be delivered pursuant to Section 7(o) on or before the date on which such delivery of such Comfort Letter is required pursuant to Section 7(o).

(i) Officer's Certificate. On or prior to the date the first Placement Notice is given hereunder, the Sales Agent shall have received a certificate, signed on behalf of the Company by its President and Chief Executive Officer, certifying as to (i) the articles of incorporation of the Company (as the same may be amended or restated from time to time), (ii) the bylaws of the Company (as the same may be amended or restated from time to time), (iii) the resolutions of the Board of Directors of the Company (or a committee thereof) authorizing the execution, delivery and performance of this Agreement and the issuance of the Placement Shares and (iv) the incumbency of the officers duly authorized to execute this Agreement and the other documents contemplated by this Agreement.

(j) No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange and the Common Stock shall not have been delisted from the Exchange.

(k) Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(m), the Company shall have furnished to the Sales Agent such appropriate further opinions, certificates, letters and documents as the Sales Agent may have reasonably requested. All such opinions, certificates, letters and other documents shall have been in compliance with the provisions hereof. The Company will furnish the Sales Agent with such conformed copies of such opinions, certificates, letters and other documents as the Sales Agent shall have reasonably requested.

(l) Approval for Listing. The Placement Shares shall either have been (i) approved for listing on the Exchange, subject only to notice of issuance, or (ii) the Company shall have filed an application for listing of the Placement Shares on the Exchange at, or prior to, the issuance of any Placement Notice.

(m) No Termination Event. There shall not have occurred any event that would permit the Sales Agent to terminate this Agreement pursuant to Section 11(a).

(n) FINRA. The Sales Agent shall have received a letter from the Corporate Financing Department of FINRA confirming that such department has determined to raise no objection with respect to the fairness or reasonableness of the terms and arrangements related to the sale of the Placement Shares pursuant to this Agreement.

#### 9. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless the Sales Agent, the directors, officers, members, partners, employees and agents of the Sales Agent each broker dealer affiliate of the Sales Agent, and each the Sales Agent Affiliate, if any, from and against any and all losses, claims, liabilities, expenses and damages (including, but not limited to, any and all reasonable investigative, legal and other expenses incurred in connection with, and any and all amounts paid in settlement (in accordance with Section 9(c)) of, any action, suit or proceeding between any of the indemnified parties and any indemnifying parties or between any indemnified party and any third party, or otherwise, or any claim asserted), as and when incurred, to which the Sales Agent, or any such person, may become subject under the Securities Act, the Exchange Act or other federal or state statutory law or regulation, at common law or otherwise, insofar as such losses, claims, liabilities, expenses or damages arise out of or are based, directly or indirectly, on (x) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or the Prospectus or any amendment or supplement thereto or in any Issuer Free Writing Prospectus or in any application or other document executed by or on behalf of the Company or based on written information furnished by or on behalf of the Company filed in any jurisdiction in order to qualify the Common Stock under the securities laws thereof or filed with the Commission, (y) the omission or alleged omission to state in any such document a material fact required to be stated in it or necessary to make the statements in it not misleading or (z) any breach by any of the indemnifying parties of any of their respective representations, warranties and agreements contained in this Agreement; *provided, however,* that this indemnity agreement shall not apply to the extent that such loss, claim, liability, expense or damage arises from the sale of the Placement Shares pursuant to this Agreement and is caused directly by an untrue statement or omission made in reliance upon and in strict conformity with written information relating to the Sales Agent and furnished to the Company by the Sales Agent expressly for inclusion in any document as described in clause (x) of this Section 9(a). This indemnity agreement will be in addition to any liability that the Company might otherwise have.



(b) The Sales Agent Indemnification. The Sales Agent agrees to indemnify and hold harmless the Company and its directors and each officer of the Company that signed the Registration Statement, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company (each, a “**Company Affiliate**”) from and against any and all losses, claims, liabilities, expenses and damages (including, but not limited to, any and all reasonable investigative, legal and other expenses incurred in connection with, and any and all amounts paid in settlement (in accordance with Section 9(c)) of, any action, suit or proceeding between any of the indemnified parties and any indemnifying parties or between any indemnified party and any third party, or otherwise, or any claim asserted), as and when incurred, to which any such Company Affiliate, may become subject under the Securities Act, the Exchange Act or other federal or state statutory law or regulation, at common law or otherwise, insofar as such losses, claims, liabilities, expenses or damages arise out of or are based, directly or indirectly, on (x) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or the Prospectus or any amendment or supplement thereto, or (y) the omission or alleged omission to state in any such document a material fact required to be stated in it or necessary to make the statements in it not misleading; *provided, however*, that this indemnity agreement shall apply only to the extent that such loss, claim, liability, expense or damage is caused directly by an untrue statement or omission made in reliance upon and in strict conformity with written information relating to the Sales Agent and furnished to the Company by the Sales Agent expressly for inclusion in any document as described in clause (x) of this Section 9(b).

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 9 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 9, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 9 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 9 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly as they are incurred. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 9 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent includes an unconditional release of each indemnified party from all liability arising or that may arise out of such claim, action or proceeding.

(d) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 9 is applicable in accordance with its terms but for any reason is held to be unavailable from the Company or the Sales Agent, the Company and the Sales Agent will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than the Sales Agent, such as persons who control the Company within the meaning of the Securities Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution) to which the Company and the Sales Agent may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Sales Agent on the other. The relative benefits received by the Company on the one hand and the Sales Agent on the other hand shall be deemed to be in the same proportion as the total Net Proceeds from the sale of the Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by the Sales Agent from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and the Sales Agent, on the other, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Sales Agent, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Sales Agent agree that it would not be just and equitable if contributions pursuant to this Section 9(d) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 9(d) shall be deemed to include, for the purpose of this Section 9(d), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 9(c) hereof. Notwithstanding the foregoing provisions of this Section 9(d), the Sales Agent shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 9(d), any person who controls a party to this Agreement within the meaning of the Securities Act will have the same rights to contribution as that party (and any officers, directors, members, partners, employees or agents of the Sales Agent and each broker dealer affiliate of the Sales Agent will have the same rights to contribution as the Sales Agent), and each officer of the Company who signed the Registration Statement and each director of the Company will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 9(d), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 9(d) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 9(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 9(c) hereof.

10 . Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 9 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of the Sales Agent, any controlling person of the Sales Agent, or the Company (or any of their respective officers, directors, members or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

11. Termination.

(a) The Sales Agent shall have the right by giving notice as hereinafter specified at any time to terminate this Agreement if (i) any Material Adverse Change, or any development that could reasonably be expected to result in a Material Adverse Change has occurred that, in the reasonable judgment of the Sales Agent, may materially impair the ability of the Sales Agent to sell the Placement Shares hereunder, (ii) the Company shall have failed, refused or been unable to perform any agreement on its part to be performed hereunder; *provided, however*, in the case of any failure of the Company to deliver (or cause another person to deliver) any certification, opinion, or letter required under Sections 7(m), 7(n), 7(o) or 7(p), the Sales Agent's right to terminate shall not arise unless such failure to deliver (or cause to be delivered) continues for more than thirty (30) days from the date such delivery was required, (iii) any other condition of the Sales Agent's obligations hereunder is not fulfilled, or (iv) any suspension or limitation of trading in the Placement Shares or in securities generally on the Exchange shall have occurred (including automatic halt in trading pursuant to market-decline triggers, other than those in which solely program trading is temporarily halted), or a major disruption of securities settlements or clearing services in the United States shall have occurred, or minimum prices for trading have been fixed on the Exchange. Any such termination shall be without liability of any party to any other party except that the provisions of Section 7(g) (Expenses), Section 9 (Indemnification and Contribution), Section 10 (Representations and Agreements to Survive Delivery), Section 11(f), Section 16 (Applicable Law; Consent to Jurisdiction) and Section 17 (Waiver of Jury Trial) hereof shall remain in full force and effect notwithstanding such termination. If the Sales Agent elects to terminate this Agreement as provided in this Section 11(a), the Sales Agent shall provide the required notice as specified in Section 12 (Notices).

(b) The Company shall have the right, by giving ten (10) days' notice as hereinafter specified in Section 12, to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 7(g), Section 9, Section 10, Section 11(f), Section 16 and Section 17 hereof shall remain in full force and effect notwithstanding such termination.

(c) The Sales Agent shall have the right, by giving ten (10) days' notice as hereinafter specified in Section 12, to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 7(g), Section 9, Section 10, Section 11(f), Section 16 and Section 17 hereof shall remain in full force and effect notwithstanding such termination.

(d) Unless earlier terminated pursuant to this Section 11, this Agreement shall automatically terminate upon the earlier to occur of (i) issuance and sale of all of the Placement Shares to or through the Sales Agent on the terms and subject to the conditions set forth herein and (ii) the expiration of the Registration Statement on the third (3<sup>rd</sup>) anniversary of the initial effective date of the Registration Statement pursuant to Rule 415(a)(5) under the Securities Act; *provided* that the provisions of Section 7(g), Section 9, Section 10, Section 11(f), Section 16 and Section 17 hereof shall remain in full force and effect notwithstanding such termination.

(e) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 11(a), (b), (c) or (d) above or otherwise by mutual agreement of the parties; *provided, however*, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 7(g), Section 9, Section 10, Section 11(f), Section 16 and Section 17 shall remain in full force and effect.

(f) Any termination of this Agreement shall be effective on the date specified in such notice of termination; *provided, however*, that such termination shall not be effective until the close of business on the date of receipt of such notice by the Sales Agent or the Company, as the case may be. If such termination shall occur prior to the Settlement Date for any sale of Placement Shares, such termination shall not become effective until the close of business on such Settlement Date and such Placement Shares shall settle in accordance with the provisions of this Agreement.

12. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified, and if sent to the Sales Agent, shall be delivered to:

A.G.P./Alliance Global Partners  
590 Madison Avenue  
New York, NY 10022  
Attention: Tom Higgins  
Email: atm@allianceg.com

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

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.  
666 Third Avenue  
New York, New York 10017  
Attention: Ivan K. Blumenthal, Esq.  
Facsimile: (212) 983-3115

and if to the Company, shall be delivered to:

Tonix Pharmaceuticals Holding Corp.  
509 Madison Avenue, Suite 1608  
New York, New York 10022  
Attention: Chief Executive Officer  
Facsimile: (212) 923-5700

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

Lowenstein Sandler LLP  
One Lowenstein Drive  
Roseland, NJ 07068  
Attention: Michael Lerner  
Facsimile: (973) 597-2500

Each party may change such address for notices by sending to the other party to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally or by verifiable facsimile transmission (with an original to follow) on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) on the next Business Day after timely delivery to a nationally-recognized overnight courier and (iii) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, "**Business Day**" shall mean any day on which the Exchange and commercial banks in the City of New York are open for business.

An electronic communication ("**Electronic Notice**") shall be deemed written notice for purposes of this Section 12 if sent to the electronic mail address specified by the receiving party under separate cover. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives confirmation of receipt by the receiving party (other than pursuant to auto-reply). Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("**Nonelectronic Notice**") which shall be sent to the requesting party within ten (10) days of receipt of the written request for Nonelectronic Notice.

13. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and the Sales Agent and their respective successors and permitted assigns and, as to Sections 5(b) and 9, the other indemnified parties specified therein. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any other person any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party; *provided, however*, that the Sales Agent may assign its rights and obligations hereunder to an affiliate of the Sales Agent without obtaining the Company's consent.

14. Adjustments for Share Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any share split, share dividend or similar event effected with respect to the Common Stock.

15. Entire Agreement; Amendment; Severability. This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto) and any other writing entered into by the parties relating to this Agreement constitutes the entire agreement and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and the Sales Agent. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement.

16. Applicable Law; Consent to Jurisdiction. This Agreement shall be governed by, and construed in accordance with, the internal laws of the State of New York, without regard to the principles of conflicts of laws. Each party hereby irrevocably submits to the non-exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan, for the adjudication of any dispute hereunder or in connection with any transaction contemplated hereby, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof (certified or registered mail, return receipt requested) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law.

17. Waiver of Jury Trial. The Company and the Sales Agent each hereby irrevocably waives any right it may have to a trial by jury in respect of any claim based upon or arising out of this Agreement or any transaction contemplated hereby.

18. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

(a) the Sales Agent is acting solely as agent in connection with the sale of the Placement Shares contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and the Sales Agent, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether the Sales Agent has advised or is advising the Company on other matters, and the Sales Agent has no obligation to the Company with respect to the transactions contemplated by this Agreement, except the obligations expressly set forth in this Agreement;

(b) the Company is capable of evaluating and understanding and understands and accepts the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) the Sales Agent has not provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement, and the Company has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

(d) the Company has been advised and is aware that the Sales Agent and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and that the Sales Agent has no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship; and

(e) the Company waives, to the fullest extent permitted by law, any claims it may have against the Sales Agent, for breach of fiduciary duty or alleged breach of fiduciary duty and agrees that the Sales Agent shall have no liability (whether direct or indirect, in contract, tort or otherwise) to the Company in respect of such a fiduciary claim or to any person asserting a fiduciary duty claim on behalf of or in right of the Company, including stockholders, partners, employees or creditors of the Company.

19. Use of Information. The Sales Agent may not provide any information gained in connection with this Agreement and the transactions contemplated by this Agreement, including due diligence, to any third party other than its legal counsel advising it on this Agreement unless expressly approved by the Company in writing.

20. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by facsimile transmission.

21. Effect of Headings; Knowledge of the Company. The section and Exhibit headings herein are for convenience only and shall not affect the construction hereof. All references in this Agreement to the “knowledge of the Company” or the “Company’s knowledge” or similar qualifiers shall mean the actual knowledge of the directors and officers of the Company, after due inquiry.

22. Definitions. As used in this Agreement, the following term has the meaning set forth below:

(a) “*Applicable Time*” means the date of this Agreement, each Representation Date, each date on which a Placement Notice is given, each Point of Sale, and each Settlement Date.

**[Remainder of Page Intentionally Blank]**



If the foregoing correctly sets forth the understanding between the Company and the Sales Agent, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and the Sales Agent.

Very truly yours,

**TONIX PHARMACEUTICALS HOLDING CORP.**

By: /s/ Seth Lederman

Name: Seth Lederman

Title: President & Chief Executive Officer

**ACCEPTED as of the date first-above written:**

**A.G.P./ALLIANCE GLOBAL PARTNERS**

By: /s/ Tom Higgins

Name: Tom Higgins

Title: Managing Director

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**Form of Placement Notice**

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From: Tonix Pharmaceuticals Holding Corp.

To: A.G.P./Alliance Global Partners  
Attention: [●]

Subject: Placement Notice

Date: [●], 202[●]

Ladies and Gentlemen:

Pursuant to the terms and subject to the conditions contained in the Sales Agreement (the "**Sales Agreement**") between Tonix Pharmaceuticals Holding Corp., a Nevada corporation (the "**Company**"), and A.G.P./Alliance Global Partners (the "**Sales Agent**"), dated April 8, 2020, the Company hereby requests that the Sales Agent sell up to [●] shares of the Company's common stock, par value \$0.001 per share (the "**Placement Shares**"), at a minimum market price of \$[●] per share, during the time period beginning [month, day, time] and ending [month, day, time] [and with no more than [●] Placement Shares sold in any one Trading Day].

[The Company may include such other sale parameters as it deems appropriate.]

Capitalized terms used and not defined herein shall have the respective meanings assigned to them in the Sales Agreement.

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**Notice Parties**

Tonix Pharmaceuticals Holding Corp.

Bradley Saenger (Bradley.Saenger@tonixpharma.com)

Jessica Morris (Jessica.Morris@tonixpharma.com)

With copies to:

Bradley Saenger (Bradley.Saenger@tonixpharma.com)

The Sales Agent

Tom Higgins (thiggins@alliancecg.com)

With copies to:

atm@alliancecg.com

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**Compensation**

The Company shall pay to the Sales Agent in cash, upon each sale of Placement Shares through the Sales Agent pursuant to this Agreement, an amount equal to 3.00% of the aggregate gross proceeds from each sale of Placement Shares.\*

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\* The foregoing rate of compensation shall not apply when the Sales Agent purchases Placement Shares on a principal basis, in which case the Company may sell the Placement Shares to the Sales Agent as principal at a price to be mutually agreed upon by the Company and the Sales Agent at the relevant Point of Sale pursuant to the applicable Placement Notice (it being hereby acknowledged and agreed that the Sales Agent shall be under no obligation to purchase Placement Shares on a principal basis pursuant to the Sales Agreement, except as otherwise agreed by the Sales Agent and the Company in writing and expressly set forth in a Placement Notice).

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**Exhibit 7(m)**

**OFFICER CERTIFICATE**

The undersigned, the duly qualified and appointed \_\_\_\_\_ of Tonix Pharmaceuticals Holding Corp., a Nevada corporation (the "**Company**"), does hereby certify in such capacity and on behalf of the Company, pursuant to Section 7(m) of the Sales Agreement, dated April 8, 2020 (the "**Sales Agreement**"), between the Company and A.G.P./Alliance Global Partners, that:

- (i) the representations and warranties of the Company in Section 6 of the Sales Agreement (A) to the extent such representations and warranties are subject to qualifications and exceptions contained therein relating to materiality or Material Adverse Change, are true and correct on and as of the date hereof with the same force and effect as if expressly made on and as of the date hereof, except for those representations and warranties that speak solely as of a specific date and which were true and correct as of such date, and (B) to the extent such representations and warranties are not subject to any qualifications or exceptions, are true and correct in all material respects as of the date hereof as if made on and as of the date hereof with the same force and effect as if expressly made on and as of the date hereof except for those representations and warranties that speak solely as of a specific date and which were true and correct as of such date; and;
  - (ii) the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied pursuant to the Sales Agreement at or prior to the date hereof;
  - (iii) as of the date hereof, (i) the Registration Statement does not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading, (ii) the Prospectus does not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading and (iii) no event has occurred as a result of which it is necessary to amend or supplement the Registration Statement or the Prospectus in order to make the statements therein not untrue or misleading for clauses (i) and (ii) above, respectively, to be true and correct;
  - (iv) there has been no Material Adverse Change since the date as of which information is given in the Prospectus, as amended or supplemented;
  - (v) the Company will not be in possession of any material non-public information at the time of delivery of any Placement Notice and/or as long as such Placement Notice is effective; and
  - (vi) the aggregate offering price of the Placement Shares that may be issued and sold pursuant to the Sales Agreement and the maximum number or amount of Placement Shares that may be sold pursuant to the Sales Agreement have been duly authorized by the Company's board of directors or a duly authorized committee thereof.
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Terms used herein and not defined herein have the meanings ascribed to them in the Sales Agreement.

Dated: \_\_\_\_\_ By: \_\_\_\_\_

Name:

Title:

\_\_\_\_\_



April 8, 2020

Tonix Pharmaceuticals Holding Corp.  
509 Madison Avenue, Suite 1608  
New York, New York 10022

Ladies and Gentlemen:

We have acted as local Nevada counsel to Tonix Pharmaceuticals Holding Corp., a Nevada corporation (the "Company"), in connection with the filing by the Company of a Registration Statement on Form S-3 (the "Registration Statement") with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Act"), including (i) the base prospectus contained therein relating to the registration for offering and sale from time to time by the Company of an indeterminate number of the following securities of the Company, with an aggregate initial offering price of up to \$150,000,000: (A) shares (the "Common Shares") of the Company's common stock, par value \$0.001 per share (the "Common Stock"), (B) shares (the "Preferred Shares" and together with the Common Shares, the "Shares") of the Company's preferred stock, par value \$0.001 per share (the "Preferred Stock") in one or more series; (C) warrants to purchase shares of Common Stock and/or shares of Preferred Stock (the "Warrants") issued pursuant to one or more warrant agreements (each, a "Warrant Agreement"); and (D) units comprising shares of Common Stock, shares of Preferred Stock and/or Warrants (the "Units" and together with the Shares and the Warrants, the "Securities") issued pursuant to one or more unit agreements (each, a "Unit Agreement"), and (ii) the sales agreement prospectus contained therein relating to the issuance and sale by the Company of shares of Common Stock having an aggregate offering price of up to \$50,000,000 (the "ATM Shares") under a sales agreement dated as of April 8, 2020, (the "Sales Agreement") between the Company and A.G.P./Alliance Global Partners. This opinion letter is being furnished at your request in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Act.

In our capacity as such counsel, we are familiar with the proceedings taken and proposed to be taken by the Company in connection with the registration of the Securities, and the issuance and sale of the ATM Shares as contemplated by the Sales Agreement, each as described in the Registration Statement. For purposes of this opinion letter, and except to the extent set forth in the opinions below, we have assumed that all such proceedings have been timely completed or will be timely completed in the manner presently proposed in the Registration Statement.

For purposes of issuing this opinion letter, we have made such legal and factual examinations and inquiries, including an examination of originals or copies certified or otherwise identified to our satisfaction as being true copies of (i) the Registration Statement, (ii) the Sales Agreement, (iii) the articles of incorporation and bylaws of the Company (collectively, the "Governing Documents") and (iv) such agreements, instruments, resolutions of the board of directors of the Company and other corporate records, and such other documents as we have deemed necessary or appropriate for the purpose of issuing this opinion letter, and we have obtained from officers and other representatives and agents of the Company and from public officials, and have relied upon, such certificates, representations and assurances as we have deemed necessary or appropriate.

100 North City Parkway, Suite 1600  
Las Vegas, NV 89106-4614  
main 702.382.2101

bhfs.com

Brownstein Hyatt Farber Schreck, LLP

Without limiting the generality of the foregoing, in our examination, we have, with your permission, assumed without independent verification:

(A) with respect to the opinions set forth in numbered opinion paragraphs 1 and 2 of this opinion letter, that (i) each agreement, instrument or other document we have reviewed or which is referenced herein has been or will be duly executed and delivered by the parties thereto to the extent due execution and delivery are prerequisites to the effectiveness thereof; (ii) any and all agreements, instruments or other documents relating to the offering, issuance or sale of any Securities, including, without limitation, any and all underwriting agreements, purchase agreements, subscription agreements, placement notices (including each placement notice under the Sales Agreement), Warrant Agreements (including each warrant certificate contemplated thereby) and Unit Agreements (including each unit certificate contemplated thereby) (collectively, the "Securities Documents") have been or will be duly authorized, executed and delivered by the Company and the other parties thereto; (iii) the obligations of each party set forth in the Securities Documents are or will be its valid and binding obligations, enforceable in accordance with their respective terms; (iv) no Securities have been or will be offered, issued or sold in violation or breach of, nor will any such offering, issuance or sale result in a default under, any agreement or instrument that is binding upon the Company or any requirement or restriction imposed by any governmental or regulatory agency, authority or body; (v) the Company has taken or will take all corporate action required in connection with the authorization, offering, issuance and sale of any Securities (including, without limitation, any Shares or other securities of the Company underlying, or issued or sold pursuant to or upon exercise, conversion or exchange of, any Preferred Stock, Warrants or Units, or any other agreement or arrangement), and all Securities have been or will be offered, issued and sold, in compliance with all applicable laws, the Governing Documents and the relevant Securities Documents in effect at all relevant times, and any and all certificates evidencing Shares, Warrants and Units are or will be properly signed, registered and delivered, as necessary, in accordance with all applicable laws, the Governing Documents and the relevant Securities Documents (collectively, "Corporate Proceedings"); (vi) after any issuance of Common Shares, the total number of issued and outstanding shares of Common Stock, together with the total number of shares of Common Stock then reserved for issuance or obligated to be issued by the Company pursuant to any agreement, arrangement, Certificate of Designation (as defined below) or otherwise, will not exceed the total number of shares of Common Stock then authorized under the Company's articles of incorporation; (vii) the voting rights, designations, preferences, limitations, restrictions, privileges and relative rights of each series of Preferred Stock (including the Preferred Shares) have been or will be fixed in a certificate of designation relating to such series, prepared in the form prescribed by applicable law, duly signed by an officer of the Company and properly filed with the Nevada Secretary of State (each, a "Certificate of Designation"), and at no time will the total number of shares of Preferred Stock designated pursuant to all then-effective Certificates of Designation exceed the total number of shares of Preferred Stock then authorized under the Company's articles of incorporation; (viii) after any issuance of Preferred Shares, the total number of issued and outstanding shares of each series thereof, together with the total number of shares of such series then reserved for issuance or obligated to be issued by the Company pursuant to any agreement or arrangement or otherwise, will not exceed the total number of shares of such series then designated under the Certificate of Designation for such series;

(B) with respect to the opinion set forth in numbered opinion paragraph 3 of this opinion letter, that (i) the obligations of each party set forth in the Sales Agreement are its valid and binding obligations, enforceable in accordance with their terms; (ii) no ATM Shares have been or will be offered, issued or sold in violation or breach of, nor will any such offering, issuance or sale result in a default under, any agreement or instrument that is binding upon the Company or any requirement or restriction imposed by any governmental or regulatory agency, authority or body; and (iii) after any issuance of the ATM Shares, the total number of issued and outstanding shares of Common Stock, together with the total number of shares of Common Stock then reserved for issuance or obligated to be issued by the Company pursuant to any agreement or arrangement or otherwise, will not exceed the total number of shares of Common Stock then authorized under the Company's articles of incorporation; and

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(C) with respect to all opinions set forth in this opinion letter, that (i) the statements of fact and representations and warranties set forth in the documents we have reviewed, including the Sales Agreement, are, and in the Securities Documents at all relevant times will be, true and correct as to factual matters; (ii) each natural person executing a document has or will have sufficient legal capacity to do so; (iii) all documents submitted to us as originals are authentic, the signatures on all documents that we have examined are genuine, and all documents submitted to us as certified, conformed, photostatic, electronic or facsimile copies conform to the original documents; and (iv) all corporate records made available to us by the Company, and all public records we have reviewed, are accurate and complete.

We are qualified to practice law in the State of Nevada. The opinions set forth herein are expressly limited to and based exclusively on the general corporate laws of the State of Nevada, and we do not purport to be experts on, or to express any opinion with respect to the applicability or effect of, the laws of any other jurisdiction. We express no opinion concerning, and we assume no responsibility as to laws or judicial decisions related to, or any orders, consents or other authorizations or approvals as may be required by, any federal laws, rules or regulations, including, without limitation, any federal securities laws, rules or regulations, or any state securities or "blue sky" laws, rules or regulations.

Based upon the foregoing and in reliance thereon, and having regard to legal considerations and other information that we deem relevant, we are of the opinion that:

1. If and when all Corporate Proceedings have been taken and completed in respect of any offering, issuance or sale of Shares, and to the extent such Shares have been issued in accordance with all applicable terms and conditions set forth in the relevant Securities Documents and Certificate(s) of Designation, including payment in full of all consideration required therefor as authorized by such Corporate Proceedings and prescribed by such Securities Documents and Certificate(s) of Designation, such Shares will be duly authorized, validly issued, fully paid and non-assessable.
2. If and when all Corporate Proceedings have been taken and completed in respect of any offering, issuance or sale of Warrants or Units, such Securities will be duly authorized.
3. If, when and to the extent any ATM Shares are issued in accordance with the terms of, and in the manner contemplated by, the Sales Agreement, including payment in full to the Company of the consideration for such ATM Shares as required thereunder, and in accordance with the proceedings described in, and in the manner contemplated by, the Registration Statement, such ATM Shares will be validly issued, fully paid and nonassessable.

The opinions expressed herein are based upon the applicable laws of the State of Nevada and the facts in existence on the date hereof. In delivering this opinion letter to you, we disclaim any obligation to update or supplement the opinions set forth herein or to apprise you of any changes in such laws or facts after such time as the Registration Statement is declared effective. No opinion is offered or implied as to any matter, and no inference may be drawn, beyond the strict scope of the specific issues expressly addressed by the opinions set forth herein.

We consent to your filing this opinion letter as an exhibit to the Registration Statement and to the reference to our firm therein under the heading "Legal Matters". In giving such consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission promulgated thereunder. Subject to all of the qualifications, limitations, restrictions, exceptions and assumptions set forth herein, Lowenstein Sandler LLP may rely on this opinion letter as if it were an addressee hereof on this date for the sole purpose of issuing its opinion letter to the Company relating to the validity of the Securities (other than the Shares), as filed with the Commission as an exhibit to the Registration Statement.

Very truly yours,  
/s/ Brownstein Hyatt Farber Schreck, LLP

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April 8, 2020

Tonix Pharmaceuticals Holding Corp.  
509 Madison Avenue, Suite 1609  
New York, New York 10022

**Re: Shelf Registration Statement of Tonix Pharmaceuticals Holding Corp. on Form S-3**

Ladies and Gentlemen:

We have acted as counsel to Tonix Pharmaceuticals Holding Corp., a Nevada corporation (the “Company”), in connection with its filing of a shelf registration statement on Form S-3 (the “Registration Statement”), including the base prospectus constituting a part thereof (the “Base Prospectus”), to which this opinion is attached, filed with the Securities and Exchange Commission (the “Commission”) under the Securities Act of 1933, as amended (the “Securities Act”). We have been requested by the Company to render this opinion in connection with the filing of the Registration Statement.

The Base Prospectus provides that it will be supplemented in the future by one or more supplements to the Prospectus (each a “Prospectus Supplement”). The Prospectus, as supplemented by various Prospectus Supplements, will provide for the registration by the Company of up to \$150,000,000 aggregate offering price of (i) shares of preferred stock, par value \$0.001 per share, in one or more series or classes (the “Preferred Stock”), (ii) shares of common stock, par value \$0.001 per share (the “Common Stock”), (iii) warrants to purchase Common Stock or Preferred Stock (the “Warrants”), or (iv) units composed of the foregoing (the “Units”). The Preferred Stock, Common Stock, Warrants, and the Units are collectively referred to herein as the “Securities.” The Preferred Stock may be exchangeable for and/or convertible into shares of Common Stock or another series of Preferred Stock. The Units may be exchangeable and/or settled into the Securities comprising the Units.

In rendering our opinion, we have reviewed the Registration Statement and the exhibits thereto. We have also reviewed such corporate documents and records of the Company, such certificates of public officials and officers of the Company and such other matters as we have deemed necessary or appropriate for purposes of this opinion. We are opining herein as to the internal laws of the State of New York, and we express no opinion with respect to the applicability thereto, or the effect thereon, of the laws of any other jurisdiction or as to any matters of municipal law or the laws of any local agencies within any state. Various issues concerning the Nevada General Corporation Law and the internal laws of the State of Nevada are addressed in the opinion of Brownstein Hyatt Farber Schreck, LLP, separately provided to you. We express no opinion with respect to those matters herein, and to the extent elements of those opinions are necessary to the conclusions expressed herein, we have, with your consent, assumed such matters.

Except to the extent we opine as to the binding effect of certain documents as set forth in paragraphs 1 and 2 below, we have assumed that all documents referenced below are the valid and binding obligations of and enforceable against the parties thereto. We have also assumed the authenticity of all documents submitted to us as originals, the genuineness of all signatures, the conformity to authentic original documents of all documents submitted to us as certified, conformed or photostatic copies and the legal capacities of all natural persons.

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Based on the foregoing, and subject to the assumptions, limitations and qualifications set forth herein, we are of the opinion that:

1. When the applicable warrant agreement has been duly authorized by all necessary corporate action of the Company and duly executed and delivered by the Company, and when the specific terms of a particular issuance of Warrants have been duly established in accordance with the terms of the applicable warrant agreement and authorized by all necessary corporate action of the Company, and such Warrants have been duly executed, authenticated, issued and delivered against payment therefor in accordance with the terms of the applicable warrant agreement and in the manner contemplated by the applicable Prospectus and any and all Prospectus Supplement(s) and by such corporate action (assuming the securities issuable upon exercise of such Warrants have been duly authorized and reserved for issuance by all necessary corporate action), such Warrants will be legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.
2. When the applicable unit agreement has been duly authorized by all necessary corporate action of the Company and duly executed and delivered by the Company, and when the specific terms of a particular issuance of Units have been duly established in accordance with the terms of the applicable unit agreement and authorized by all necessary corporate action of the Company, and such Units have been duly executed, authenticated, issued and delivered against payment therefor in accordance with the terms of the applicable unit agreement and in the manner contemplated by the applicable Prospectus and any and all Prospectus Supplement(s) and by such corporate action (assuming the securities issuable upon exercise of such Units have been duly authorized and reserved for issuance by all necessary corporate action), such Units will be legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

The opinions set forth above are subject to the following exceptions, limitations and qualifications: (i) the effect of bankruptcy, insolvency, reorganization, arrangement, moratorium, fraudulent conveyance, fraudulent transfer and other similar laws relating to or affecting the rights of creditors; (ii) the effect of general principles of equity (including, without limitation, concepts of materiality, reasonableness, good faith and fair dealing and the possible unavailability of specific performance, injunctive relief and other equitable remedies), regardless of whether considered in a proceeding at law or in equity, (iii) the effect of public policy considerations that may limit the rights of the parties to obtain further remedies, (iv) we express no opinion with respect to the enforceability of provisions relating to choice of law, choice of venue, jurisdiction or waivers of jury trial, and (v) we express no opinion with respect to the enforceability of any waiver of any usury defense.



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To the extent that the obligations of the Company with respect to the Securities may be dependent on such matters, we assume for purposes of this opinion that: (i) the Registration Statement and any required post-effective amendment thereto and any and all Prospectus Supplement(s) required by applicable laws have all become effective under the Securities Act, (ii) the Warrants and any related warrant agreement and Units and any related unit agreement (collectively, the “Documents”) will be governed by the internal laws of the State of New York; (iii) that each of the Documents will be duly authorized, executed and delivered by the parties thereto; (iv) that each of the Documents will constitute legally valid and binding obligations of the parties thereto other than the Company, enforceable against each of them in accordance with their respective terms, and (v) that the status of each of the Documents as legally valid and binding obligations of the parties will not be affected by any (a) breaches of, or defaults under, agreements or instruments, (b) violations of statutes, rules, regulations or court or governmental orders, or (c) failures to obtain required consents, approvals or authorizations from, or to make required registrations, declarations or filings with, governmental authorities.

Our opinion is rendered as of the date hereof, and we assume no obligation to advise you of changes in law or fact (or the effect thereof on the opinions expressed herein) that hereafter may come to our attention.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act and to the use of our name therein and in the related Prospectus and any Prospectus Supplement under the caption “Legal Matters.” In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the Rules and Regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ Lowenstein Sandler

LOWENSTEIN SANDLER LLP



**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in this Registration Statement of Tonix Pharmaceuticals Holding Corp. (the “Company”) on Form S-3 to be filed on or about April 8, 2020 of our report dated March 24, 2020, on our audits of the consolidated financial statements as of December 31, 2019 and 2018 and for each of the years then ended, which report was included in the Annual Report on Form 10-K filed March 24, 2020. Our report includes explanatory paragraphs about (i) the existence of substantial doubt concerning the Company's ability to continue as a going concern and (ii) the change in method of accounting for leases due to the adoption of Accounting Standards Codification Topic 842, Leases. We also consent to the reference to our firm under the caption “Experts” in this Registration Statement.

/s/ EisnerAmper LLP

EISNERAMPER LLP  
Iselin, New Jersey  
April 8, 2020

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