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

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934

Filed by the Registrant
Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
 Confidential, For Use of the Commission Only (as Permitted by Rule 14a-6(e)(2))
 Definitive Proxy Statement
 Definitive Additional Materials
 Soliciting Material Pursuant to § 240.14a-12

TONIX PHARMACEUTICALS HOLDING CORP.

(Name of Registrant as Specified in its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required
 Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

(1) Title of each class of securities to which transaction applies:

(2) Aggregate number of securities to which transaction applies:

(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

Fee paid previously with preliminary materials:

Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

(1) Amount previously paid:

(2) Form, Schedule or Registration Statement No.:

(3) Filing Party:

(4) Date Filed:

TONIX PHARMACEUTICALS HOLDING CORP.
509 Madison Avenue, Suite 1608
New York, New York 10022
Telephone: (212) 980-9155

NOTICE OF SPECIAL MEETING OF SHAREHOLDERS

A Special Meeting of the shareholders of Tonix Pharmaceuticals Holding Corp. (the "Company" or "Tonix") will be held on January 16, 2020, at 11:00 a.m. local time at the offices of Lowenstein Sandler LLP at 1251 Avenue of the Americas, New York, New York 10020 for the purposes of:

1. To approve an amendment to the Company's Articles of Incorporation, as amended, to increase the Company's authorized shares of common stock from 15,000,000 to 150,000,000;
2. To approve the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan;
3. To approve, for purposes of complying with applicable NASDAQ Listing Rules, the potential issuance and sale of 20% or more of the Company's common stock pursuant to the Company's purchase agreement with Lincoln Park Capital Fund LLC pursuant to which Lincoln Park Capital Fund LLC has agreed to purchase from us, from time to time, up to \$15,000,000 of our common stock; and
4. To act on such other matters as may properly come before the meeting or any adjournment thereof.

Pursuant to the Third Amended and Restated Bylaws of the Company, no business is proper for consideration, or may be acted upon, at the Special Meeting, except as set forth in this Notice of Special Meeting of Shareholders.

Only shareholders of record at the close of business on November 22, 2019, will be entitled to attend and vote at the meeting. A list of all shareholders entitled to vote at the Special Meeting, arranged in alphabetical order and showing the address of and number of shares held by each shareholder, will be available at the principal office of the Company during usual business hours, for examination by any shareholder for any purpose germane to the Special Meeting for 10 days prior to the date thereof. The proxy materials will be furnished to shareholders on or about December 13, 2019.

BY ORDER OF THE BOARD OF DIRECTORS

/s/ Seth Lederman

Seth Lederman
Chief Executive Officer and Chairman of the Board of Directors
December 13, 2019

You are cordially invited to attend the meeting in person. Whether or not you expect to attend the meeting, please complete, date, sign and return the enclosed proxy as instructed in these materials, as promptly as possible in order to ensure your representation at the meeting. A return envelope (which is postage prepaid if mailed in the United States) is enclosed for your convenience. Even if you have voted by proxy, you may still vote in person if you attend the meeting. Please note, however, that if your shares are held of record by a broker, bank or other nominee and you wish to vote at the meeting, you must obtain a proxy issued in your name from that record holder.

TABLE OF CONTENTS

	Page
<u>INFORMATION CONCERNING THE SPECIAL MEETING</u>	1
<u>QUESTIONS AND ANSWERS ABOUT THESE PROXY MATERIALS AND VOTING</u>	2
<u>PROPOSAL NO. 1: APPROVAL OF AMENDMENT TO ARTICLES OF INCORPORATION TO INCREASE OUR AUTHORIZED SHARES OF COMMON STOCK FROM 15,000,000 TO 150,000,000</u>	8
<u>PROPOSAL NO. 2: APPROVAL OF THE TONIX PHARMACEUTICALS HOLDING CORP. 2020 STOCK INCENTIVE PLAN</u>	10
<u>PROPOSAL NO. 3: PROPOSAL TO APPROVE THE ISSUANCE OF SECURITIES IN CONNECTION WITH A PURCHASE AGREEMENT WITH LINCOLN PARK CAPITAL FUND LLC</u>	19
<u>PROPOSAL 4: APPROVAL THE ADJOURNMENT OF THE SPECIAL MEETING TO SOLICIT ADDITIONAL PROXIES</u>	22
<u>EXECUTIVE COMPENSATION</u>	23
<u>SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT</u>	29
<u>PROPOSALS OF SHAREHOLDERS FOR THE 2020 ANNUAL MEETING</u>	30
<u>OTHER BUSINESS</u>	32
<u>APPENDIX - A - CERTIFICATE OF AMENDMENT TO INCREASE AUTHORIZED COMMON STOCK</u>	A-1
<u>APPENDIX - B - 2020 STOCK INCENTIVE PLAN</u>	B-1
<u>APPENDIX - C - PURCHASE AGREEMENT WITH LINCOLN PARK CAPITAL FUND LLC</u>	C-1

TONIX PHARMACEUTICALS HOLDING CORP.
509 Madison Avenue, Suite 1608
New York, New York 10022
Telephone: (212) 980-9155

PROXY STATEMENT
FOR THE SPECIAL MEETING OF SHAREHOLDERS
TO BE HELD ON THURSDAY, JANUARY 16, 2020

INFORMATION CONCERNING THE SPECIAL MEETING

General

The enclosed proxy is solicited by the Board of Directors (the "Board") of Tonix Pharmaceuticals Holding Corp. (the "Company"), for use at the Special Meeting of the Company's shareholders to be held at the offices of Lowenstein Sandler LLP at 1251 Avenue of the Americas, 17th Floor, New York, New York 10020 on January 16, 2020, at 11:00 a.m. local time and at any adjournments thereof. Whether or not you expect to attend the meeting in person, please vote your shares as promptly as possible to ensure that your vote is counted. The proxy materials will be furnished to shareholders on or about December 13, 2019.

Revocability of Proxy and Solicitation

Any shareholder executing a proxy that is solicited hereby has the power to revoke it prior to the voting of the proxy. Revocation may be made by attending the Special Meeting and voting the shares of stock in person, or by delivering to the Secretary of the Company at the principal office of the Company prior to the Special Meeting a written notice of revocation or a later-dated, properly executed proxy. Solicitation of proxies may be made by directors, officers and other employees of the Company by personal interview, telephone, facsimile transmittal or electronic communications.

Record Date

Shareholders of record at the close of business on November 22, 2019 (the "**Record Date**"), will be entitled to receive notice of, attend and vote at the meeting.

Action to be Taken Under Proxy

Unless otherwise directed by the giver of the proxy, the persons named in the form of proxy, namely, Seth Lederman, our Chief Executive Officer, and Bradley Saenger, our Chief Financial Officer, or either one of them who acts, will vote:

- FOR approval of an amendment to the Company's Articles of Incorporation, as amended, to increase the number of shares of the Company's common stock authorized for issuance from 15,000,000 to 150,000,000 (Proposal No. 1 – the "Proposal to Increase Authorized Shares");
- FOR approval of the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan;
- FOR approval, for purposes of complying with applicable NASDAQ Listing Rules, the potential issuance and sale of 20% or more of the Company's common stock pursuant to the Company's purchase agreement with Lincoln Park Capital Fund LLC ("Lincoln Park") pursuant to which Lincoln Park has agreed to purchase from us, from time to time, up to \$15,000,000 of our common stock (the "LPC Transaction") (Proposal No. 3 – the "Nasdaq Limit Proposal in relation to the LPC Transaction"); and

- According to their discretion, on the transaction of such other matters as may properly come before the meeting or any adjournment thereof.

Who is Entitled to Vote; Vote Required; Quorum

As of November 22, 2019, there were 4,021,120 shares of common stock issued and outstanding, which constitutes all of the outstanding capital stock of the Company entitled to vote. Shareholders are entitled to one vote for each share of common stock held by them.

One-third (1/3) of the outstanding shares, or 1,340,374 shares, present in person or represented by proxy, will constitute a quorum at the meeting. For purposes of the quorum and the discussion below regarding the vote necessary to take shareholder action, shareholders of record who are present at the Special Meeting in person or by proxy and who abstain, including broker non-votes (as described below), and brokers holding customers' shares of record who cause abstentions to be recorded at the meeting, are considered shareholders who are present for purposes of determining the presence of a quorum.

Brokers holding shares of record for customers generally are not entitled to vote on "non-routine" matters, unless they receive voting instructions from their customers. As used herein, "uninstructed shares" means shares held by a broker who has not received such instructions from its customers on a proposal. A "broker non-vote" occurs when a nominee holding uninstructed shares for a beneficial owner does not vote on a particular proposal because the nominee does not have discretionary voting power with respect to that non-routine matter. In connection with the treatment of abstentions and broker non-votes, the proposals at this meeting to approve the 2020 Stock Incentive Plan and the Nasdaq Limit Proposal in relation to the LPC Transaction, are considered "non-routine" matters, and brokers are not entitled to vote uninstructed shares with respect to these proposals. Only the Proposal to Increase Authorized Shares is a routine matter that brokers are entitled to vote shares without receiving instructions.

For the proposal to approve the 2020 Stock Incentive Plan and the Nasdaq Limit Proposal in relation to the LPC Transaction, the affirmative vote of a majority of the shares of common stock cast at the meeting in person or by proxy is required for approval. Abstentions and broker non-votes will be counted for purposes of determining whether a quorum is present but will not be counted as votes cast and, therefore, will have no effect on the outcome of these proposals. For approval of the Proposal to Increase Authorized Shares, the affirmative vote of the majority of the voting power of the shares issued and outstanding as of the Record Date is required for approval, and abstentions will have the same effect as a vote against this proposal.

QUESTIONS AND ANSWERS ABOUT THESE PROXY MATERIALS AND VOTING

Why am I receiving these materials?

We have sent you these proxy materials because the Board of **Tonix Pharmaceuticals Holding Corp.** (sometimes referred to as the "Company," "Tonix," "we" or "us") is soliciting your proxy to vote at the Special Meeting of Shareholders. According to our records, you were a shareholder of the Company as of the end of business on November 22, 2019.

You are invited to attend the Special Meeting to vote on the proposals described in this proxy statement. However, you do not need to attend the meeting to vote your shares. Instead, you may simply complete, sign and return the enclosed proxy card.

The Company intends to mail these proxy materials on or about December 13, 2019 to all shareholders of record on the Record Date entitled to vote at the Special Meeting.

What is included in these materials?

These materials include this proxy statement for the Special Meeting and the proxy card.

What is the proxy card?

The proxy card enables you to appoint Seth Lederman, our Chief Executive Officer, and Bradley Saenger, our Chief Financial Officer, as your representative at the Special Meeting. By completing and returning a proxy card, you are authorizing these individuals to vote your shares at the Special Meeting in accordance with your instructions on the proxy card. This way, your shares will be voted whether or not you attend the Special Meeting.

When and where is the Special Meeting being held?

The Special Meeting will be held on Thursday, January 16, 2020 commencing at 11:00 a.m., local time, at the offices of Lowenstein Sandler LLP at 1251 Avenue of the Americas, 17th Floor, New York, New York 10020.

Can I view these proxy materials over the Internet?

Yes. The Notice of Meeting, this Proxy Statement and accompanying proxy card are available at <http://viewproxy.com/TonixPharma/2020SM>.

Who can vote at the Special Meeting?

Only shareholders of record at the close of business on November 22, 2019 will be entitled to vote at the Special Meeting. On this Record Date, there were 4,021,120 shares of common stock outstanding and entitled to vote.

The Special Meeting will begin promptly at 11:00 a.m., local time. Check-in will begin one-half hour prior to the meeting. Please allow ample time for the check-in procedures.

Shareholder of Record: Shares Registered in Your Name

If on November 22, 2019 your shares were registered directly in your name with Tonix's transfer agent, VStock Transfer, LLC, then you are a shareholder of record. As a shareholder of record, you may vote in person at the meeting or vote by proxy. Whether or not you plan to attend the meeting, we urge you to fill out and return the enclosed proxy.

Beneficial Owner: Shares Registered in the Name of a Broker or Bank

If on November 22, 2019, your shares were held in an account at a brokerage firm, bank, dealer, or other similar organization, rather than in your name, then you are the beneficial owner of shares held in "street name" and these proxy materials are being forwarded to you by that organization. The organization holding your account is considered to be the shareholder of record for purposes of voting at the Special Meeting. As a beneficial owner, you have the right to direct your broker or other agent regarding how to vote the shares in your account. You are also invited to attend the Special Meeting. However, since you are not the shareholder of record, you may not vote your shares in person at the meeting unless you request and obtain a valid proxy from your broker or other agent.

What am I voting on?

The following matters are scheduled for a vote:

1. To approve an amendment to the Company's Articles of Incorporation, as amended, to increase the Company's authorized shares of common stock from 15,000,000 to 150,000,000;
2. To approve the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan;
3. To approve, for purposes of complying with applicable NASDAQ Listing Rules, the potential issuance and sale of 20% or more of the Company's common stock pursuant to the Company's purchase agreement with Lincoln Park Capital Fund LLC pursuant to which Lincoln Park Capital Fund LLC has agreed to purchase from us, from time to time, up to \$15,000,000 of our common stock; and

4. To act on such other matters as may properly come before the meeting or any adjournment thereof.

The Board is not currently aware of any other business that will be brought before the Special Meeting.

How do I vote?

You may vote “**For**” or “**Against**” or abstain from voting. The procedures for voting are fairly simple:

Shareholder of Record: Shares Registered in Your Name

If you are a shareholder of record as of the Record Date, you may vote in person at the Special Meeting or vote by proxy using the enclosed proxy card. Whether or not you plan to attend the meeting, we urge you to vote by proxy to ensure your vote is counted. You may still attend the meeting and vote in person even if you have already voted by proxy.

- To vote in person, come to the Special Meeting and we will give you a ballot when you arrive. You should be prepared to present photo identification for admittance. A list of shareholders eligible to vote at the Special Meeting will be available for inspection at the Special Meeting and for a period of ten days prior to the Special Meeting during regular business hours at our principal executive offices, which are located at 509 Madison Avenue, Suite 1608, New York, New York 10022.
- To vote using the proxy card, simply complete, sign and date the enclosed proxy card and return it promptly in the envelope provided. If you return your completed and signed proxy card to us before the Special Meeting, we will vote your shares as you direct.

Beneficial Owner: Shares Registered in the Name of Broker or Bank

If you are a beneficial owner of shares registered in the name of your broker, bank, or other agent, you should have received voting instructions with these proxy materials from that organization rather than from us. Simply complete and mail your voting instructions as directed by your broker or bank to ensure that your vote is counted. Alternatively, you may be able to vote by telephone or over the Internet by following instructions provided by your broker or bank. To vote in person at the Special Meeting, you must obtain a valid proxy from your broker, bank, or other agent. Follow the instructions from your broker or bank included with these proxy materials, or contact your broker or bank to request a proxy form.

How many votes do I have?

On each matter to be voted upon, you have one vote for each share of common stock you own as of the Record Date.

What is a quorum for purposes of conducting the Special Meeting?

The presence, in person or by proxy, of the holders of one-third (1/3rd) of the issued and outstanding common stock, or 1,340,374 shares, entitled to vote at the meeting is necessary to constitute a quorum to transact business. If a quorum is not present or represented at the Special Meeting, the shareholders entitled to vote thereat, present in person or by proxy, may adjourn the Special Meeting from time to time without notice or other announcement until a quorum is present or represented.

What if I return a proxy card but do not make specific choices?

If you return a signed and dated proxy card without marking any voting selections, your shares will be voted **FOR** approval of the Increase to Authorized Shares (Proposal No. 1), **FOR** approval of the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan; **FOR**, approval of the Nasdaq Limit Proposal in relation to the LPC Transaction (Proposal No. 3), and **FOR** approval of any adjournment of the Special Meeting, if necessary or appropriate, to transact such other business as may properly come before the meeting and all adjournments and postponements thereof; and if any other matter is properly presented at the meeting, your proxy holder (one of the individuals named on your proxy card) will vote your shares using his best judgment. **How does the Board recommend that I vote?**

Our Board recommends that you vote your shares **FOR** approval of the Increase to Authorized Shares (Proposal No. 1); **FOR** approval of the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan; **FOR** the Nasdaq Limit Proposal in relation to the LPC Transaction (Proposal No. 3); and **FOR** approval of any adjournment of the Special Meeting, if necessary or appropriate, to transact such other business as may properly come before the meeting and all adjournments and postponements thereof. Unless you provide other instructions on your proxy card, the persons named as proxy holders on the proxy card will vote in accordance with the recommendations of the Board as set forth in this Proxy Statement.

Who is paying for this proxy solicitation?

We will bear the cost of mailing and solicitation of proxies. We have engaged Alliance Advisors, LLC, which we refer to as "Alliance," to assist in the solicitation of proxies for the Special Meeting. We have agreed to pay Alliance a fee of \$8,000, plus disbursements. We will reimburse Alliance for reasonable out-of-pocket expenses and will indemnify Alliance and its affiliates against certain claims, liabilities, loss, damages and expenses. Proxies may be solicited by mail or personally by our directors, officers or employees, none of whom will receive additional compensation for such solicitation. Those holding shares as of record for the benefit of others, or nominee holders, are being asked to distribute proxy soliciting materials to, and request voting instructions from, the beneficial owners of such shares. We will reimburse nominee holders for their reasonable out-of-pocket expenses.

What does it mean if I receive more than one set of proxy materials?

If you receive more than one set of proxy materials, your shares may be registered in more than one name or in different accounts. Please complete, sign and return **each** proxy card to ensure that all of your shares are voted.

I share the same address with another Tonix Pharmaceuticals Holding Corp. shareholder. Why has our household only received one set of proxy materials?

The SEC's rules permit us to deliver a single set of proxy materials to one address shared by two or more of our shareholders. This practice, known as "householding," is intended to reduce the Company's printing and postage costs. We have delivered only one set of proxy materials to shareholders who hold their shares through a bank, broker or other holder of record and share a single address, unless we received contrary instructions from any shareholder at that address. However, any such street name holder residing at the same address who wishes to receive a separate copy of the proxy materials may make such a request by contacting the bank, broker or other holder of record, or Broadridge Financial Solutions, Inc. at (800) 542-1061 or in writing at Broadridge, Householding Department, 51 Mercedes Way, Edgewood, NY 11717. Street name holders residing at the same address who would like to request householding of Company materials may do so by contacting the bank, broker or other holder of record or Broadridge at the phone number or address listed above.

Can I change my vote after submitting my proxy?

Yes. You can revoke your proxy at any time before the final vote at the meeting. If you are the record holder of your shares, you may revoke your proxy in any one of three ways:

- You may submit another properly completed proxy card with a later date;
- You may send a timely written notice that you are revoking your proxy to the Company at 509 Madison Avenue, Suite 1608, New York, New York 10022, Attn: Chief Financial Officer; or
- You may attend the Special Meeting and vote in person. Simply attending the meeting will not, by itself, revoke your proxy.

If your shares are held by your broker or bank as a nominee or agent, you should follow the instructions provided by your broker or bank.

How are votes counted?

Votes will be counted by the inspector of elections appointed for the meeting, who will separately count “**For**,” “**Abstain**” and “**Against**” votes, and broker non-votes. Abstentions will not be counted as votes for any matter.

How many votes are needed to approve each proposal?

For all matters other than approval of the Increase to Authorized Shares (Proposal No. 1), the affirmative vote of a majority of the votes cast at the Special Meeting in person or by proxy is required for approval. For approval of the Increase to Authorized Shares (Proposal No. 1), the approval of the majority of the shares outstanding and entitled to vote as of the Record Date is required for approval.

Is my vote kept confidential?

Proxy instructions, ballots and voting tabulations that identify individual shareholders are handled in a manner that protects your voting privacy. Your vote will not be disclosed either within the Company or to third parties, except:

- as necessary to meet applicable legal requirements;
- to allow for the tabulation and certification of votes; and
- to facilitate a successful proxy solicitation.

Occasionally, shareholders provide written comments on their proxy cards, which may be forwarded to the Company's management and the Board.

How can I find out the results of the voting at the Special Meeting?

Preliminary voting results will be announced at the Special Meeting. Final voting results will be disclosed in a Current Report on Form 8-K filed after the Special Meeting.

Who can help answer my questions?

If you need assistance with voting or have questions regarding the Special Meeting, please contact:

Alliance Advisors, LLC
200 Broadacres Drive, 3rd Floor
Bloomfield, NJ 07003
888-991-1293

PROPOSAL NO. 1: APPROVAL OF AMENDMENT TO ARTICLES OF INCORPORATION TO INCREASE OUR AUTHORIZED SHARES OF COMMON STOCK FROM 15,000,000 TO 150,000,000

Our Board of Directors has approved, subject to shareholder approval, an amendment to our Articles of Incorporation to increase our authorized shares of common stock from 15,000,000 to 150,000,000. The increase in our authorized shares of common stock will become effective upon the filing of the amendment to our Articles of Amendment with the Nevada Secretary of State. If the amendment to increase our authorized shares of common stock is approved by shareholders at the Special Meeting, we intend to file the amendment to our Articles of Incorporation as soon as practicable following the Special Meeting.

The form of Articles of Amendment to be filed with the Nevada Secretary of State is set forth as Appendix A to this proxy statement (subject to any changes required by applicable law and provided that, since Proposal No. 1 will result in changes to the Articles of Incorporation, the Company may file one or more amendments with the Nevada Secretary of State to effect multiple approved proposals).

Outstanding Shares and Purpose of the Proposal

Our Articles of Incorporation currently authorizes us to issue a maximum of 15,000,000 shares of common stock, par value \$0.001 per share, subject to approval of this Proposal No. 1, and 5,000,000 shares of preferred stock, \$0.001 par value per share. Our issued and outstanding securities, as of the Record Date and December 12, 2019, are as follows:

Shares of common stock	As of November 22, 2019	As of December 12, 2019
Outstanding	4,021,120	8,530,254
Issuable upon exercise of warrants outstanding	7,455,244	5,139,408
Issuable upon conversion of Series A Convertible Preferred Stock outstanding	2,193,298	—
Issuable upon exercise of options outstanding	109,036	109,036
Reserved for future grants, awards and issuances under the 2019 Stock Incentive Plan	55,825	55,825
Reserved for future purchases under 2019 Employee Stock Purchase Plan	12,619	12,619
Reserved for issuance under existing equity lines with Lincoln Park Capital Fund, LLC	487,207	487,207
Outstanding on a fully diluted basis (1)	13,847,142	13,847,142
Outstanding on a fully diluted basis (2)	14,334,349	14,334,349

(1) Assuming all shares reserved under our current equity compensation plan are granted and all shares reserved under our current employee stock purchase plan are purchased

(2) Assuming all shares reserved under our current equity compensation plan are granted and all shares reserved under our current employee stock purchase plan are purchased, and assuming Proposal No. 3 is approved and all available shares under our equity lines with Lincoln Park are sold

The approval of the amendment to the articles of incorporation to increase the authorized shares of Common Stock is important for the ongoing business of the Company. Without additional authorized shares of Common Stock, (i) the Company may not be able to raise additional financing which is needed to fund our ongoing clinical and research programs, (ii) the Company may not be able to attract and retain key employees, officers and directors, and (iii) the Company may not be able to make possible strategic acquisitions, although no such acquisitions are currently contemplated.

The increase in the number of authorized shares of Common Stock may be available for our Board to issue in future financings, to provide equity incentive to employees, officers and directors, to make stock-based acquisitions and for other general corporate purposes, and we intend to use the additional shares of Common Stock that will be available to undertake any such issuances. We have no specific plan, commitment, arrangement, understanding or agreement, either oral or written, regarding the issuance of Common Stock subsequent to this proposed increase in the number of authorized shares at this time, and we have not allocated any specific portion of the proposed increase in the authorized number of shares to any particular purpose. The Company is therefore requesting its stockholders approve this proposal to amend its Articles of Incorporation to increase the authorized shares of Common Stock.

Rights of Additional Authorized Shares

Any authorized shares of Common Stock, if and when issued, would be part of our existing class of common stock and would have the same rights and privileges as the shares of common stock currently outstanding. Our stockholders do not have pre-emptive rights with respect to the common stock, nor do they have cumulative voting rights. Accordingly, should the Board issue additional shares of common stock, existing stockholders would not have any preferential rights to purchase any of such shares, and their percentage ownership of our then outstanding Common Stock could be reduced.

Potential Adverse Effects of Increase in Authorized Common Stock

Future issuances of common stock or securities convertible into common stock could have a dilutive effect on our earnings per share, book value per share and the voting power and ownership interest of current stockholders. The additional shares of common stock for which authorization is sought in this proposal would be part of the existing class of common stock and, if and when issued, would have the same rights and privileges as the shares of common stock presently outstanding. We could also use the additional shares of common stock that will become available for issuance to oppose a hostile takeover attempt or to delay or prevent changes in control or management of the Company. For example, it may be possible for the Board of Directors to delay or impede a takeover or transfer of control of the Company by causing such additional authorized shares to be issued to holders who might side with the Board of Directors in opposing a takeover bid that the Board of Directors determines is not in the best interests of the Company or its stockholders. The proposed increase in authorized shares of common stock therefore may have the effect of discouraging unsolicited takeover attempts. By potentially discouraging initiation of any such unsolicited takeover attempts, the proposed increase in authorized shares of common stock may limit the opportunity for the Company's stockholders to dispose of their shares at the higher price generally available in takeover attempts or that may be available under a merger proposal. The proposed increase in authorized shares of common stock may have the effect of permitting the Company's current management, including the current Board of Directors, to retain its position, and place it in a better position to resist changes that stockholders may wish to make if they are dissatisfied with the conduct of the Company's business. The Board is not aware of any attempt, or contemplated attempt, to acquire control of the Company, nor is this proposal being presented with the intent that it be used to prevent or discourage any acquisition attempt. However, nothing would prevent the Board from taking any such actions that it deems to be consistent with its fiduciary duties.

Vote Required and Board Recommendation

Approval of an amendment to our Articles of Incorporation to increase our authorized shares of common stock from 15,000,000 to 150,000,000 requires the affirmative vote of the majority of the voting power of the shares issued and outstanding as of the Record Date, and abstentions will have the effect of a vote against this proposal.

The Board unanimously recommends a vote "FOR" the approval of an amendment to our Articles of Incorporation to increase our authorized shares of common stock from 15,000,000 to 150,000,000

PROPOSAL NO. 2: APPROVAL OF THE TONIX PHARMACEUTICALS HOLDING CORP. 2020 STOCK INCENTIVE PLAN

Overview

On November 21, 2019, the Board adopted the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan (the “2020 Plan”), subject to and effective upon shareholder approval at the Special Meeting. We are asking our shareholders to approve the 2020 Plan in order to permit the Company to use the 2020 Plan to achieve the Company’s performance, recruiting, retention and incentive goals.

The 2020 Plan includes a variety of forms of awards, including stock options, stock appreciation rights, restricted stock, restricted stock units, cash awards and dividend equivalents to allow the Company to adapt its incentive compensation program to meet the needs of the Company in the changing business environment in which the Company operates.

We strongly believe that the approval of the 2020 Plan is essential to our continued success. As a clinical-stage biopharmaceutical company with limited cash focused on funding our development programs, we believe that equity, in particular stock option awards, is an important and significant component of our employees’, directors’ and consultants’ compensation. The Board and management further believe that equity awards motivate high levels of performance, align the interests of our employees, directors and consultants and shareholders by giving directors, employees and consultants the perspective of an owner with an equity stake in the Company, and provide an effective means of recognizing their contributions to the success of the Company.

As of December 12, 2019, 55,825 shares of the Company’s common stock (“Stock”) were available for grant under our only active, outstanding equity compensation plan, our 2019 Stock Incentive Plan (the “2019 Plan”). No shares of Stock are available for grant under the 2018 Stock Incentive Plan, 2017 Stock Incentive Plan, the 2016 Stock Incentive Plan, the 2014 Stock Incentive Plan and the 2012 Amended and Restated Incentive Stock Option Plan (together with the 2019 Plan, the “Prior Plans”). If our stockholders do not approve this proposal, we may be unable to use equity compensation to the extent needed to make our compensation packages competitive and to motivate our employees and we could be required to increase cash compensation to attract, retain and motivate our employees, which may compromise funding of our development programs. The Board and management believe that equity awards are necessary to remain competitive in our industry and are essential to recruiting and retaining the highly qualified employees, directors and consultants who help the Company meet its goals. The Board and management believe that the ability to grant equity awards will be important to the future success of the Company and is in the best interests of the Company’s shareholders.

Our gross average share usage rate, sometimes referred to as burn rate, over the three years ended December 31, 2018 and the period from January 1, 2019 through December 13, 2019 (calculated as equity-based awards granted under our equity compensation plan for the relevant year, divided by weighted average basic common shares outstanding for that year) is approximately 6.4%. We expect that the proposed share reserve under the 2020 Plan will be sufficient for awards for two or more years. Expectations regarding future share usage could be impacted by a number of factors such as: hiring and promotion activity at the executive level; the rate at which shares are returned to the 2020 Plan reserve upon awards’ expiration, forfeiture or cash settlement; the future performance of our stock price; and other factors. While we believe that the assumptions we used are reasonable, future share usage may differ from current expectations.

If approved, the proposed 2020 Plan would reserve for issuance 600,000 shares of Stock. The potential dilution resulting from issuing all of the proposed 600,000 shares under the 2020 Plan, when combined with shares subject to outstanding awards under the Prior Plans as of December 13, 2019, and assuming basic common shares outstanding as of the Record Date, would be 15% on a fully-diluted basis, and 10% assuming all outstanding shares of Series A Preferred Stock are converted to common stock.

If approved, the 2020 Plan will serve as the successor to our 2019 Plan. Assuming shareholders approve the 2020 Plan, the 2020 Plan will be effective as the date of the annual meeting and the Prior Plans will terminate on that date (except with respect to awards previously granted under the 2019 Plan that remain outstanding) and no further awards will be granted under the 2019 Plan. If the 2020 Plan is not approved, we will continue to make grants under the 2019 Plan until all shares available thereunder have been issued or the 2019 Plan expires.

We are seeking stockholder approval of the 2020 Plan in order to satisfy certain legal requirements, including requirements of The NASDAQ Stock Market. In addition, the Board regards stockholder approval of the 2020 Plan as desirable and consistent with good corporate governance practices. On December 12, 2019, the closing sale price per a share of Stock as reported on the NASDAQ was \$1.19.

Best Practices

We have designed the 2020 Plan to include a number of provisions that we believe promote best practices by reinforcing the alignment between equity compensation arrangements for directors, employees and consultants and shareholders' interests. These provisions include, but are not limited to, the following:

2020 Plan Provision	Description of Best Practice
<ul style="list-style-type: none"> ● <i>No Liberal Share Recycling</i> 	<ul style="list-style-type: none"> ● Shares will not be recycled for issuance as awards under the 2020 Plan in the following circumstances: shares delivered as a result of the net settlement of an outstanding SAR or stock option; shares used to pay the exercise price or withholding taxes related to an outstanding award; or shares repurchased on the open market with the proceeds of a stock option exercise price.
<ul style="list-style-type: none"> ● <i>No Repricing without Shareholder Approval</i> 	<ul style="list-style-type: none"> ● Except in case of certain corporate events, the Company cannot reduce the exercise price of stock options and SARs or buyout for cash underwater options and SARs without the approval of its shareholders.
<ul style="list-style-type: none"> ● <i>No "liberal" Change of Control Definition; No Automatic Single Trigger Acceleration</i> 	<ul style="list-style-type: none"> ● The definition of change of control in the 2020 Plan is not "liberal" and, for example, would not occur merely upon shareholder approval of a transaction. A change of control must actually occur in order for the Change of Control provisions in the 2020 Plan to be triggered. In addition, the 2020 Plan does not provide for automatic "single-trigger" acceleration on a change of control transaction.
<ul style="list-style-type: none"> ● <i>Minimum Vesting Requirement Applicable to All Equity Awards</i> 	<ul style="list-style-type: none"> ● All equity awards will generally vest no earlier than one year from the date of grant (except with respect to a maximum of 5% of the shares under the 2020 Plan).
<ul style="list-style-type: none"> ● <i>Restrictions on Dividends and Dividend Equivalents</i> 	<ul style="list-style-type: none"> ● The 2020 Plan prohibits participants from receiving dividends or dividend equivalents before the underlying award vests and does not permit dividends or dividend equivalents to be paid on stock options or SARs.
<ul style="list-style-type: none"> ● <i>Limits on Individual Director Awards per Year</i> 	<ul style="list-style-type: none"> ● \$350,000 in total value, either in cash, shares of Stock or a combination of cash and Stock, provided, however, that in extraordinary circumstances, that limit can be increased to \$500,000.
<ul style="list-style-type: none"> ● <i>Clawback Provision</i> 	<ul style="list-style-type: none"> ● Includes language subjecting awards to recovery pursuant to any law, government regulation, stock exchange listing requirement including the SEC clawback rules or Company policy.

Burn Rate Table

The following table sets forth information relating to stock options and full value awards granted through December 12, 2019, and in 2018, 2017 and 2016:

<u>Fiscal Year</u>	<u>Stock Options Granted</u>	<u>Full Value Awards Granted</u>	<u>Weighted-Average Common Shares Outstanding</u>	<u>Share Usage</u>
2019*	95,517	0	964,592	9.9%
2018	10,206	0	112,968	9.0%
2017	2,600	0	70,108	3.7%
2016	698	113	28,668	2.8%
4-year Average (year to date)				6.4%

*Through December 12, 2019.

Overhang Information

The following table sets forth certain information as of December 12, 2019, unless otherwise noted, with respect to the Company's existing equity compensation plans.

	<u>As of December 12, 2019</u>
Number of shares no longer available for grant under the 2019 Plan if stockholders approve the 2020 Plan	55,825
Proposed number of shares under the 2020 Plan	600,000
Stock options outstanding	109,036
Weighted-average exercise price of outstanding stock options	\$ 199.57
Weighted-average remaining term of outstanding stock options	8.66
Total full value awards outstanding	0
Number of warrants outstanding*	5,139,408
Common stock issuable upon conversion of preferred stock outstanding	0
Basic common shares outstanding	8,530,254

*No outstanding warrants are compensatory.

Summary of the 2020 Plan

The following is a description of the principal terms of the 2020 Plan. The summary is qualified in its entirety by the full text of the 2020 Plan, which is attached as Appendix A to this Proxy Statement.

General. The 2020 Plan would authorize the grant to eligible individuals of (1) stock options (incentive and nonstatutory), (2) restricted stock, (3) stock appreciation rights, or SARs, (4) restricted stock units, (5) other stock-based awards, and (6) cash-based awards.

Purpose. The purpose of the 2020 Plan is to promote the interests of the Company and its stockholders by providing executive officers, employees, non-employee directors, and key advisors of the Company and its defined subsidiaries with appropriate incentives and rewards to encourage them to enter into and remain in their positions with the Company and to acquire a proprietary interest in the long-term success of the Company, as well as to reward the performance of these individuals in fulfilling their personal responsibilities for long-range and annual achievements.

Stock Subject to the 2020 Plan. Subject to adjustments for certain corporate events, the maximum number of shares of Stock that may be issued under the 2020 Plan is 600,000 shares, which amount will be reduced by awards granted under the 2019 Plan after November 22, 2019. Any shares of Stock that are subject to options or SARs shall be counted against this limit as one share for every one share granted, and any shares of Stock that are subject to awards other than options or SARs shall be counted against this limit as 1.34 shares for every one share granted. The share reserve will be increased to the extent that awards granted under the 2020 Plan or the Prior Plans are forfeited, expire, are cancelled, or are settled for cash (except as otherwise provided in the 2020 Plan). In terms of calculating how many shares are reduced or increased based on activity under the Prior Plans after November 22, 2019, the calculation shall be based on one share for every one share that was subject to an option or SAR and 1.34 shares for every one share that was subject to an award other than an option or SAR.

Substitute awards (awards made or shares of Stock issued by the Company in assumption of, or in substitution or exchange for, awards previously granted, or the right or obligation to make future awards, in each case by a company acquired by the Company or any Company subsidiary or with which the Company or any subsidiary combines) will not reduce the shares authorized for grant under the 2020 Plan, nor will shares subject to a substitute award be added to the shares available for issuance or transfer under the 2020 Plan.

No Liberal Share Recycling. Notwithstanding anything to the contrary, any and all stock that is (i) withheld or tendered in payment of an option exercise price; (ii) withheld by the Company or tendered by the grantee to satisfy any tax withholding obligation with respect to any award; (iii) covered by a SAR that it is settled in stock, without regard to the number of shares of stock that are actually issued to the grantee upon exercise; or (iv) reacquired by the Company on the open market or otherwise using cash proceeds from the exercise of options, shall not be added to the maximum number of shares of stock that may be issued under the 2020 Plan.

Limits on Director Awards. The maximum number of shares of stock subject to awards granted during a single fiscal year to any non-employee director, taken together with any cash fees paid to such non-employee director during the fiscal year, shall not exceed \$350,000 in total value (calculating the value of any such awards based on the grant date fair value of such awards for financial reporting purposes); provided, that the Board may make exceptions to this limit for individual non-employee directors in extraordinary circumstances as the Board may determine in its sole discretion, so long as the aggregate limit per non-employee director does not exceed \$500,000 in total value during a fiscal year.

Eligibility. Employees of, and consultants to, our Company or its subsidiaries and members of our Board are eligible to receive equity awards under the Plan. Only our employees, and employees of our subsidiary corporations, if any, are eligible to receive incentive stock options. Employees, directors (including non-employee directors) and consultants of or for our Company and its subsidiaries are eligible to receive nonstatutory stock options, restricted stock, restricted stock units and any other form of award the 2020 Plan authorizes. As of December 12, 2019, 15 employees, approximately 80 consultants and seven non-employee directors of the Company and its subsidiaries were eligible to receive awards under the 2019 Plan and would be eligible to receive awards under the 2020 Plan. During the fiscal year ending December 31, 2018, 14 employees, nine current and former non-executive directors and no consultants received awards under our 2018 Plan. As of December 12, 2019, 12 employees, nine current and former non-executive directors and no consultants received awards under our 2019 Plan.

Purpose. The purpose of the Plan is to promote the interests of the Company and its stockholders by providing executive officers, employees, non-employee directors, and key advisors of the Company and its defined subsidiaries with appropriate incentives and rewards to encourage them to enter into and remain in their positions with the Company and to acquire a proprietary interest in the long-term success of the Company, as well as to reward the performance of these individuals in fulfilling their personal responsibilities for long-range and annual achievements.

Administration. Unless otherwise determined by the Board, the Compensation Committee administers the 2020 Plan. The Compensation Committee is composed solely of “non-employee directors” within the meaning of Rule 16b-3 under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and “independent directors” within the meaning of NASDAQ listing standards. The Compensation Committee has the power, in its discretion, to grant awards under the 2020 Plan, to select the individuals to whom awards are granted, to determine the terms of the grants, to interpret the provisions of the 2020 Plan and to otherwise administer the 2020 Plan. Except as prohibited by applicable law or stock exchange rules, the Compensation Committee may delegate all or any of its responsibilities and powers under the 2020 Plan to one or more of its members, including, without limitation, the power to designate participants and determine the amount, timing and term of awards under the 2020 Plan.

The 2020 Plan provides that members of the Compensation Committee shall be indemnified and held harmless by the Company from any loss, cost, liability or expense resulting from claims, actions, suits, or proceedings arising from actions related to the 2020 Plan.

Term. If approved, the 2020 Plan is effective January 16, 2020 and awards may be granted through January 16, 2030. No awards may be granted under the 2020 Plan subsequent to that date. The Board may suspend or terminate the 2020 Plan without stockholder approval or ratification at any time or from time to time.

Amendments. Subject to the terms of the 2020 Plan, the Compensation Committee as administrator has the sole discretion to interpret the provisions of the 2020 Plan and outstanding awards. Our Board generally may amend or terminate the 2020 Plan at any time and for any reason, except that approval of our shareholders is required for any amendment which:

- Increases the number of shares of Stock subject to the 2020 Plan (other than in the context of certain adjustments provided for under the 2020 Plan);
- Decreases the price at which grants may be granted;
- Reprices or cancels and re-grants existing options or , if applicable, other awards;
- Changes the class of persons eligible to receive ISOs under the 2020 Plan; or
- Any other amendment to the 2020 Plan that would require approval of shareholders under applicable law, regulation or rule or stock exchange listing requirement.

Repricing Prohibition. Other than in connection with certain corporate events, the Compensation Committee shall not, without the approval of the Company's stockholders, (a) lower the option price per share of an option or SAR after it is granted, (b) cancel a stock option or SAR when the exercise price per share exceeds the fair market value of one share in exchange for cash or another award (other than in connection with a change of control), or (c) take any other action with respect to a stock option or SAR that would be treated as a repricing under the rules and regulations of the principal U.S. national securities exchange on which the Company's shares are then listed.

Minimum Vesting Requirement. Notwithstanding any other provision of the 2020 Plan to the contrary and subject to the immediately following proviso, equity-based awards granted under the 2020 Plan shall vest no earlier than the first anniversary of the date the award is granted (excluding, for this purpose, any (i) substitute awards, (ii) shares of stock delivered in lieu of fully vested cash awards and (iii) awards to non-employee directors that vest on the earlier of the one year anniversary of the date of grant or the next annual meeting of stockholders which is at least 50 weeks after the immediately preceding year's annual meeting); provided, that the Compensation Committee may grant equity-based awards without regard to the foregoing minimum vesting requirement with respect to a maximum of five percent (5%) of the available shares authorized for issuance under the 2020 Plan. For the avoidance of doubt, this minimum vesting requirement shall not be construed to limit the Compensation Committee's discretion to provide for accelerated exercisability or vesting of any award, including in cases of retirement, death, disability or a change of control.

Restrictions on Dividends and Dividend Equivalents. If dividends are declared during the period that all or part of an equity award is outstanding and unvested, such dividends (or dividend equivalents) shall either (i) not be paid or credited with respect to such unvested award or (ii) be accumulated but remain subject to vesting requirement(s) to the same extent as the applicable award and shall only be paid at the time or times such vesting requirement(s) are satisfied. No dividends or dividend equivalents may be paid with respect to options or SARs prior to their exercise or settlement, as applicable.

Adjustments upon Changes in Capitalization. In the event of any change in the Company's capital structure, including but not limited to a change in the number of shares of Stock outstanding, on account of (i) any stock dividend, spinoff, stock split, reverse stock split or any similar equity restructuring, or (ii) any combination or exchange of equity securities, merger, consolidation, recapitalization, reorganization, or divestiture or any other similar event affecting the Company's capital structure, to reflect such change in the Company's capital structure, the Committee shall make appropriate equitable adjustments to (a) the maximum number of shares of Stock that may be issued under the 2020 Plan, (b) the number of shares of Stock issuable upon outstanding awards, (c) the maximum number of shares of stock that may be issued under the 2020 Plan in the form of incentive stock options, and (d) the exercise price and any performance conditions applicable to outstanding awards. In the event of any extraordinary dividend, divestiture or other distribution (other than ordinary cash dividends) of assets to stockholders, or any transaction or event described above, to the extent necessary to prevent the enlargement or diminution of the rights of participants, the Compensation Committee shall make appropriate equitable adjustments to the number or kind of shares subject to an outstanding award, the exercise price applicable to an outstanding award, and/or a performance goals. Any adjustments the 2020 Plan shall be consistent with Section 409A and Section 424 of the Code, to the extent applicable, and made in a manner that does not adversely affect the exemption provided pursuant to Rule 16b-3, to the extent applicable.

Change of Control. The Compensation Committee may, at the time an award is made or at any time prior to, coincident with or after the time of a Change of Control (as defined in the 2020 Plan):

- Provide for the adjustment of any performance goals as the Compensation Committee deems necessary or appropriate to reflect the Change of Control;
- provide for the cancellation of any awards then outstanding if the surviving entity or acquiring entity (or the surviving or acquiring entity's parent company) in the Change of Control replaces the awards with new rights of substantially equivalent value, as determined by the Compensation Committee. For an award to be validly assumed by a successor for this purpose, it must (x) provide such participant with rights and entitlements substantially equivalent to or better than the rights, terms and conditions applicable under such award, including, but not limited to, an identical or better exercise or vesting schedules; (y) have substantially equivalent value to such award (determined at the time of the Change of Control); and (z) be based on stock that is traded on an established U.S. securities market or an established securities market outside the United States upon which the participant could readily trade the stock without administrative burdens or complexities;
- provide that upon an involuntary termination of a participant's employment as a result of a Change of Control, any time periods shall accelerate, and any other conditions relating to the vesting, exercise, payment or distribution of an award shall be waived; or
- provide that awards shall be purchased for an amount of cash equal to the amount that could have been obtained for the shares covered by a restricted stock award if it had been vested and or by an option or SAR if it had been exercised at the time of the Change of Control, provided however that awards outstanding as of the date of the Change of Control may be cancelled and terminated without payment if the consideration payable with respect to one share of Stock in connection with the Change of Control is less than the exercise price or grant price applicable to such award, as applicable.

Generally, under the 2020 Plan, a Change of Control occurs upon (i) the consummation of a reorganization, merger or consolidation involving the Company, pursuant to which our stockholders immediately prior to the transaction do not own more than 50% of the total combined voting power after the transaction, (ii) the consummation of the sale, transfer or other disposition of all or substantially all of our assets, (iii) certain changes in the majority of our Board from those in office on the effective date of the 2020 Plan, (iv) the acquisition of more than 50% of the total combined voting power in our outstanding securities by any person, or (v) the Company is dissolved or liquidated.

Types of Awards

Stock Options. Incentive stock options and nonstatutory stock options are granted pursuant to award agreements adopted by our Compensation Committee. Our Compensation Committee determines the exercise price for a stock option, within the terms and conditions of the 2020 Plan; provided, that the exercise price of an option cannot be less than 100% of the fair market value of our Stock on the date of grant. Options granted under the 2020 Plan vest at the rate specified by our Compensation Committee.

The Compensation Committee determines the term of stock options granted under the 2020 Plan, up to a maximum of 10 years, except in the case of certain incentive stock options, as described below. The Compensation Committee will also determine the length of period during which an optionholder may exercise their options if an optionholder's relationship with us, or any of our subsidiaries, ceases for any reason; for incentive stock options, this period is limited by applicable law. In no event, however, may an option be exercised beyond the expiration of its term unless the term is extended in accordance with applicable law.

Acceptable consideration for the purchase of Stock issued upon the exercise of a stock option will be determined by the Compensation Committee.

Incentive or Nonstatutory Stock Options. Incentive stock options may be granted only to our employees, and the employees of our parent or subsidiary corporations, if any. Option Awards are granted pursuant to award agreements adopted by our Compensation Committee. To the extent required by applicable law, the aggregate fair market value, determined at the time of grant, of shares of our Stock with respect to incentive stock options that are exercisable for the first time by an optionholder during any calendar year may not exceed \$100,000. To the extent required by applicable law, no incentive stock option may be granted to any person who, at the time of the grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power or that of any of our affiliates unless (a) the option exercise price is at least 110% of the fair market value of the stock subject to the option on the date of grant and (b) the term of the incentive stock option does not exceed five years from the date of grant. The maximum number of shares of stock that may be granted in the form of incentive stock options under the is 500,000.

Stock Appreciation Rights. A SAR is the right to receive stock, cash, or a combination of the foregoing equal in value to the difference between the grant price of the SAR and the market price of the Company's Stock on the exercise date. SARs may be granted independently or in tandem with a stock option at the time of grant of the related option. An SAR granted in tandem with a stock option shall be exercisable only to the extent the underlying stock option is exercisable. An SAR confers on the grantee a right to receive an amount with respect to each share of Stock subject thereto, upon exercise thereof, equal to the excess of (A) the fair market value of one share of Stock on the date of exercise over (B) the grant price of the SAR (which in the case of an SAR granted in tandem with a stock option shall be equal to the exercise price of the underlying option, and which in the case of any other SAR shall be such price as the Compensation Committee may determine but in no event shall be less than the fair market value of a share of Stock on the date of grant of such SAR).

Restricted Stock and Restricted Stock Units. Restricted stock is Stock that the Company grants subject to transfer restrictions and a risk of forfeiture. A restricted stock unit is a right to receive stock or cash equal to the value of a share of Stock at the end of a specified period that the Company grants subject to transfer restrictions and vesting criteria. The grant of these awards under the 2020 Plan are subject to such terms, conditions and restrictions as the Compensation Committee determines consistent with the terms of the 2020 Plan.

At the time of grant, the Compensation Committee may place restrictions on restricted stock and restricted stock units that shall lapse, in whole or in part, upon the passage of time and/or attainment of performance goals. Except to the extent restricted under the award agreement relating to the restricted stock, a grantee granted restricted stock shall have all of the rights of a stockholder including the right to vote restricted stock and the right to receive dividends.

Unless otherwise provided in an award agreement, upon the vesting of a restricted stock unit, there shall be delivered to the grantee, within 30 days of the date on which such award (or any portion thereof) vests, the number of shares of Stock equal to the number of restricted stock units becoming so vested.

Other Stock-Based Awards. The 2020 Plan also allows the Compensation Committee to grant "Other Stock-Based Awards," which means a right or other interest that may be denominated or payable in, valued in whole or in part by reference to, or otherwise based on, or related to, common stock. Subject to the limitations contained in the 2020 Plan, this includes, without limitation, (i) unrestricted Stock awarded as a bonus or upon the attainment of performance goals or otherwise as permitted under the 2020 Plan and (ii) a right to acquire Stock from the Company containing terms and conditions prescribed by the Compensation Committee. At the time of the grant of Other Stock-Based Awards, the Compensation Committee may place restrictions on the payout or vesting of Other Stock-Based Awards that shall lapse, in whole or in part, upon the passage of time and/or attainment of performance goals. Other Stock-Based Awards may not be granted with the right to receive dividend equivalent payments.

Cash-Based Awards. The Compensation Committee may grant Cash-Based Awards under the 2020 Plan that specify the amount of cash to which the award pertains, the conditions under which the award will be vested and exercisable or payable, and such other conditions as the Compensation Committee may determine that are consistent with the terms of the 2020 Plan. At the time of the grant of Cash-Based Awards, the Compensation Committee may place restrictions on the payout or vesting of Cash-Based Awards that shall lapse, in whole or in part, only upon the attainment of performance goals, similar to those for Other Stock-Based Awards.

Interests of Directors and Officers

Our directors may grant awards under the 2020 Plan to themselves, as well as our officers, in addition to granting awards to our other employees.

New Plan Benefits under the 2020 Plan

Because future awards under the 2020 Plan will be granted in the discretion of the Compensation Committee, the type, number, recipients, and other terms of such awards cannot be determined at this time.

U.S. Federal Income Tax Considerations

The following is a brief description of the material United States federal income tax consequences associated with awards under the 2020 Plan. It is based on existing United States laws and regulations, and there can be no assurance that those laws and regulations will not change in the future. Tax consequences in other countries may vary. This information is not intended as tax advice to anyone, including participants in the 2020 Plan.

Stock Options. Neither incentive stock option grants nor non-qualified stock option grants cause any tax consequences to the participant or Tonix at the time of grant. Upon the exercise of a non-qualified stock option, the excess of the market value of the shares acquired over their exercise price is ordinary income to the participant, and is deductible by Tonix, subject to any applicable limitations under Section 162(m) of the Code. The participant's tax basis for the shares is the market value thereof at the time of exercise. Any gain or loss realized upon a subsequent disposition of the stock will generally constitute capital gain, in connection with which Tonix will not be entitled to a tax deduction.

Upon the exercise of an incentive stock option, the participant will not realize taxable income, but the excess of the fair market value of the stock over the exercise price may give rise to alternative minimum tax. When the stock acquired upon exercise of an incentive stock option is subsequently sold, the participant will recognize income equal to the difference between the sales price and the exercise price of the option. If the sale occurs after the expiration of two years from the grant date and one year from the exercise date, the income will constitute long-term capital gain. If the sale occurs prior to that time, the participant will recognize ordinary income to the extent of the lesser of the gain realized upon the sale or the difference between the fair market value of the acquired stock at the time of exercise and the exercise price; any additional gain will constitute capital gain. Tonix will be entitled to a deduction in an amount equal to the ordinary income recognized by the participant, subject to any applicable limitations under Section 162(m) of the Code, but no deduction in connection with any capital gain recognized by the participant. If the participant exercises an incentive stock option more than three months after his or her termination of employment due to retirement or other separation other than death or disability, or more than twelve months after his or her termination of employment due to death or permanent disability, he or she is deemed to have exercised a non-qualified stock option.

Compensation realized by participants on the exercise of non-qualified stock options or the disposition of shares acquired upon exercise of any incentive stock options may be subject to the \$1,000,000 deductibility limit of Section 162(m) of the Code.

Stock Appreciation Rights. A participant granted a stock appreciation right under the 2020 Plan will not recognize income, and Tonix will not be allowed a tax deduction, at the time the award is granted. When the participant exercises the stock appreciation right, the amount of cash and the fair market value of any shares of Stock or other consideration received will be ordinary income to the participant and Tonix will be allowed a corresponding federal income tax deduction at that time. Compensation realized by the participant on the exercise of the stock appreciation right may be subject to the \$1,000,000 deductibility limit of Section 162(m) of the Code.

Restricted Stock. Restricted stock is not taxable to a participant at the time of grant, but instead is included in ordinary income (at its then fair market value) when the restrictions lapse. A participant may elect, however, to recognize income at the time of grant, in which case the fair market value of the restricted shares at the time of grant is included in ordinary income and there is no further income recognition when the restrictions lapse. If a participant makes such an election and thereafter forfeits the restricted shares, he or she will be entitled to no tax deduction, capital loss or other tax benefit. Tonix is entitled to a tax deduction in an amount equal to the ordinary income recognized by the participant, subject to any applicable limitations under Section 162(m) of the Code.

A participant's tax basis for restricted shares will be equal to the amount of ordinary income recognized by the participant. The participant will recognize capital gain (or loss) on a sale of the restricted stock if the sale price exceeds (or is lower than) such basis. The holding period for restricted shares for purposes of characterizing gain or loss on the sale of any shares as long- or short-term commences at the time the participant recognizes ordinary income pursuant to an award. Tonix is not entitled to a tax deduction corresponding to any capital gain or loss of the participant.

Restricted Stock Units. A participant will not recognize income, and Tonix will not be allowed a tax deduction, at the time a restricted stock unit award is granted. Upon receipt of shares of Stock (or the equivalent value in cash or any combination of cash and Stock) in settlement of a restricted stock unit award, a participant will recognize ordinary income equal to the fair market value of the stock and cash received as of that date (less any amount he or she paid for the stock and cash), and Tonix will be allowed a corresponding federal income tax deduction at that time, subject to any applicable limitations under Section 162(m) of the Code.

Performance Awards. A participant will not recognize income, and Tonix will not be allowed a tax deduction, at the time a performance award is granted (for example, when the performance goals are established). Upon receipt of stock or cash (or a combination thereof) in settlement of a performance award, the participant will recognize ordinary income equal to the fair market value of the stock and cash received, and Tonix will be allowed a corresponding federal income tax deduction at that time, subject to any applicable limitations under Section 162(m) of the Code.

Code Section 409A. If an award is subject to Code Section 409A (which relates to nonqualified deferred compensation plans), and if the requirements of Section 409A are not met, the taxable events as described above could apply earlier than described, and could result in the imposition of additional taxes and penalties. All awards that comply with the terms of the 2020 Plan, however, are intended to be exempt from the application of Code Section 409A or meet the requirements of Section 409A in order to avoid such early taxation and penalties.

Tax Withholding. Tonix has the right to deduct or withhold, or require a participant to remit to Tonix, an amount sufficient to satisfy federal, state and local taxes (including employment taxes) required by law to be withheld with respect to any exercise, lapse of restriction or other taxable event arising as a result of the 2020 Plan. The Compensation Committee may, at the time the award is granted or thereafter, require or permit that any such withholding requirement be satisfied, in whole or in part, by delivery of, or withholding from the award, shares of Stock having a fair market value on the date of withholding equal to the amount required to be withheld for tax purposes.

Required Vote and Board Recommendation

Approval of the 2020 Plan requires the receipt of the affirmative vote of the holders of a majority of the votes cast in person or by proxy at the Annual Meeting. Abstentions and broker non-votes will each be counted as present for purposes of determining the presence of a quorum and will have the effect of a vote against approval of the 2020 Plan.

**The Board unanimously recommends a vote "FOR" the approval
of the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan**

**PROPOSAL NO. 3: PROPOSAL TO APPROVE THE ISSUANCE OF SECURITIES IN CONNECTION WITH A PURCHASE AGREEMENT WITH
LINCOLN PARK CAPITAL FUND LLC**

General

On August 20, 2019, we entered into a purchase agreement, dated as of August 20, 2019 (the "Purchase Agreement"), and a registration rights agreement, dated as of August 20, 2019 (the "Registration Rights Agreement"), with Lincoln Park Capital Fund, LLC ("Lincoln Park"), pursuant to which Lincoln Park has committed to purchase up to \$15.0 million worth of the Company's common stock, \$0.001 par value per share (the "Common Stock"), subject to certain limitations and conditions set forth in the Purchase Agreement which is attached hereto as Appendix B. As consideration for its commitment to purchase shares of our common stock under the Purchase Agreement, we issued 35,529 commitment shares to Lincoln Park as a commitment fee (the "Commitment Shares").

Under the terms and subject to the conditions of the Purchase Agreement, we have the right, but not the obligation, to sell to Lincoln Park, and Lincoln Park is obligated to purchase up to \$15.0 million worth of shares of Common Stock. Such sales of Common Stock, if any, will be subject to certain limitations, and may occur from time to time, at our sole discretion, over the 30-month period commencing on September 12, 2019 (the "Commencement Date"), the date that the registration statement covering the resale of shares of Common Stock was declared effective by the Securities and Exchange Commission (the "SEC").

Thereafter, under the Purchase Agreement, on any business day selected by us, we may direct Lincoln Park to purchase up to 7,500 shares of Common Stock on such business day (each, a "Regular Purchase"), provided, however, that (i) the Regular Purchase may be increased to up to 10,000 shares, provided that the closing sale price of the Common Stock is not below \$5.00 on the purchase date (subject to adjustment for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction as provided in the Purchase Agreement); (ii) the Regular Purchase may be increased to up to 12,500 shares, provided that the closing sale price of the Common Stock is not below \$10.00 on the purchase date (subject to adjustment for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction as provided in the Purchase Agreement); (iii) the Regular Purchase may be increased to up to 15,000 shares, provided that the closing sale price of the Common Stock is not below \$15.00 on the purchase date (subject to adjustment for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction as provided in the Purchase Agreement); and (iv) the Regular Purchase may be increased to up to 17,500 shares, provided that the closing sale price of Common Stock is not below \$20.00 on the purchase date (subject to adjustment for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction as provided in the Purchase Agreement) (such share amount limitation, the "Regular Purchase Share Limit"). In each case, Lincoln Park's maximum commitment in any single Regular Purchase may not exceed \$1,000,000. The purchase price per share for each such Regular Purchase will be based off of prevailing market prices of Common Stock immediately preceding the time of sale without any fixed discount.

In addition, we may direct an additional purchase (a "Tranche Purchase"), provided that the closing sale price of Common Stock is not below \$10.00 on the purchase date (subject to adjustment for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction as provided in the Purchase Agreement) and at least 15 business days have passed since the most recent Tranche Purchase was completed, of up to \$400,000 worth of shares to Lincoln Park. Lincoln Park's maximum commitment for all Tranche Purchases may not exceed \$2,000,000 in the aggregate. The purchase price per share for each Tranche Purchase will be the lower of \$55.00 per share or 96% of prevailing market prices of the Common Stock immediately preceding the time of sale.

In addition to Regular Purchases and Tranche Purchases, we may also direct Lincoln Park to purchase other amounts as accelerated purchases or as additional accelerated purchases if the closing sale price of the Common Stock exceeds certain threshold prices as set forth in the Purchase Agreement.

Under applicable rules of The Nasdaq Global Market, in no event may we issue or sell to Lincoln Park under the Purchase Agreement more than 19.99% of the shares of the Common Stock outstanding immediately prior to the execution of the Purchase Agreement (which is 307,790 shares based on 1,539,717 shares outstanding immediately prior to the execution of the Purchase Agreement, as adjusted, of which 0 have been issued and sold as of December 12, 2019) (the "Exchange Cap"), unless (i) we obtain stockholder approval to issue shares of Common Stock in excess of the Exchange Cap or (ii) the average price of all applicable sales of common stock to Lincoln Park under the Purchase Agreement equals or exceeds \$5.55 (the average of the closing price of the Common Stock on the Nasdaq Global Market for the five business days immediately preceding the signing of the Purchase Agreement plus an incremental amount, as adjusted), such that issuances and sales of Common Stock to Lincoln Park under the Purchase Agreement would be exempt from the Exchange Cap limitation under applicable NASDAQ rules. In any event, the Purchase Agreement specifically provides that we may not issue or sell any shares of Common Stock under the Purchase Agreement if such issuance or sale would breach any applicable NASDAQ rules.

Lincoln Park has no right to require us to sell any shares of common stock to Lincoln Park, but Lincoln Park is obligated to make purchases as we direct, subject to certain conditions. In all instances, we may not sell shares of its common stock to Lincoln Park under the Purchase Agreement if it would result in Lincoln Park beneficially owning more than 4.99% of our Common Stock. There are no upper limits on the price per share that Lincoln Park must pay for shares of Common Stock.

The net proceeds under the Purchase Agreement will depend on the frequency and prices at which we sell shares of Common Stock to Lincoln Park. We expect that any proceeds received from such sales to Lincoln Park will be used for working capital and general corporate purposes.

Why the Company Needs Stockholder Approval

As a result of our listing on The Nasdaq Global Market, issuances of our Common Stock are subject to the Nasdaq Marketplace Rules, including Rule 5635(d), which requires us to obtain shareholder approval prior to the issuance of securities in connection with a transaction, other than a public offering, involving the sale, issuance or potential issuance by us of shares of our Common Stock (or securities convertible into or exercisable for shares of our common stock) at a price less than the greater of book or market value if such issuance would represent 20% or more of our Common Stock or voting power of the Company outstanding before the issuance (the "Nasdaq 20% Rule"). In order to comply with the Nasdaq 20% Rule and to satisfy conditions under the Purchase Agreement, we are seeking shareholder approval to permit issuance of 20% or more of our Common Stock.

Because the total number of shares issued by us to date in connection with the Purchase Agreement has not exceeded 19.99%, or 307,790 shares, we were not required to seek stockholder approval for those sales. However, future use of the Purchase Agreement may result in the issuance by us of more than 19.99% of our outstanding Common Stock, which requires stockholder approval under the Nasdaq 20% Rule. Accordingly, we are seeking approval from our stockholders of the proposed issuances of shares under the Purchase Agreement.

Effect of Failure to Obtain Stockholder Approval

If the stockholders do not approve this proposal, we will be unable to issue more than the original 19.99% of our outstanding Common Stock to Lincoln Park.

Effect of Approval

If the stockholders approve this proposal, more than the original 19.99% of our outstanding Common Stock (307,790 shares) would be available for issuance under the Purchase Agreement and we want to be able to utilize the Purchase Agreement to raise capital quickly. The issuance of such shares could result in significant dilution to our shareholders, and could substantially reduce our shareholders' percentage interest in the voting power of the Company.

Vote Required and Board Recommendation

Approval of this resolution requires the affirmative vote of the holders of a majority of the votes cast in person or by proxy at the Special Meeting. Abstentions and broker non-votes will each be counted as present for purposes of determining the presence of a quorum but will have no effect on the vote for approval of this proposal.

The Board unanimously recommends a vote “FOR” the approval, for purposes of complying with applicable NASDAQ Listing Rules, the potential issuance and sale of 20% or more of the Company’s Common Stock pursuant to the Purchase Agreement with Lincoln Park

PROPOSAL 4: APPROVAL THE ADJOURNMENT OF THE SPECIAL MEETING TO SOLICIT ADDITIONAL PROXIES

Adjournment of the Special Meeting

In the event that the number of shares of Common Stock present in person or represented by proxy at the Special Meeting and voting "FOR" the adoption of each of the proposals specified in the Notice of Special Meeting is insufficient to adopt every or any proposal, we may move to adjourn the Special Meeting in order to enable the Board to solicit additional proxies in favor of the adoption of the proposals specified in the Notice of Special Meeting. In that event, we will ask stockholders to vote only upon the adjournment proposal and not on any other proposal discussed in this proxy statement. If the adjournment is for more than thirty (30) days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

Vote Required and Board Recommendation

If a quorum is present, approval of the proposal to adjourn the Special Meeting to a later date requires the affirmative vote of the holders of a majority of the votes cast in person or by proxy at the Special Meeting.

The Board recommends that stockholders vote "FOR" the proposal to adjourn the Special Meeting to solicit additional proxies, if there are insufficient proxies at the Special Meeting to approve each or any of the proposals specified in the Notice of Special Meeting

EXECUTIVE COMPENSATION

Summary Compensation Table

The following table provides certain summary information concerning compensation awarded to, earned by or paid to our Chief Executive Officer, and the two next most highly paid executive officers for fiscal years ended December 31, 2018 and 2017.

Name & Principal Position	Year	Salary (\$)	Bonus (\$)	Stock Awards (\$)	Option Awards (\$) (1)	Non-Equity Incentive Plan Compensation (\$)	Change in Pension Value and Non- Qualified Deferred Compensation Earnings (\$)	All Other Compensation (\$)	Total (\$)
Seth Lederman	2018	472,500	160,000	—	844,945	—	—	—	1,477,445
Chief Executive Officer	2017	472,500	—	—	103,344	—	—	—	575,844
Gregory Sullivan	2018	335,000	70,000	—	316,855	—	—	—	721,855
Chief Medical Officer	2017	335,000	—	—	48,443	—	—	—	383,443
Bradley Saenger	2018	335,000	70,000	—	211,235	—	—	—	616,235
Chief Financial Officer	2017	335,000	—	—	30,680	—	—	—	365,680

(1) Represents the aggregate grant date fair value of options granted in accordance with Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 718, "Stock Compensation." For the relevant assumptions used in determining these amounts, refer to Note 7 to our audited financial statements.

Grants of Plan-Based Awards in Fiscal 2018

The following table provides information with regard to each grant of plan-based award made to a named executive officer under any plan during the fiscal year ended December 31, 2018.

Name	Grant Date	All Other Option Awards: Number of Securities Underlying Options (#)	Exercise or Base Price of Option Awards (\$/Share)	Grant Date Fair Value of Stock and Option Awards (\$) (1)
Seth Lederman	2/13/2018	1,567	\$ 340.00	\$ 428,653
	2/13/2018	1,567	\$ 425.00(2)	\$ 416,806
Bradley Saenger	2/13/2018	392	\$ 340.00	\$ 107,232
	2/13/2018	392	\$ 425.00(2)	\$ 104,268
Gregory Sullivan	2/13/2018	588	\$ 340.00	\$ 160,847
	2/13/2018	588	\$ 425.00(2)	\$ 156,402

(1) Represents the aggregate grant date fair value of options granted in accordance with FASB ASC Topic 718.

(2) Represents an exercise price at a 125% premium of the closing price of the Company's common stock on the grant date.

Outstanding Equity Awards at December 31, 2018

The following table presents information regarding outstanding equity awards held by our named executive officers as of December 31, 2018.

Name	Number of Securities underlying Unexercised Options (#) Exercisable	Number of Securities underlying Unexercised Options (#) Unexercisable	Option Exercise Price (\$/Sh)	Option Expiration Date
Seth Lederman	35	—	\$ 30,000.00	5/9/2022
	68	—	\$ 10,200.00	2/12/2023
	71	—	\$ 15,880.00	2/11/2024
	100	—	\$ 9,870.00	6/17/2024
	100	—	\$ 6,680.00	10/29/2024
	189	—	\$ 5,950.00	2/25/2025
	8	—	\$ 5,950.00	2/25/2025
	105	5(1)	\$ 5,030.00	2/9/2026
	—	110(2)	\$ 5,030.00	2/9/2026
	93	67(4)	\$ 550.00	3/1/2027
	—	1,567(5)	\$ 340.00	2/13/2028
—	1,567(5)	\$ 425.00	2/13/2028	
Bradley Saenger	11	—	\$ 9,870.00	6/17/2024
	11	—	\$ 6,680.00	10/29/2024
	13	—	\$ 5,950.00	2/25/2025
	14	1(1)	\$ 5,030.00	2/9/2026
	—	60(2)	\$ 2,420.00	5/27/2026
	17	3(3)	\$ 2,420.00	5/27/2026
	28	20(4)	\$ 550.00	3/1/2027
	—	392(5)	\$ 340.00	2/13/2028
—	392(5)	\$ 425.00	2/13/2028	
Gregory Sullivan	27	—	\$ 9,870.00	6/17/2024
	27	—	\$ 6,680.00	10/29/2024
	27	—	\$ 5,950.00	2/25/2025
	28	2(1)	\$ 5,030.00	2/9/2026
	—	30(2)	\$ 5,030.00	2/9/2026
	44	31(4)	\$ 550.00	3/1/2027
	—	588(5)	\$ 340.00	2/13/2028
—	588(5)	\$ 425.00	2/13/2028	

- (1) The shares subject to this stock option vested as to 1/3 of the shares on February 9, 2017, with the remaining shares vesting on an equal monthly basis over the following 24 months.
- (2) The shares subject to this stock option vest 1/3rd upon the date(s) that certain stock price goals are achieved. The stock price goals are such date(s) when the Company's common stock has an average closing sales price equal to or exceeding each of \$6,000.00, \$7,000.00 and \$8,000.00 per share for 20 consecutive trading days, subject to a one year minimum service period prior to vesting.
- (3) The shares subject to this stock option vested as to 1/3 of the shares on May 27, 2017, with the remaining shares vesting on an equal monthly basis over the following 24 months.
- (4) The shares subject to this stock option vested as to 1/3 of the shares on March 1, 2018, with the remaining shares vesting on an equal monthly basis over the following 24 months.
- (5) The shares subject to this stock option vested as to 1/3 of the shares on February 13, 2019, with the remaining shares vesting on an equal monthly basis over the following 24 months.

Option Exercises and Stock Vested

No options were exercised by any of the named executive officers and no named executive officers held restricted stock units during the fiscal year ended December 31, 2018.

Equity Compensation Plan Information

The following table provides certain information with respect to our equity compensation plans in effect as of December 31, 2018.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (A)	Weighted-average exercise price of outstanding options, warrants and rights (B)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column A)⁽²⁾ (C)
Equity compensation plans approved by security holders ⁽¹⁾	13,740	\$ 1,430.90	14,673
Equity compensation plans not approved by security holders	—	—	—
Total	13,740	\$ 1,430.90	14,673

(1) Consists of the 2012 Plan, the 2014 Plan, the 2016 Plan, the 2017 Plan, the 2018 Plan and the 2014 employee stock purchase plan (“ESPP”).

(2) Consists of shares available for future issuance under the 2018 Plan and our ESPP. As of December 31, 2018, 11,850 shares of common stock were available for issuance under the 2018 Plan and 2,823 shares of common stock were available for issuance under the ESPP.

Employment Contracts and Termination of Employment and Change-In-Control Arrangements

Employment Agreement with Seth Lederman

On February 11, 2014, the Company entered into an employment agreement (the “Lederman Agreement”) with Dr. Seth Lederman (“Lederman”) to continue to serve as our President, Chief Executive Officer and Chairman of the Board.

The base salary for Lederman under the Lederman Agreement was \$425,000 per annum, and is \$585,000 as of January 1, 2019. The Lederman Agreement has an initial term of one year and automatically renews for successive one year terms unless either party delivers written notice not to renew at least 60 days prior to the end of the current term.

Pursuant to the Lederman Agreement, if the Company terminates Lederman’s employment without Cause (as defined in the Lederman Agreement) or Lederman resigns for Good Reason (as defined in the Lederman Agreement), Lederman is entitled to the following payments and benefits: (1) his fully earned but unpaid base salary through the date of termination at the rate then in effect, plus all other benefits, if any, under any group retirement plan, nonqualified deferred compensation plan, equity award plan or agreement, health benefits plan or other group benefit plan to which Lederman may be entitled to under the terms of such plans or agreements; (2) a lump sum cash payment in an amount equal to 12 months of his base salary as in effect immediately prior to the date of termination; (3) continuation of health benefits for Lederman and his eligible dependents for a period of 12 months following the date of termination; and (4) the automatic acceleration of the vesting and exercisability of outstanding unvested stock awards as to the number of stock awards that would have vested over the 12-month period following termination had Lederman remained continuously employed by the Company during such period.

Pursuant to the Lederman Agreement, if Lederman's employment is terminated as a result of death or permanent disability, Lederman or his estate, as applicable, is entitled to the following payments and benefits: (1) his fully earned but unpaid base salary through the date of termination at the rate then in effect; (2) a lump sum cash payment in an amount equal to six months of his base salary as in effect immediately prior to the date of termination; and (3) the automatic acceleration of the vesting and exercisability of outstanding unvested stock awards.

If Lederman is terminated without Cause or resigns for Good Reason during the period commencing 90 days prior to a Change in Control (as defined below) or 12 months following a Change in Control, Lederman shall be entitled to receive, in lieu of the severance benefits described above, the following payments and benefits: (1) a lump sum cash payment in an amount equal to 36 months of his base salary as in effect immediately prior to the date of termination, except that, if and while Lederman is still entitled to the Sale Bonus (as defined below), it will only be 18 months; (2) continuation of health benefits for Lederman and his eligible dependents for a period of 24 months following the date of termination, except that, if and while Lederman is still entitled to the Sale Bonus it will only be 12 months; and (3) the automatic acceleration of the vesting and exercisability of outstanding unvested stock awards.

If during the term of the Lederman Agreement or within 120 days after Lederman is terminated without Cause or resigns for Good Reason, following a Change in Control, the Company consummates a Change in Control transaction in which the Enterprise Value (as defined below) equals or exceeds \$50 million, Lederman shall be entitled to receive a lump sum payment equal to 4.4% of the Enterprise Value (the "Sale Bonus"). The Sale Bonus provision of the Lederman Agreement will terminate upon the Company granting Lederman long-term incentive compensation mutually agreed to by the Board and Lederman.

For purposes of the Lederman Agreement, "Cause" generally means (1) commission of an act of fraud, embezzlement or dishonesty or some other illegal act that has a demonstrable material adverse impact on the Company or any successor or affiliate of the Company, (2) conviction of, or entry into a plea of "guilty" or "no contest" to, a felony, (3) unauthorized use or disclosure of the Company's confidential information or trade secrets or any successor or affiliate of the Company that has, or may reasonably be expected to have, a material adverse impact on any such entity; (4) gross negligence, failure to follow a material, lawful and reasonable request of the Board or material violation of any duty of loyalty to the Company or any successor or affiliate of the Company, or any other demonstrable material willful misconduct by Lederman, (5) ongoing and repeated failure or refusal to perform or neglect of his duties as required by his employment agreement, which failure, refusal or neglect continues for 30 days following Lederman's receipt of written notice from the Board stating with specificity the nature of such failure, refusal or neglect, provided that such failure to perform is not as a result of illness, injury or medical incapacity, or (6) material breach of any Company policy or any material provision of the Lederman Agreement.

For purposes of the Lederman Agreement, "Good Reason" generally means (1) a material diminution in Lederman's title, authority, duties or responsibilities, (2) a material diminution in Lederman's base compensation, unless such a reduction is imposed across-the-board to the Company's senior management, and such reduction is not greater than 15%, (3) a material change in the geographic location at which Lederman must perform his duties, (4) any other action or inaction that constitutes a material breach by the Company or any successor or affiliate of the Company's obligations to Lederman under the Lederman Agreement, or (5) the Company elects not to renew the Lederman Agreement for another term.

For purposes of the Lederman Agreement, "Change in Control" generally means:

- A transaction or series of transactions (other than public offerings) that results in any person or entity or related group of persons or entities (other than the Company, its subsidiaries, an employee benefit plan maintained by the Company or any of its subsidiaries or a person or entity that, prior to such transaction, directly or indirectly controls, is controlled by, or is under common control with, the Company) of beneficial ownership (within the meaning of Rule 13d-3 under the Exchange Act) of more than 40% of the total combined voting power of the Company's securities outstanding immediately after such acquisition;

- a merger, consolidation, reorganization, or business combination or (2) the sale, exchange or transfer of all or substantially all of the Company's assets in any single transaction or series of transactions or (3) the acquisition of assets or stock of another entity, in each case other than a transaction:
 - which results in the Company's voting securities outstanding immediately before the transaction continuing to represent, directly or indirectly, at least 60% of the combined voting power of the successor entity's outstanding voting securities immediately after the transaction, and
 - after which no person or group beneficially owns voting securities representing 40% or more of the combined voting power of the Company or its successor; provided, however, that no person or group is treated as beneficially owning 40% or more of combined voting power of the Company or its successor solely as a result of the voting power held in the Company prior to the consummation of the transaction.

For purposes of the Lederman Agreement, "Enterprise Value" generally means (1) in a Change in Control in which consideration is received by the Company, the total cash and non-cash consideration, including debt assumed, received by the Company, net of any fees and expenses in connection with the transaction and (2) in a Change in Control in which consideration is payable to the stockholders of the Company, the total cash and non-cash consideration, including debt assumed, payable to the Company's stockholders net of any fees and expenses in connection with the transaction. Enterprise Value also includes any cash or non-cash consideration payable to the Company or to the Company's stockholders on a contingent, earnout or deferred basis.

Employment Agreement with Gregory Sullivan

On June 3, 2014, the Company entered into an employment agreement (the "Sullivan Agreement") with Dr. Gregory Sullivan ("Sullivan") to serve as our Chief Medical Officer. The base salary for Sullivan under the Sullivan Agreement was \$225,000 per annum, and is \$400,000 as of January 1, 2019. The Sullivan Agreement had an initial term of one year and automatically renews for successive one year terms unless either party delivers written notice not to renew at least 60 days prior to the end of the current term.

Pursuant to the Sullivan Agreement, if the Company terminates Sullivan's employment without Cause (as defined below) or Executive resigns for Good Reason (as defined below), Sullivan is entitled to the following payments and benefits: (1) his fully earned but unpaid base salary through the date of termination at the rate then in effect, plus all other benefits, if any, under any group retirement plan, nonqualified deferred compensation plan, equity award plan or agreement, health benefits plan or other group benefit plan to which Sullivan may be entitled to under the terms of such plans or agreements; (2) a lump sum cash payment in an amount equal to 12 months of his base salary as in effect immediately prior to the date of termination; (3) continuation of health benefits for Sullivan and his eligible dependents for a period of 12 months following the date of termination; and (4) the automatic acceleration of the vesting and exercisability of outstanding unvested stock awards as to the number of stock awards that would have vested over the 12-month period following termination had Sullivan remained continuously employed by the Company during such period.

Pursuant to the Sullivan Agreement, if Sullivan's employment is terminated as a result of death or permanent disability, Sullivan or his estate, as applicable, is entitled to his fully earned but unpaid base salary through the end of the month in which termination occurs at the rate then in effect.

For purposes of the Sullivan Agreement, "Cause" generally means (1) commission of an act of fraud, embezzlement or dishonesty or some other illegal act that has a demonstrable material adverse impact on the Company or any successor or affiliate of the Company, (2) conviction of, or entry into a plea of "guilty" or "no contest" to, a felony, (3) unauthorized use or disclosure of the Company's confidential information or trade secrets or any successor or affiliate of the Company that has, or may reasonably be expected to have, a material adverse impact on any such entity, (4) gross negligence, failure to follow a material, lawful and reasonable request of the Company or material violation of any duty of loyalty to the Company or any successor or affiliate of the Company, or any other demonstrable material misconduct by Sullivan, (5) ongoing and repeated failure or refusal to perform or neglect of his duties as required by his employment agreement, which failure, refusal or neglect continues for 30 days following Sullivan's receipt of written notice from the Company stating with specificity the nature of such failure, refusal or neglect, or (6) material breach of any Company policy or any material provision of the Sullivan Agreement.

For purposes of the Sullivan Agreement, “Good Reason” generally means (1) a material diminution in Executive’s title, authority, duties or responsibilities, (2) a material diminution in the executive officer’s base compensation, unless such a reduction is imposed across-the-board to the Company’s senior management and such reduction is not greater than 15%, (3) a material change in the geographic location at which the executive officer must perform his duties, (4) any other action or inaction that constitutes a material breach by the Company or any successor or affiliate of the Company’s obligations to Sullivan under the Agreement, or (5) the Company elects not to renew the Agreement for another term.

Directors Compensation Table

The following table sets forth summary information concerning the total compensation paid to our non-employee directors in 2018 for services to our Company.

Name	Stock Awards (\$)	Option Awards (\$) ⁽¹⁾	Total (\$)
Margaret Smith Bell	\$ —	\$ 65,869	\$ 65,869
Patrick Grace*	\$ —	\$ 65,869	\$ 65,869
David Grange	\$ —	\$ 83,979	\$ 83,979
Donald Landry**	\$ —	\$ 65,869	\$ 65,869
Ernest Mario***	\$ —	\$ 12,416	\$ 12,416
Charles Mather IV****	\$ —	\$ 65,869	\$ 65,869
Adeoye Olukotun	\$ —	\$ 12,396	\$ 12,396
John Rhodes ⁽²⁾	\$ —	\$ 98,803	\$ 98,803
Samuel Saks*****	\$ —	\$ 12,416	\$ 12,416
Total:	<u>\$ —</u>	<u>\$ 483,486</u>	<u>\$ 483,486</u>

(1) Represents the aggregate grant date fair value of stock options granted in accordance with FASB ASC Topic 718. For the relevant assumptions used in determining these amounts, refer to Note 7 to our audited financial statements. These amounts do not necessarily correspond to the actual value that may be recognized from the stock option grant.

(2) Mr. Rhodes received additional stock options for serving as lead director.

* Mr. Grace resigned from the Board on August 1, 2019.

** Dr. Landry resigned from the Board on May 16, 2019.

*** Dr. Mario resigned from the Board on September 5, 2018.

**** Mr. Mather resigned from the Board on February 16, 2019.

***** Dr. Saks resigned from the Board on August 21, 2018.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information regarding beneficial ownership of our common stock as of December 12, 2019:

- by each person who is known by us to beneficially own more than 5% of our common stock;
- by each of our officers and directors; and
- by all of our officers and directors as a group.

Unless otherwise indicated in the footnotes to the following table, each person named in the table has sole voting and investment power and that person's address is c/o Tonix Pharmaceuticals Holding Corp., 509 Madison Avenue, Suite 1608, New York New York 10022.

NAME OF OWNER	TITLE OF CLASS	NUMBER OF SHARES OWNED(1)	PERCENT OWNED
Seth Lederman	Common Stock	27,146 (3)	*
Jessica Morris	Common Stock	684 (4)	*
Bradley Saenger	Common Stock	1,525 (5)	*
Gregory Sullivan	Common Stock	2,344 (6)	*
Margaret Smith Bell	Common Stock	400 (7)	*
David Grange	Common Stock	270 (8)	*
John Rhodes	Common Stock	900 (9)	*
Adeoye Olukotun	Common Stock	150 (10)	*
James Treco	Common Stock	1,000 (11)	*
Daniel Goodman	Common Stock	6 (12)	*
Officers and Directors as a Group (10 persons)	Common Stock	34,425 (13)	*
Armistice Capital, LLC	Common Stock	210,000 (14)	2.5
Altium Capital Management, LP	Common Stock	364,476 (15)	4.3

* Denotes less than 1%

(1) Beneficial Ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Shares of common stock subject to options or warrants currently exercisable or convertible, or exercisable or convertible within 60 days of December 12, 2019 are deemed outstanding for computing the percentage of the person holding such option or warrant but are not deemed outstanding for computing the percentage of any other person.

(2) Percentage based upon 8,530,254 shares of common stock issued and outstanding as of December 12, 2019.

(3) Includes 2,850 shares of common stock underlying options which are currently exercisable or become exercisable within 60 days, 5 shares of common stock underlying warrants, 205 shares of common stock owned by Lederman & Co, 33 shares of common stock owned by L&L, 59 shares of common stock owned by Targent, 30 shares of common stock owned by Leder Laboratories, Inc. (Leder Labs), 30 shares of common stock owned by Starling, 23,267 shares owned through a 401(k) account, 459 shares owned through an IRA account and 31 shares owned by Dr. Lederman's spouse. Seth Lederman, as the Managing Member of Lederman & Co and Targent, the Manager of L&L and the Chairman of Leder Labs and Starling, has investment and voting control over the shares held by these entities.

(4) Includes 664 shares of common stock underlying options which are currently exercisable or become exercisable within 60 days, and 3 shares of common stock underlying warrants.

(5) Includes 621 shares of common stock underlying options which are currently exercisable or become exercisable within 60 days.

(6) Includes 939 shares of common stock underlying options which are currently exercisable or become exercisable within 60 days.

(7) Includes 400 shares of common stock underlying options which are currently exercisable or vested or become exercisable within 60 days.

(8) Includes 270 shares of common stock underlying options which are currently exercisable or vested or become exercisable within 60 days.

(9) Includes 652 shares of common stock underlying options which are currently exercisable or become exercisable within 60 days, and 13 shares of common stock underlying warrants

(10) Includes 150 shares of common stock underlying options which are currently exercisable or vested or become exercisable within 60 days.

(11) Includes 1,000 shares of common stock underlying options which are currently exercisable or become exercisable within 60 days.

(12) Includes 5 shares of common stock underlying options which are currently exercisable or become exercisable within 60 days.

(13) Includes 7,551 shares of common stock underlying options which are currently exercisable or vested or become exercisable within 60 days, 205 shares of common stock owned by Lederman & Co, 33 shares of common stock owned by L&L, 59 shares of common stock owned by Targent, 30 shares of common stock owned by Leder Labs, 30 shares of common stock owned by Starling, 23,267 shares owned through a 401(k) account of Dr. Lederman, 459 shares owned through an IRA account of Dr. Lederman, 31 shares owned by Dr. Lederman's spouse, and 21 shares of common stock underlying warrants owned directly by the executive officers and directors.

(14) Based solely on a Schedule 13G filed with the SEC on November 25, 2019 by Armistice Capital, LLC ("Armistice"). Armistice, Armistice Capital Master Fund Ltd. and Steven Boyd share voting and dispositive power over these shares. The mailing address for Armistice and Mr. Boyd is 510 Madison Avenue, 7th Floor, New York, New York 10022. The mailing address for Armistice Capital Master Fund Ltd. is 20 Genesis Close, P.O. Box 314, Grand Cayman KY1-1104, Cayman Islands.

(15) Based solely on a Schedule 13G filed with the SEC on November 25, 2019 by Altium Capital Management, LP ("Altium"). Altium Growth Fund, LP (the "Fund") is the record and direct holder of 210,000 shares of common stock, 1,546,082 shares of common stock issuable upon exercise of warrants, 773,041 shares of common stock issuable upon exercise of common warrants, and 1,336,082 shares of common stock issuable upon conversion of 2,592 shares of Series A Convertible Preferred Stock. The Fund may not convert any preferred stock, or exercise any warrants or common warrants, to the extent that the Fund would beneficially own, after any such conversion or exercise, more than 9.99% of the outstanding shares of common stock of the Company. Altium is the investment adviser of, and may be deemed to beneficially own securities, owned by the Fund. Altium Growth GP, LLC is the general partner of, and may be deemed to beneficially own securities owned by the Fund. The mailing address for each beneficial holders is 551 Fifth Ave, FL 19, New York, NY 10176.

PROPOSALS OF SHAREHOLDERS FOR THE 2020 ANNUAL MEETING

If you want to submit a proposal for inclusion in our proxy statement for the 2020 Annual Meeting of shareholders, you may do so by following the procedures in Rule 14a-8 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). To be eligible for inclusion, shareholder proposals (other than nominees for directors) must be received at the Company's principal executive office, at the following address: 509 Madison Avenue, Suite 1608, New York, New York 10022, Attention: Secretary, no earlier than February 4, 2020 and no later than March 6, 2020.

Under Rule 14a-4 promulgated under the Exchange Act, if a proponent of a proposal that is not intended to be included in the proxy statement fails to notify us of such proposal at least 45 days prior to the anniversary of the mailing date of the preceding year's proxy statement, then we will be allowed to use our discretionary voting authority under proxies solicited by us when the proposal is raised at such Annual Meeting of shareholders, without any discussion of the matter in the proxy statement.

In addition, our Third Amended and Restated Bylaws contain an advance notice provision that requires that all business proposed by a shareholder that will be conducted or considered at a meeting must meet notice requirements. For business to be properly submitted by a shareholder for a vote at an Annual Meeting, the shareholder must (i) be a shareholder of record as of the record date for the meeting, (ii) be entitled to vote at the meeting, and (iii) have given timely notice in writing of the proposal to be submitted by the shareholder for a vote. The shareholder's notice must be delivered to the Secretary at the Company's principal executive office. To be timely, a shareholder's notice must be received by the Secretary at least 90 calendar days before the date corresponding to the date for the annual meeting in the preceding year, and no more than 120 calendar days before that date; provided, however, if the date of the annual meeting is changed by more than 25 calendar days from the date corresponding to the date of the preceding year's Annual Meeting, or if we did not hold an annual meeting in the preceding year, then the shareholder's notice will be considered timely if it is received by the Secretary not later than the close of business on the tenth calendar day following the day on which such notice of the date of the Annual Meeting was mailed or the date on which public disclosure of the date of the Annual Meeting was made, whichever first occurs.

A shareholder's notice to the Secretary must set forth as to each matter the shareholder proposes to bring before the annual meeting the information required by our Third Amended and Restated Bylaws, including: (i) a description in reasonable detail of the business desired to be brought before the annual meeting and the reasons for conducting such business at the annual meeting, (ii) the name and address, as they appear on the Company's books, of the shareholder proposing such business and of the beneficial owner, if any, on whose behalf the proposal is made, (iii) such information regarding each director nominee or each matter of business to be proposed by such shareholder as would be required to be included in a proxy statement filed pursuant to the proxy rules of the U. S. Securities and Exchange Commission, or the SEC, had the nominee been nominated, or intended to be nominated, or the matter been proposed, or intended to be proposed by the Board; (iv) if applicable, the consent of each nominee to be named in the proxy statement and to serve as director of the Company if so elected; (v) the class and number of shares of the Company that are owned beneficially and of record by the shareholder proposing such business and by the beneficial owner, if any, on whose behalf the proposal is made, and (vi) any material interest of such shareholder proposing such business and the beneficial owner, if any, on whose behalf the proposal is made in such business.

OTHER BUSINESS

The Board knows of no business to be brought before the Special Meeting other than as set forth above. If other matters properly come before the shareholders at the meeting, it is the intention of the persons named on the proxy to vote the shares represented thereby on such matters in accordance with their judgment.

By Order of the Board of Directors,

/s/ SETH LEDERMAN

Seth Lederman

Chief Executive Officer and Chairman of the Board of Directors

New York, New York

December 13, 2019

Appendix A

**TONIX PHARMACEUTICALS HOLDING CORP.
CERTIFICATE OF AMENDMENT**

ANNEX A

Article IV has been amended and restated to increase the authorized shares of common stock to 150,000,000. The complete text of Article IV is as follows:

IV. AUTHORIZATION OF CAPITAL STOCK: The Corporation is authorized to issue two classes of stock. One class of stock shall be Common Stock, par value \$0.001. The second class of stock shall be Preferred Stock, par value \$0.001. The Preferred Stock, or any series thereof, shall have such designations, preferences and relative, participating, optional or other special rights and qualifications, limitations or restrictions thereof as shall be expressed in the resolution or resolutions providing for the issue of such stock adopted by the board of directors and may be made dependent upon facts ascertainable outside such resolution or resolutions of the board of directors, provided that the matter in which such facts shall operate upon such designations, preferences, rights and qualifications; limitations or restrictions of such class or series of stock is clearly and expressly set forth in the resolution or resolutions providing for the issuance of such stock by the board of directors.

The total number of shares of stock of each class which the Corporation shall have authority to issue and the par value of each share of each class of stock are as follows:

Class	Par Value	Authorized Shares
Common	\$ 0.001	150,000,000
Preferred	\$ 0.001	5,000,000
	Total:	155,000,000

Appendix B

TONIX PHARMACEUTICALS HOLDING CORP. 2020 STOCK INCENTIVE PLAN

1 General

1.1 **Purpose.** The purposes of the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan (as amended from time to time, the “Plan”) are to promote the interests of Tonix Pharmaceuticals Holding Corp. (the “Company”) and the stockholders of the Company by providing (i) executive officers and other employees of the Company and its Subsidiaries (as defined below), (ii) certain advisors who perform services for the Company and its Subsidiaries and (iii) non-employee members of the Board of Directors of the Company (the “Board”) with appropriate incentives and rewards to encourage them to enter into and continue in the employ and service of the Company, to enable them to acquire a proprietary interest in the long-term success of the Company, and to reward their performance in fulfilling their personal responsibilities for long-range and annual achievements.

1.2 **Effective Date and Term.** The Plan will become effective upon the date it is approved by the stockholders of the Company (the “Effective Date”). Unless terminated earlier by the Committee, the Plan will expire on the tenth (10th) anniversary of the Effective Date.

1.3 **Definitions.** Capitalized terms in the Plan, unless defined elsewhere in the Plan, shall be defined as set forth below:

1934 Act. The term “1934 Act” shall mean the Securities Exchange Act of 1934, as amended, including the rules and regulations promulgated thereunder and any successor thereto.

Affiliated Company. The term “Affiliated Company” means any company, partnership, association, organization or other entity controlled by, controlling or under common control with the Company.

Award. The term “Award” means any award or benefit granted under the Plan, including, without limitation, Options, SARs, Restricted Stock, Restricted Stock Units, Other Stock-Based Awards and Cash-Based Awards.

Award Agreement. The term “Award Agreement” means a written or electronic Award grant agreement under the Plan.

Cash-Based Award. The term “Cash-Based Award” means a right or other interest granted to an Eligible Grantee under Section 4.2(vi) of the Plan that may be denominated or payable in cash, other than an Award pursuant to which the amount of cash is determined by reference to the value of a specific number of shares of Stock.

Change of Control. The term “Change of Control” shall be deemed to occur if and when:

- (i) any person, including a “person” as such term is used in Section 14(d)(2) of the 1934 Act (a “Person”), is or becomes a beneficial owner (as such term is defined in Rule 13d-3 under the 1934 Act), directly or indirectly, of securities of the Company representing 50% or more of the combined voting power of the Company’s then outstanding securities;
- (ii) individuals who, as of the Effective Date, constitute the Board (the “Incumbent Board”) cease for any reason to constitute at least a majority of the Board; provided, however, that any individual becoming a director subsequent to the Effective Date whose election, or nomination for election by the Company’s stockholders, was approved by a vote of at least a majority of the directors then comprising the Incumbent Board shall be considered as though such individual were a member of the Incumbent Board, but excluding for this purpose any such individual whose initial assumption of office occurs as a result of either an actual or threatened election contest (as such terms are used in Rule 14a-11 of Regulation 14A promulgated under the 1934 Act) or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Board;

- (iii) all or substantially all of the assets of the Company are sold, transferred or distributed, or the Company is dissolved or liquidated; or
- (iv) a reorganization, merger, consolidation or other corporate transaction involving the Company (a "Transaction") is consummated, in each case, with respect to which the stockholders of the Company immediately prior to such Transaction do not, immediately after the Transaction, own more than 50% of the combined voting power of the Company or other corporation resulting from such Transaction in substantially the same respective proportions as such stockholders' ownership of the voting power of the Company immediately before such Transaction.

Notwithstanding the foregoing or any other provision of this Plan, the term Change of Control shall not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company. For the avoidance of doubt, solely with respect to any Award that constitutes "deferred compensation" subject to Section 409A of the Code and that is payable on account of a Change of Control (including any installments or stream of payments that are accelerated on account of a Change of Control), a Change of Control shall occur only if such event also constitutes a "change in the ownership", "change in effective control", and/or a "change in the ownership of a substantial portion of assets" of the Company as those terms are defined under Treasury Regulation §1.409A-3(i)(5), but only to the extent necessary to establish a time or form of payment that complies with Section 409A of the Code, without altering the definition of Change of Control for purposes of determining whether a Grantee's rights to such Award become vested or otherwise unconditional upon the Change of Control.

Code. The term "Code" means the Internal Revenue Code of 1986, as amended. A reference to any provision of the Code shall include reference to any successor provision of the Code.

Committee. The term "Committee" means the committee of the Board described in Section 2 hereof and any sub-committee established by such Committee pursuant to Section 2.4.

Disability. The term "Disability" means "Disability" as defined in any Award Agreement to which the Grantee is a party.

Eligible Grantee. The term "Eligible Grantee" shall mean any Employee, Non-Employee Director or Key Advisor, as determined by the Committee in its sole discretion.

Employee. The term "Employee" means an active employee of the Company or a Subsidiary, but excluding any person who is classified by the Company or a Subsidiary as a "contractor" or "consultant," no matter how characterized by the Internal Revenue Service, other governmental agency or a court, or any employee who is not actively employed, as determined by the Committee. Any change of characterization of an individual by the Internal Revenue Service or any court or government agency shall have no effect upon the classification of an individual as an Employee for purposes of this Plan, unless the Committee determines otherwise.

Fair Market Value. For purposes of determining the "Fair Market Value" of a share of Stock as of any date, the "Fair Market Value" as of that date shall be, unless otherwise determined by the Committee, the closing sale price during regular trading hours of the Stock on the date on the principal securities market in which shares of Stock is then traded; or, if there were no trades on that date, the closing sale price during regular trading hours of the Stock on the first trading day prior to that date. If the Stock is not publicly traded at the time a determination of Fair Market Value is required to be made hereunder, the determination of such amount shall be made by the Committee in such manner as it deems appropriate.

Grantee. The term "Grantee" means an Employee, Non-Employee Director or Key Advisor of the Company or a Subsidiary who has been granted an Award under the Plan.

ISO. The term "ISO" means any Option intended to be and designated as an incentive stock option within the meaning of Section 422 of the Code.

Key Advisor. The term “Key Advisor” means a consultant or other key advisor who performs services for the Company or a Subsidiary.

Non-Employee Director. The term “Non-Employee Director” means a member of the Board who is not an Employee.

NQSO. The term “NQSO” means any Option that is not designated as an ISO, or which is designated by the Committee as an ISO but which subsequently fails or ceases to qualify as an ISO.

Option. The term “Option” means a right, granted to an Eligible Grantee under Section 4.2(i), to purchase shares of Stock. An Option may be either an ISO or an NQSO.

Other Stock-Based Award. The term “Other Stock-Based Award” means a right or other interest granted to an Eligible Grantee under Section 4.2(v) of the Plan that may be denominated or payable in, valued in whole or in part by reference to, or otherwise based on, or related to, Stock, including but not limited to (i) unrestricted Stock awarded as a bonus or upon the attainment of Performance Goals or otherwise as permitted under the Plan, and (ii) a right granted to an Eligible Grantee to acquire Stock from the Company containing terms and conditions prescribed by the Committee.

Performance Goals. The term “Performance Goals” means performance goals based on the attainment on an absolute or relative basis by the Company or any Subsidiary of the Company or any Affiliated Company (or any division or business unit of any such entity), or any two or more of the foregoing, of performance goals established by the Committee in its sole discretion, based on one or more of the following criteria (if applicable, any performance criteria that are financial metrics, may be determined in accordance with United States Generally Accepted Accounting Principles (“GAAP”) or may be adjusted when established to include or exclude any items otherwise includable or excludable under GAAP): (i) the attainment of certain target levels of, or a specified percentage increase in, revenues, earnings, income before taxes and extraordinary items, net income, operating income, earnings before or after deduction for all or any portion of income tax, earnings before interest, taxes, depreciation and amortization or a combination of any or all of the foregoing; (ii) the attainment of certain target levels of, or a percentage increase in, after-tax or pre-tax profits including, without limitation, that attributable to continuing and/or other operations; (iii) the attainment of certain target levels of, or a specified increase in, operational cash flow; (iv) the achievement of a certain level of, reduction of, or other specified objectives with regard to limiting the level of increase in, all or a portion of, the Company’s bank debt or other long-term or short-term public or private debt or other similar financial obligations of the Company, which may be calculated net of such cash balances and/or other offsets and adjustments as may be established by the Committee; (v) earnings per share or the attainment of a specified percentage increase in earnings per share or earnings per share from continuing operations; (vi) the attainment of certain target levels of, or a specified increase in return on capital employed or return on invested capital; (vii) the attainment of certain target levels of, or a percentage increase in, after-tax or pre-tax return on stockholders’ equity; (viii) the attainment of certain target levels of, or a specified increase in, economic value added targets based on a cash flow return on investment formula; (ix) the attainment of certain target levels in, or specified increases in, the fair market value of the shares of the Company’s common stock; (x) the growth in the value of an investment in the Company’s common stock; (xi) the attainment of a certain level of, reduction of, or other specified objectives with regard to limiting the level in or increase in, all or a portion of controllable expenses or costs or other expenses or costs; (xii) gross or net sales, revenue and growth of sales revenue (either before or after cost of goods, selling and general administrative expenses, research and development expenses and any other expenses or interest); (xiii) total stockholder return; (xiv) return on assets or net assets; (xv) return on sales; (xvi) operating profit or net operating profit; (xvii) operating margin; (xviii) gross or net profit margin; (xix) cost reductions or savings; (xx) productivity; (xxi) operating efficiency; (xxii) working capital; (xxiii) market share; (xxiv) customer satisfaction; (xxv) workforce diversity; (xxvi) results of clinical trials; (xxvii) acceptance of a new drug application by a regulatory body; (xxviii) regulatory body approval for commercialization of a product; (xxix) launch of a new drug; (xxx) completion of out-licensing, in-licensing or disposition of product candidates or other acquisition or disposition projects; and (xxxi) any other objective or subjective business or individual measures of performance selected by the Committee. Any of the above Performance Goals may be compared to the performance of a selected group of comparison companies, or a published or special index that the Committee, in its sole discretion, deems appropriate, or as compared to various stock market indices. The Committee in its sole discretion may designate additional or alternative business criteria on which the Performance Goals may be based or adjust, or modify or amend the aforementioned business criteria. The relative weights of the criteria that comprise the Performance Goals shall be determined by the Committee in its sole discretion. In establishing the Performance Goals for a performance period, the Committee may establish different Performance Goals for individual Grantees or groups of Grantees. The Committee in its sole discretion shall have the authority to make adjustments to the Performance Goals in recognition of unusual or non-recurring events affecting the Company or any Subsidiary of the Company or any Affiliated Company or the financial statements of the Company or any Subsidiary of the Company or any Affiliated Company, in response to changes in applicable laws or regulations, including changes in tax laws or generally accepted accounting principles or practices, or to account for items of gain, loss or expense determined to be extraordinary or unusual in nature or infrequent in occurrence or related to the disposal of a segment of a business, as applicable. Performance Goals may include a threshold level of performance below which no Award will be earned, a level of performance at which the target amount of an Award will be earned and a level of performance at which the maximum amount of the Award will be earned.

Prior Plans. The term “Prior Plans” means the Company’s 2012 Amended and Restated Incentive Stock Option Plan, the Company’s 2014 Stock Incentive Plan, the Company’s 2016 Stock Incentive Plan, the Company’s 2017 Stock Incentive Plan, the Company’s 2018 Stock Incentive Plan, and the Company 2019 Stock Incentive Plan.

Restricted Stock. The term “Restricted Stock” means an Award of shares of Stock to an Eligible Grantee under Section 4.2(iii) that may be subject to certain restrictions and to a risk of forfeiture. Stock issued upon the exercise of Options or SARs is not “Restricted Stock” for purposes of the plan, even if subject to post-issuance transfer restrictions or forfeiture conditions. When Restricted Stock vests, it ceases to be “Restricted Stock” for purposes of the Plan.

Restricted Stock Unit. The term “Restricted Stock Unit” means a right granted to an Eligible Grantee under Section 4.2(iv) to receive Stock or cash at the end of a specified deferral period, which right may be conditioned on the satisfaction of specified performance or other criteria.

Retirement. The term “Retirement” means any termination of employment or service as an Employee, Non-Employee Director or Key Advisor as a result of retirement in good standing under the rules of the Company or a Subsidiary, as applicable, then in effect.

Rule 16b-3. The term “Rule 16b-3” means Rule 16b-3, as from time to time in effect promulgated by the Securities and Exchange Commission under Section 16 of the 1934 Act, including any successor to such Rule.

Stock. The term “Stock” means shares of the common stock, par value \$0.001 per share, of the Company.

Stock Appreciation Right or SAR. The term “Stock Appreciation Right” or “SAR” means the right, granted to an Eligible Grantee under Section 4.2(ii), to be paid an amount measured by the appreciation in the Fair Market Value of Stock from the date of grant to the date of exercise of the right.

Subsidiary. The term “Subsidiary” means any present or future subsidiary corporation of the Company within the meaning of Section 424(f) of the Code, and any present or future business venture designated by the Committee in which the Company has a significant interest, including, without limitation, any subsidiary corporation in which the Company has at least a 50% ownership interest, as determined in the discretion of the Committee.

Substitute Award. The term “Substitute Award” means an Award granted or Stock issued by the Company in assumption of, or in substitution or exchange for, an award previously granted, or the right or obligation to make a future award, in all cases by a company acquired by the Company or any Subsidiary of the Company or with which the Company or a Subsidiary combines.

2 Administration

2.1 **Committee.** The authority to manage the operation of and administer the Plan shall be vested in a committee (the "Committee") in accordance with this Section 2. The Committee shall be selected by the Board, and shall consist solely of two or more members of the Board who are non-employee directors within the meaning of Rule 16b-3. Unless otherwise determined by the Board, the Company's Compensation Committee shall be designated as the "Committee" hereunder.

2.2 **Powers of the Committee.** The Committee's administration of the Plan shall be subject to the following:

- (i) Subject to the provisions of the Plan, the Committee will have the authority and discretion to select from among the Eligible Grantees those persons who shall receive Awards, to determine the time or times of receipt, to determine the types of Awards and the number of shares covered by the Awards, and to establish the terms, conditions, performance criteria, restrictions, and other provisions of such Awards;
- (ii) The Committee will have the authority and discretion to interpret the Plan, to establish, amend, and rescind any rules and regulations relating to the Plan, to determine the terms and provisions of any Award Agreement made pursuant to the Plan, and to make all other determinations that may be necessary or advisable for the administration of the Plan;
- (iii) Any interpretation of the Plan by the Committee and any decision made by it under the Plan is final and binding on all persons; and
- (iv) In managing the operation of and administering the Plan, the Committee shall take action in a manner that conforms to the articles of incorporation and by-laws of the Company, and applicable state corporate law.

2.3 **Prohibition Against Repricing.** Other than pursuant to Section 3.4, the Committee shall not, without the approval of the Company's stockholders, (a) lower the option price per share of an Option or SAR after it is granted, (b) cancel an Option or SAR when the exercise price per Share exceeds the Fair Market Value of one share in exchange for cash or another Award (other than in connection with a Change of Control), or (c) take any other action with respect to an Option or SAR that would be treated as a repricing under the rules and regulations of the principal U.S. national securities exchange on which the Company's shares are then listed.

2.4 **Delegation of Authority.** To the extent not inconsistent with applicable law, the rules of the NASDAQ Stock Market or other provisions of the Plan, the Committee may, at any time, allocate all or any portion of its responsibilities and powers to any one or more of its members or, with respect to Awards made to Employees other than executive officers, the Chief Executive Officer, including without limitation, the power to designate Grantees hereunder and determine the amount, timing and terms of Awards hereunder. Any such allocation or delegation may be revoked by the Committee at any time.

2.5 **Indemnification.** Each person who is or shall have been a member of the Committee, or the Board, shall be indemnified and held harmless by the Company against and from any loss, cost, liability or expense that may be imposed upon or reasonably incurred by him or her in connection with or resulting from any claim, action, suit or proceeding to which he or she may be a party or in which he or she may be involved by reason of any action taken in good faith or good faith failure to act under the Plan and against and from any and all amounts paid by him or her in settlement thereof, with the Company's approval, or paid by him or her in satisfaction of any judgment in any such action, suit or proceeding against him or her, provided he or she shall give the Company an opportunity, at its own expense, to handle and defend the same before he or she undertakes to handle and defend it on his or her own behalf. The foregoing right of indemnification shall be in addition to any other rights of indemnification or elimination of liability to which such persons may be entitled under the Company's articles of incorporation or by-laws, as a matter of law, or otherwise, or any power that the Company may have to indemnify them or hold them harmless.

2.6 **Minimum Vesting Requirement for Awards.** Notwithstanding any other provision of the Plan to the contrary, equity-based Awards granted under the Plan shall vest no earlier than the first anniversary of the date the Award is granted (excluding, for this purpose, any (i) Substitute Awards, (ii) shares of Stock delivered in lieu of fully vested cash Awards and (iii) Awards to Directors that vest on the earlier of the one year anniversary of the date of grant or the next annual meeting of stockholders which is at least 50 weeks after the immediately preceding year's annual meeting); provided, that, the Committee may grant equity-based Awards without regard to the foregoing minimum vesting requirement with respect to a maximum of five percent (5%) of the available share reserve authorized for issuance under the Plan pursuant to Section 3.1 (subject to adjustment under Section 3.4); and, provided further, for the avoidance of doubt, that the foregoing restriction does not apply to the Committee's discretion to provide for accelerated exercisability or vesting of any Award, including in cases of retirement, death, disability or a Change of Control, in the terms of the Award or otherwise.

2.7 **Treatment of Dividends and Dividend Equivalents on Unvested Awards.** Notwithstanding any other provision of the Plan to the contrary, with respect to any Award that provides for or includes a right to dividends or dividend equivalents, if dividends are declared during the period that all or part of an equity Award is outstanding and unvested, such dividends (or dividend equivalents) shall either (i) not be paid or credited with respect to such unvested Award or (ii) be accumulated but remain subject to vesting requirement(s) to the same extent as the applicable Award and shall only be paid at the time or times such vesting requirement(s) are satisfied. In no event shall dividends or dividend equivalents be paid with respect to Options or Stock Appreciation Rights.

3 Available Shares of Stock Under the Plan

3.1 **Shares Available for Awards.** Subject to the adjustments described in Section 3 herein, the maximum number of shares of Stock reserved for the grant of Awards under the Plan shall be 600,000, less one (1) share for every one (1) share that was subject to an option or stock appreciation right granted after November 22, 2019 under the 2019 Plan and 1.34 shares for every one (1) share that was subject to an award other than an option or stock appreciation right granted after November 22, 2019 under the 2019 Plan. Any shares of Stock that are subject to Options or SARs shall be counted against this limit as one (1) share for every one (1) share granted, and any shares of Stock that are subject to Awards other than Options or SARs shall be counted against this limit as 1.34 shares for every one (1) share granted. After the Effective Date of the Plan (as provided in Section 1.2), no awards may be granted under the 2019 Plan or any Prior Plan.

3.2 **Forfeited, Cancelled and Expired Awards.** Awards granted under the Plan, and awards outstanding after November 22, 2019 under any Prior Plan, that are forfeited, expire or are canceled or settled without issuance of Stock shall not count against the maximum number of shares that may be issued under the Plan as set forth in Section 3.1 and shall be available for future Awards under the Plan. Any Stock that again becomes available for Awards under the Plan pursuant to this Section 3.2 shall be added as (i) one (1) share for every one (1) share subject to Options or SARs granted under the Plan or options or stock appreciation rights granted under any Prior Plan, and (ii) as 1.34 shares for every one (1) share subject to Awards other than Options or Stock Appreciation Rights granted under the Plan or awards other than options or stock appreciation rights granted under any Prior Plan.

3.3 **Prohibition on Share Recycling.** Notwithstanding anything to the contrary, any and all Stock that is (i) withheld or tendered in payment of an Option (or in payment of an option under any Prior Plan) exercise price; (ii) withheld by the Company or tendered by the Grantee to satisfy any tax withholding obligation with respect to any Award (or any award under any Prior Plan); (iii) covered by a SAR (or a stock appreciation right under any Prior Plan) (in each case, to the extent that it is settled in Stock, without regard to the number of shares of Stock that are actually issued to the Grantee upon exercise); (iv) reacquired by the Company on the open market or otherwise using cash proceeds from the exercise of Options (or options under any Prior Plan), shall not be added to the maximum number of shares of Stock that may be issued under the Plan as set forth in Section 3.1.

3.4 **Adjustments.** In the event of any change in the Company's capital structure, including but not limited to a change in the number of shares of Stock outstanding, on account of (i) any stock dividend, spinoff, stock split, reverse stock split, extraordinary dividends or any similar equity restructuring, or (ii) any combination or exchange of equity securities, merger, consolidation, recapitalization, reorganization, or divestiture or any other similar event affecting the Company's capital structure, to reflect such change in the Company's capital structure, the Committee shall make appropriate equitable adjustments to (a) the maximum number of shares of Stock that may be issued under the Plan as set forth in Section 3.1, (b) the number of shares of Stock issuable upon outstanding Awards, (c) the maximum number of shares of Stock that may be issued under the Plan in the form of incentive stock options, and (d) the exercise price and any performance conditions applicable to outstanding Awards. In the event of any extraordinary dividend, divestiture or other distribution (other than ordinary cash dividends) of assets to stockholders, or any transaction or event described above, to the extent necessary to prevent the enlargement or diminution of the rights of Grantees, the Committee shall make appropriate equitable adjustments to the number or kind of shares subject to an outstanding Award, the exercise price applicable to an outstanding Award, and/or a Performance Goals. Any adjustments under this Section 3.4 shall be consistent with Section 409A or Section 424 of the Code, to the extent applicable, and made in a manner that does not adversely affect the exemption provided pursuant to Rule 16b-3, to the extent applicable. The Company shall give each Grantee notice of an adjustment to an Award hereunder and, upon notice, such adjustment shall be final, binding and conclusive for all purposes. Notwithstanding the foregoing, the Committee shall decline to adjust any Award made to a Grantee if such adjustment would violate applicable law.

3.5 **Fractional Shares.** The Company shall not be obligated to issue any fractional shares of Stock in settlement of Awards granted under the Plan. Except as otherwise provided in an Award Agreement or determined by the Committee, (i) the total number of shares issuable pursuant to the exercise, vesting or earning of an Award shall be rounded down to the nearest whole share, and (ii) no fractional shares shall be issued. The Committee may, in its discretion, determine that a fractional share shall be settled in cash.

3.6 **Substitute Awards; Plans of Acquired Companies.** Substitute Awards shall not count against the maximum number of shares that may be issued under the Plan as set forth in Section 3.1. In addition, shares of Stock issued in connection with awards that are assumed, converted or substituted as a result of the acquisition of another company by the Company or any Subsidiary of the Company (including by way of merger, combination or similar transaction) will not count against the number of shares of Stock that may be issued under the Plan. Available shares under a stockholder-approved plan of an acquired company (as appropriately adjusted to reflect the transaction) may be used for Awards under the Plan and do not reduce the maximum number of shares available for grant under the Plan, subject to applicable stock exchange requirements.

3.7 **Source of Shares.** Shares of Stock to be delivered under the Plan shall be made available from authorized and unissued Stock, or authorized and issued Stock reacquired and held as treasury shares or otherwise or a combination thereof.

4 Awards

4.1 **General.** The term of each Award shall be for such period as may be determined by the Committee, subject to the limitations set forth below. Subject to the terms of the Plan and any applicable Award Agreement, payments to be made by the Company or any Subsidiary of the Company upon the grant, maturation, or exercise of an Award may be made in such forms as the Committee shall determine at the date of grant or thereafter, including, without limitation, cash, Stock, or other property. In addition to the foregoing, the Committee may impose on any Award or the exercise thereof, at the date of grant, such additional terms and conditions not inconsistent with the provisions of the Plan, including, but not limited to forfeiture and clawback provisions, as the Committee shall determine; provided, however, that any such terms and conditions shall not be inconsistent with Section 409A of the Code.

4.2 **Types of Awards.** The Committee is authorized to grant the Awards described in this Section 4.2, under such terms and conditions as deemed by the Committee to be consistent with the purposes of the Plan. Such Awards may be granted with value and payment contingent upon Performance Goals. Each Award shall be evidenced by an Award Agreement containing such terms and conditions applicable to such Award as the Committee shall determine.

(i) **Options.** The Committee is authorized to grant Options to Grantees on the following terms and conditions:

- a. **Type of Award.** The Award Agreement evidencing an Option shall designate the Option as either an ISO or an NQSO, as determined in the discretion of the Committee. At the time of the grant of Options, the Committee may place restrictions on the exercisability or vesting of Options that shall lapse, in whole or in part, upon the passage of time and/or attainment of Performance Goals.

- b. Exercise Price. The exercise price of each Option granted under this Section 4.2 shall be established by the Committee or shall be determined by a method established by the Committee at the time the Option is granted; provided, however, that the exercise price shall not be less than 100% of the Fair Market Value of a share of Stock on the date of grant of the Award. Notwithstanding the foregoing, the exercise price of any Substitute Awards may be issued at any such price as the Committee determines necessary in order to preserve for such newly Eligible Grantee the economic value of all or a portion of such acquired entity award.
- c. Exercise. Upon satisfaction of the applicable conditions relating to vesting and exercisability, as determined by the Committee and set forth in the Award Agreement, and upon provision for the payment in full of the exercise price and applicable taxes due, the Grantee shall be entitled to exercise the Option and receive the number of shares of Stock issuable in connection with the Option exercise provided, however, that no Option may be exercised more than ten years after its grant date. Except as set forth in Section 4.3, no NQSO granted hereunder may be exercised after the earlier of (A) the expiration of the NQSO or (B) unless otherwise provided by the Committee in an Award Agreement, ninety days after the severance of an NQSO holder's employment or service with the Company or any Subsidiary. The shares issued in connection with the Option exercise may be subject to such conditions and restrictions as the Committee may determine, from time to time. An Option may be exercised by any method as may be permitted by the Committee from time to time, including but not limited to any "net exercise" or other "cashless" exercise method.
- d. Restrictions Relating to ISOs. In addition to being subject to the terms and conditions of this Section 4.2(i), ISOs shall comply with all other requirements under Section 422 of the Code. Accordingly, ISOs may be granted only to Eligible Grantees who are employees (as described in Treasury Regulation Section 1.421-7(h)) of the Company or of any "Parent Corporation" (as defined in Code Section 424(e)) or of any "Subsidiary Corporation" (as defined in Code Section 424(f)) on the date of grant. The aggregate Fair Market Value (determined as of the time the ISO is granted) of the Stock with respect to which ISOs (under all option plans of the Company and of any Parent Corporation and of any Subsidiary Corporation) are exercisable for the first time by an Eligible Grantee during any calendar year shall not exceed \$100,000. ISOs shall not be transferable by the Eligible Grantee otherwise than by will or the laws of descent and distribution and shall be exercisable, during the Eligible Grantee's lifetime, only by such Eligible Grantee. The Committee shall not grant ISOs to any Employee who, at the time the ISO is granted, owns stock possessing (after the application of the attribution rules of Section 424(d) of the Code) more than ten percent (10%) of the total combined voting stock of the Company or of any Parent Corporation or of any Subsidiary Corporation, unless the exercise price of the ISO is fixed at not less than one hundred and ten percent (110%) of the Fair Market Value of a share of Common Stock on the date of grant and the exercise of such ISO is prohibited by its terms after the fifth (5th) anniversary of the ISO's date of grant. In addition, no ISO shall be issued to an Eligible Grantee in tandem with a NQSO issued to such Eligible Grantee in accordance with Treasury Regulation Section 14a.422A-1, Q/A-39. Subject to Section 3.4, a maximum of 500,000 shares may be granted in the form of ISOs.

(ii) *SARs*. The Committee is authorized to grant SARs to Grantees on the following terms and conditions:

- a. In General. SARs may be granted independently or in tandem with an Option at the time of grant of the related Option. An SAR granted in tandem with an Option shall be exercisable only to the extent the underlying Option is exercisable. Payment of an SAR may be made in cash, Stock, or a combination of the foregoing, as specified in the Award Agreement or determined in the sole discretion of the Committee. At the time of the grant of SARs, the Committee may place restrictions on the exercisability or vesting of SARs that shall lapse, in whole or in part, upon the passage of time and/or the attainment of Performance Goals.

- b. Term and Exercisability of SARs. SARs shall be exercisable over the exercise period at such times and upon such conditions as the Committee may determine, as reflected in the Award Agreement; provided, however, that no SAR may be exercised more than ten years after its grant date. Except as set forth in Section 4.3, no SAR granted hereunder may be exercised after the earlier of (A) the expiration of the SAR or (B) unless otherwise provided by the Committee in an Award Agreement, ninety days after the severance of an SAR holder's employment or service with the Company or any Subsidiary.
 - c. Payment. An SAR shall confer on the Grantee a right to receive an amount with respect to each share of Stock subject thereto, upon exercise thereof, equal to the excess of (A) the Fair Market Value of one share of Stock on the date of exercise over (B) the grant price of the SAR (which in the case of an SAR granted in tandem with an Option shall be equal to the exercise price of the underlying Option, and which in the case of any other SAR shall be such price as the Committee may determine but in no event shall be less than the Fair Market Value of a share of Stock on the date of grant of such SAR). An SAR may be exercised by giving written notice of such exercise to the Committee or its designated agent.
- (iii) *Restricted Stock.* The Committee is authorized to grant Restricted Stock to Grantees on the following terms and conditions:
- a. Issuance and Restrictions. Restricted Stock shall be subject to such restrictions on transferability and other restrictions, if any, as the Committee may impose at the date of grant, which restrictions may lapse separately or in combination at such times, under such circumstances, in such installments, or otherwise, as the Committee may determine. The Committee may place restrictions on Restricted Stock that shall lapse, in whole or in part, upon the passage of time and/or attainment of Performance Goals. Except to the extent restricted under the Award Agreement relating to the Restricted Stock, a Grantee granted Restricted Stock shall have all of the rights of a stockholder including, without limitation, the right to vote Restricted Stock and the right to receive dividends thereon.
 - b. Certificates for Stock. Restricted Stock granted under the Plan may be evidenced in such manner as the Committee shall determine. If certificates representing Restricted Stock are registered in the name of the Grantee, such certificates shall bear an appropriate legend referring to the terms, conditions, and restrictions applicable to such Restricted Stock, and the Company may retain physical possession of the certificate.
 - c. Dividends. The Committee may not provide for the current payment of dividends for Restricted Stock; for such Awards, dividends may accrue, but shall not be payable, unless and until the Award vests. Stock distributed in connection with a stock split or stock dividend shall be subject to the transfer restrictions, forfeiture risks and vesting conditions to the same extent as the Restricted Stock with respect to which such Stock or other property has been distributed.
- (iv) *Restricted Stock Units.* The Committee is authorized to grant Restricted Stock Units to Grantees, subject to the following terms and conditions:
- a. Conditions to Vesting. At the time of the grant of Restricted Stock Units, the Committee may place restrictions on Restricted Stock Units that shall lapse, in whole or in part, upon the passage of time and/or attainment of Performance Goals.
 - b. Benefit Upon Vesting. Unless otherwise provided in an Award Agreement, upon the vesting of a Restricted Stock Unit, there shall be delivered to the Grantee, within 30 days of the date on which such Award (or any portion thereof) vests, the number of shares of Stock equal to the number of Restricted Stock Units becoming so vested.

- c. Dividend Equivalents. To the extent provided in an Award Agreement, and subject to Section 2.7 and the requirements of Section 409A of the Code, an Award of Restricted Stock Units may provide the Grantee with the right to receive dividend equivalent payments with respect to Stock subject to the Award, which payments may be settled in cash or Stock, as determined by the Committee. Any such settlements and any crediting of dividend equivalents may, at the time of grant of the Restricted Stock Unit, be made subject to the transfer restrictions, forfeiture risks, vesting and conditions of the Restricted Stock Units and subject to such other conditions, restrictions and contingencies as the Committee shall establish at the time of grant of the Restricted Stock Unit, including the reinvestment of such credited amounts in Stock equivalents, provided that all such conditions, restrictions and contingencies shall comply with the requirements of Section 409A of the Code.
- (v) *Other Stock-Based Awards*. The Committee is authorized to grant Awards to Grantees in the form of Other Stock-Based Awards, as deemed by the Committee to be consistent with the purposes of the Plan. At the time of the grant of Other Stock-Based Awards, the Committee may place restrictions on the payout or vesting of Other Stock-Based Awards that shall lapse, in whole or in part, upon the passage of time and/or attainment of Performance Goals. The Committee shall determine the terms and conditions of such Awards at the date of grant. Other Stock-Based Awards may not be granted with the right to receive dividend equivalent payments.
- (vi) *Cash-Based Awards*. The Committee is authorized to grant Awards to Grantees in the form of Cash-Based Awards, as deemed by the Committee to be consistent with the purposes of the Plan. At the time of the grant of Cash-Based Awards, the Committee may place restrictions on the payout or vesting of Cash-Based Awards that shall lapse, in whole or in part, upon the passage of time and/or attainment of Performance Goals. The Committee shall determine the terms and conditions of such Awards at the date of grant.
- (vii) *Settlement of Options and SARs*. Shares of Stock delivered pursuant to the exercise of an Option or SAR shall be subject to such conditions, restrictions and contingencies as the Committee may establish in the applicable Award Agreement. Settlement of SARs may be made in shares of Stock (valued at their Fair Market Value at the time of exercise), in cash, or in a combination thereof, as determined in the discretion of the Committee and set forth in the Award Agreement. The Committee, in its discretion, may impose such conditions, restrictions and contingencies with respect to shares of Stock acquired pursuant to the exercise of an Option or an SAR as the Committee determines to be desirable.
- (viii) *Vesting; Additional Terms*. Subject to Section 2.6 and except as provided in Section 4.3, Awards granted hereunder shall vest as determined by the Committee and set forth in the Award Agreement. The term of any Award granted under the Plan will not exceed ten years from the date of grant.
- (ix) *Performance-Based Awards*.
 - a. The Committee may determine that Restricted Stock, Restricted Stock Units, Other Stock-Based Awards or Cash-Based Awards shall vest or be delivered based on Performance Goals.
 - b. The Committee in its sole discretion shall have the authority to make adjustments to the Performance Goals in recognition of events affecting the Company or any Subsidiary of the Company or any Affiliated Company or the financial statements of the Company or any Subsidiary of the Company or any Affiliated Company, for the following items: (1) asset write-downs; (2) litigation or claim judgments or settlements; (3) the effect of changes in tax laws, accounting principles, regulations, or other laws or regulations affecting reported results; (4) any reorganization and restructuring programs, including discontinued operations; (5) acquisitions or divestitures; (6) unusual, infrequently occurring, nonrecurring or extraordinary items identified in the Company's audited financial statements, including footnotes; (7) any reorganization or change in the corporate or capital structures of the Company; (8) foreign exchange gains and losses; (9) business interruption events; (10) annual incentive payments or other bonuses; (11) capital charges; or (12) any other adjustments determined by the Committee with respect to an Award.

- (x) *Automatic Extended Exercisability in Certain Cases.* Notwithstanding the foregoing provisions of this Section, if the date an Award would otherwise terminate or be exercisable is a date that the Grantee is prohibited from exercising the Award under the Company's insider trading policy or such other conditions under applicable securities laws as the Committee shall specify, the term of the Award shall be extended to the third business day after the Grantee is no longer so prohibited from exercising the Award, but in no event shall the Award be extended beyond the original stated term of the Award.

4.3 **Change of Control of the Company.**

- (i) The Committee may, at the time an Award is made or at any time prior to, coincident with or after the time of a Change of Control:
- a. provide for the adjustment of any Performance Goals as the Committee deems necessary or appropriate to reflect the Change of Control;
 - b. provide for the cancellation of any Awards then outstanding if the surviving entity or acquiring entity (or the surviving or acquiring entity's parent company) in the Change of Control replaces the Awards with new rights of substantially equivalent value, as determined by the Committee. For an Award to be validly assumed by a successor for purpose of this Section 4.3(b), it must (x) provide such Grantee with rights and entitlements substantially equivalent to or better than the rights, terms and conditions applicable under such Award, including, but not limited to, an identical or better exercise or vesting schedules; (y) have substantially equivalent value to such Award (determined at the time of the Change of Control); and (z) be based on stock that is traded on an established U.S. securities market or an established securities market outside the United States upon which the Grantees could readily trade the stock without administrative burdens or complexities. In the event of any ambiguity or discrepancy, the determination of the Committee shall be final and binding;
 - c. provide that upon an involuntary termination of a Grantee's employment as a result of a Change of Control, any time periods shall accelerate, and any other conditions relating to the vesting, exercise, payment or distribution of an Award shall be waived; or
 - d. provide that Awards shall be purchased for an amount of cash equal to the amount that could have been obtained for the shares covered by a Restricted Stock Award if it had been vested and or by an Option or SAR if it had been exercised at the time of the Change of Control, provided however that Awards outstanding as of the date of the Change of Control may be cancelled and terminated without payment if the consideration payable with respect to one share of Stock in connection with the Change of Control is less than the exercise price or grant price applicable to such Award, as applicable.

4.4 **Limitation on Award Grants to Non-Employee Directors.** The maximum number of shares of Stock subject to Awards granted during a single fiscal year to any non-employee director, taken together with any cash fees paid to such non-employee director during the fiscal year, in respect of such director's service as a member of the Board during such year (including service as a member or chair of any committees of the Board), shall not exceed \$350,000 in total value (calculating the value of any such Awards based on the grant date fair value of such Awards for financial reporting purposes); *provided*, that the Board may make exceptions to this limit for individual non-employee directors in extraordinary circumstances as the Board may determine in its sole discretion, so long as the aggregate limit per non-employee director does not exceed \$500,000 in total value during a fiscal year.

5 Operation

5.1 **Duration.** Grants may be made under the Plan through January 17, 2030. In the event of Plan termination while Awards remain outstanding, the Plan shall remain in effect as long as any Awards under it are outstanding, although no further grants may be made following Plan termination.

5.2 **Uncertificated Stock.** Nothing contained in the Plan shall prohibit the issuance of Stock on an uncertificated basis, to the extent allowed by the Company's Articles of Incorporation and Bylaws, by applicable law and by the applicable rules of any stock exchange.

5.3 **Tax Withholding.** All distributions under the Plan are subject to withholding of all applicable taxes, and the Committee may condition the delivery of any shares or other benefits under the Plan on satisfaction of the applicable withholding obligations. The Committee, in its discretion, and subject to such requirements as the Committee may impose prior to the occurrence of such withholding, may permit such withholding obligations to be satisfied through cash payment by the Grantee, through the surrender of shares of Stock which the Grantee already owns, through withholding from other compensation payable to the Grantee or through the surrender of unrestricted shares of Stock to which the Grantee is otherwise entitled under the Plan, but only to the extent of the minimum amount required to be withheld under applicable law (or, if permitted by the Company, such other withholding rate as will not cause adverse accounting consequences and is permitted under applicable IRS withholding rules).

5.4 **Use of Shares.** Subject to the limitations on the number of shares of Stock that may be delivered under the Plan, the Committee may use available shares of Stock as the form of payment for compensation, grants or rights earned or due under any other compensation plans or arrangements of the Company or a Subsidiary, including the plans and arrangements of the Company or a Subsidiary assumed in business combinations.

5.5 **Nontransferability.** Awards granted under the Plan, and during any period of restriction on transferability, shares of Common Stock issued in connection with the exercise of an Option or a SAR, or vesting of a Restricted Stock Award may not be sold, pledged, hypothecated, assigned, margined or otherwise transferred by a Grantee in any manner other than by will or the laws of descent and distribution, unless and until the shares underlying such Award have been issued, and all restrictions applicable to such shares have lapsed or have been waived by the Committee. No Award or interest or right therein shall be subject to the debts, contracts or engagements of a Grantee or his or her successors in interest or shall be subject to disposition by transfer, alienation, anticipation, pledge, encumbrance, assignment or any other means whether such disposition be voluntary or involuntary or by operation of law, by judgment, lien, levy, attachment, garnishment or any other legal or equitable proceedings (including bankruptcy and divorce), and any attempted disposition thereof shall be null and void, of no effect, and not binding on the Company in any way. Notwithstanding the foregoing, the Committee may permit Options and/or shares issued in connection with an Option or a SAR exercise that are subject to restrictions on transferability, to be transferred one time and without payment or consideration to a member of a Grantee's immediate family or to a trust or similar vehicle for the benefit of a Grantee's immediate family members. During the lifetime of a Grantee, all rights with respect to Awards shall be exercisable only by such Grantee or, if applicable pursuant to the preceding sentence, a permitted transferee.

5.6 **Form and Time of Elections.** Unless otherwise specified herein, each election required or permitted to be made by any Grantee or other person entitled to benefits under the Plan, and any permitted modification, or revocation thereof, shall be in writing filed with the Committee at such times, in such form, and subject to such restrictions and limitations, not inconsistent with the terms of the Plan, as the Committee shall require.

5.7 **Agreement with Company.** An Award under the Plan shall be subject to such terms and conditions, not inconsistent with the Plan, as the Committee shall, in its sole discretion, prescribe. The terms and conditions of any Award to any Grantee shall be reflected in such form of written document as is determined by the Committee. A copy of such document shall be provided to the Grantee, and the Committee may, but need not, require that the Grantee shall sign a copy of such document. Such document is referred to in the Plan as an "Award Agreement" regardless of whether any Grantee signature is required.

5.8 **Gender and Number.** Where the context admits, words in any gender shall include any other gender, words in the singular shall include the plural and the plural shall include the singular.

5.9 **Limitation of Implied Rights.**

- (ii) The Plan shall at all times be unfunded and neither a Grantee nor any other person shall, by reason of participation in the Plan, acquire any right in or title to any assets, funds or property of the Company or any Subsidiary whatsoever, including, without limitation, any specific funds, assets, or other property which the Company or any Subsidiary, in its sole discretion, may set aside in anticipation of a liability under the Plan. Nothing contained in the Plan and no action taken pursuant hereto shall create or be construed to create a fiduciary relationship between the Company and any Grantee or any other person. A Grantee shall have only a contractual right to the Stock or amounts, if any, payable under the Plan, unsecured by any assets of the Company or any Subsidiary, and nothing contained in the Plan shall constitute a guarantee that the assets of the Company or any Subsidiary shall be sufficient to pay any benefits to any person.
- (iii) The Plan does not constitute a contract of employment or service, and selection as a Grantee will not give any participating Employee, Non-Employee Director or Key Advisor the right to be retained in the employ or service of the Company or any Subsidiary, nor any right or claim to any benefit under the Plan, unless such right or claim has specifically accrued under the terms of the Plan. Except as otherwise provided in the Plan or the Award Agreement, no Award under the Plan shall confer upon the holder thereof any rights as a stockholder of the Company prior to the date on which the individual fulfills all conditions for receipt of such rights.

5.10 **Section 409A.** It is intended that all Options and SARs granted under the Plan shall be exempt from the provisions of Section 409A of the Code and that all other Awards under the Plan, to the extent that they constitute “non-qualified deferred compensation” within the meaning of Section 409A of the Code, will comply with Section 409A of the Code (and any regulations and guidelines issued thereunder). The Plan and any Award Agreements issued hereunder may be amended in any respect deemed by the Board or the Committee to be necessary in order to preserve compliance with Section 409A of the Code. Notwithstanding anything in this Plan to the contrary, if required by Section 409A of the Code, if a Grantee is considered a “specified employee” for purposes of Section 409A of the Code and if payment of any Award under this Plan is required to be delayed for a period of six months after “separation from service” within the meaning of Section 409A of the Code, payment of such Award shall be delayed as required by Section 409A of the Code, and the accumulated amounts with respect to such Award shall be paid in a lump sum payment within ten days after the end of the six month period. If the Grantee dies during the postponement period prior to the payment of benefits, the amounts withheld on account of Section 409A of the Code shall be paid to the Grantee’s beneficiary within sixty (60) days after the date of the Grantee’s death. For purposes of Section 409A of the Code, each payment under the Plan shall be treated as a separate payment. In no event shall a Grantee, directly or indirectly, designate the calendar year of payment. To the extent that any provision of the Plan would cause a conflict with the requirements of section 409A of the Code, or would cause the administration of the Plan to fail to satisfy the requirements of Section 409A of the Code, such provision shall be deemed null and void to the extent permitted by applicable law. Notwithstanding anything in the Plan or any Award Agreement to the contrary, each Grantee shall be solely responsible for the tax consequences of Awards under the Plan, and in no event shall the Company have any responsibility or liability if an Award does not meet any applicable requirements of Section 409A of the Code. Although the Company intends to administer the Plan to prevent taxation under Section 409A of the Code, the Company does not represent or warrant that the Plan or any Award complies with any provision of federal, state, local or other tax law.

5.11 **Regulations and Other Approvals.**

- (i) The obligation of the Company to sell or deliver Stock with respect to any Award granted under the Plan shall be subject to all applicable laws, rules and regulations, including all applicable federal and state securities laws, and the obtaining of all such approvals by governmental agencies as may be deemed necessary or appropriate by the Committee.

- (ii) Each Award is subject to the requirement that, if at any time the Committee determines, in its absolute discretion, that the listing, registration or qualification of Stock issuable pursuant to the Plan is required by any securities exchange or under any state or federal law, or the consent or approval of any governmental regulatory body is necessary or desirable as a condition of, or in connection with, the grant of an Award or the issuance of Stock, no such Award shall be granted or payment made or Stock issued, in whole or in part, unless listing, registration, qualification, consent or approval has been effected or obtained free of any conditions not acceptable to the Committee.
- (iii) In the event that the disposition of Stock acquired pursuant to the Plan is not covered by a then current registration statement under the Securities Act and is not otherwise exempt from such registration, such Stock shall be restricted against transfer to the extent required by the Securities Act of 1933, as amended, or regulations thereunder, and applicable state securities laws, and the Committee may require a Grantee receiving Stock pursuant to the Plan, as a condition precedent to receipt of such Stock, to represent to the Company in writing that the Stock acquired by such Grantee is acquired for investment only and not with a view to distribution.
- (iv) With respect to persons subject to section 16 of the 1934 Act, it is the intent of the Company that the Plan and all transactions under the Plan comply with all applicable provisions of Rule 16b-3.
- (v) All Awards under the Plan will be subject to any compensation, clawback and recoupment policies that may be applicable to the employees of the Company, as in effect from time to time and as approved by the Board or Committee, whether or not approved before or after the Effective Date. Subject to the requirements of applicable law, any such compensation, clawback and recoupment policies shall apply to Awards made after the effective date of the policy.

5.12 **Non-Employee Director Award Deferrals.** The Committee may permit a Non-Employee Director to defer receipt of the payment of cash or the delivery of shares that would otherwise be due to such Non-Employee Director in connection with any Restricted Stock, Restricted Stock Units, Other Stock-Based Awards or Cash-Based Awards. If any such deferral election is permitted, the Committee shall establish rules and procedures for such deferrals and may provide for interest or other earnings to be paid on such deferrals, which rules and procedures shall be consistent with applicable requirements of Section 409A of the Code. Unless otherwise specified in a Non-Employee Director's valid election, any deferred amount will be deferred until the earliest to occur of the Non-Employee Director's death, separation from service, or Change of Control; provided that any such deferral election is made by the Non-Employee Director on or prior to December 31 of the calendar year preceding the calendar year in which any such amounts are earned, or, if such Non-Employee Director is newly eligible for purposes of Section 409A of the Code, then within 30 days following the date he or she is first eligible, and then only with respect to amounts earned after the date of the election.

6 Amendment and Termination

The Plan may be terminated or amended by the Board at any time, except that the following actions may not be taken without stockholder approval:

- (i) any increase in the number of shares that may be issued under the Plan (except by certain adjustments provided for under the Plan);
- (ii) any change in the class of persons eligible to receive ISOs under the Plan;
- (iii) any change in the requirements of Sections 4.2(i)(b) and 4.2(ii)(c) hereof regarding the exercise price of Options and the grant price of SARs;
- (iv) any repricing or cancellation and regrant of any Option or, if applicable, other Award at a lower exercise, base or purchase price, as set forth in Section 2.3; or

- (v) any other amendment to the Plan that would require approval of the Company's stockholders under applicable law, regulation or rule or stock exchange listing requirement.

Notwithstanding any of the foregoing, adjustments pursuant to Section 3 shall not be subject to the foregoing limitations of this Section 6.

7 Governing Law

The Plan and all Award Agreements entered into under the Plan shall be construed in accordance with and governed by the laws of the State of New York, except that any principles or provisions of New York law that would apply the law of another jurisdiction (other than applicable provisions of U.S. Federal law) shall be disregarded. Notwithstanding the foregoing, matters with respect to indemnification, delegation of authority under the Plan, and the legality of shares of Stock issued under the Plan, shall be governed by the Nevada Revised Statutes.

8 Severability

If any of the provision of this Plan is finally held to be invalid, illegal or unenforceable (whether in whole or in part), such provision shall be deemed modified to the extent, but only to the extent, of such invalidity, illegality or unenforceability and the remaining provisions shall not be affected thereby; provided that, if any such provision is finally held to be invalid, illegal or unenforceable because it exceeds the maximum scope determined to be acceptable to permit such provision to be enforceable, such provision shall be deemed modified to the minimum extent necessary in order to make such provision enforceable.

9 Clawback and Noncompete

Notwithstanding any other provisions of this Plan, any Award which is subject to recovery under any law, government regulation, stock exchange listing requirement, or Company policy, will be subject to such deductions and clawback as may be required to be made pursuant to such law, government regulation or stock exchange listing requirement, or any policy adopted by the Company whether pursuant to any such law, government regulation or stock exchange listing requirement or otherwise. In addition and notwithstanding any other provisions of this Plan, any Award shall be subject to such noncompete provisions under the terms of the Agreement or any other agreement or policy adopted by the Company, including, without limitation, any such terms providing for immediate termination and forfeiture of an Award if and when a Participant becomes an employee, agent or principal of a competitor without the express written consent of the Company.

* * * * *

PURCHASE AGREEMENT

PURCHASE AGREEMENT (the "Agreement"), dated as of August 20, 2019, by and between **TONIX PHARMACEUTICALS HOLDING CORP.**, a Nevada corporation, (the "Company"), **LINCOLN PARK CAPITAL FUND, LLC**, an Illinois limited liability company (the "Investor").

WHEREAS:

Subject to the terms and conditions set forth in this Agreement, the Company wishes to sell to the Investor, and the Investor wishes to buy from the Company, up to Fifteen Million Dollars (\$15,000,000) of the Company's common stock, \$0.001 par value per share (the "Common Stock"). The shares of Common Stock to be purchased hereunder are referred to herein as the "Purchase Shares."

NOW THEREFORE, in consideration of the mutual covenants contained in this Agreement, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Company and the Investor hereby agree as follows:

1. CERTAIN DEFINITIONS.

For purposes of this Agreement, the following terms shall have the following meanings:

(a) "Accelerated Purchase Date" means, with respect to any Accelerated Purchase made pursuant to Section 2(b) hereof, the Business Day immediately following the applicable Purchase Date with respect to the corresponding Regular Purchase referred to in clause (i) of the second sentence of Section 2(b) hereof.

(b) "Accelerated Purchase Floor Price" means \$0.50, which shall be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction and, effective upon the consummation of any such reorganization, recapitalization, non-cash dividend, stock split or other similar transaction, the Accelerated Purchase Floor Price shall mean the lower of (i) the adjusted price and (ii) \$0.50.

(c) "Accelerated Purchase Minimum Price Threshold" means, with respect to any Accelerated Purchase made pursuant to Section 2(b) hereof, the minimum per share price threshold set forth in the applicable Accelerated Purchase Notice.

(d) "Accelerated Purchase Notice" means, with respect to an Accelerated Purchase made pursuant to Section 2(b) hereof, an irrevocable written notice from the Company to the Investor directing the Investor to purchase the number of Purchase Shares specified by the Company therein as the Accelerated Purchase Share Amount to be purchased by the Investor (such specified Accelerated Purchase Share Amount subject to adjustment in accordance with Section 2(b) hereof as necessary to give effect to the Purchase Share amount limitations applicable to such Accelerated Purchase Share Amount as set forth in this Agreement) at the applicable Accelerated Purchase Price on the applicable Accelerated Purchase Date for such Accelerated Purchase.

(e) "Accelerated Purchase Price" means, with respect to an Accelerated Purchase made pursuant to Section 2(b) hereof, the lower of (i) ninety-six percent (96%) of the VWAP for the period beginning at 9:30:01 a.m., Eastern time, on the applicable Accelerated Purchase Date, or such other time publicly announced by Principal Market as the official open (or commencement) of trading on the Principal Market on such applicable Accelerated Purchase Date (the "Accelerated Purchase Commencement Time"), and ending at the earliest of (A) 4:00:00 p.m., Eastern time, on such applicable Accelerated Purchase Date, or such other time publicly announced by Principal Market as the official close of trading on the Principal Market on such applicable Accelerated Purchase Date, (B) such time, from and after the Accelerated Purchase Commencement Time for such Accelerated Purchase, that total number (or volume) of shares of Common Stock traded on the Principal Market has exceeded the applicable Accelerated Purchase Share Volume Maximum, and (C) such time, from and after the Accelerated Purchase Commencement Time for such Accelerated Purchase, that the Sale Price has fallen below the applicable Accelerated Purchase Minimum Price Threshold (such earliest of (i)(A), (i)(B) and (i)(C) above, the "Accelerated Purchase Termination Time"), and (ii) the Closing Sale Price of the Common Stock on such applicable Accelerated Purchase Date (to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction).

(f) “Accelerated Purchase Share Amount” means, with respect to an Accelerated Purchase made pursuant to Section 2(b) hereof, the number of Purchase Shares directed by the Company to be purchased by the Investor in an Accelerated Purchase Notice, which number of Purchase Shares shall not exceed the lesser of (i) 300% of the number of Purchase Shares directed by the Company to be purchased by the Investor pursuant to the corresponding Regular Purchase Notice for the corresponding Regular Purchase referred to in clause (i) of the second sentence of Section 2(b) hereof (subject to the Purchase Share limitations contained in Section 2(a) hereof) and (ii) an amount equal to (A) the Accelerated Purchase Share Percentage multiplied by (B) the total number (or volume) of shares of Common Stock traded on the Principal Market during the period on the applicable Accelerated Purchase Date beginning at the Accelerated Purchase Commencement Time for such Accelerated Purchase and ending at the Accelerated Purchase Termination Time for such Accelerated Purchase.

(g) “Accelerated Purchase Share Percentage” means, with respect to an Accelerated Purchase made pursuant to Section 2(b) hereof, thirty percent (30%).

(h) “Accelerated Purchase Share Volume Maximum” means, with respect to an Accelerated Purchase made pursuant to Section 2(b) hereof, a number of shares of Common Stock equal to (i) the number of Purchase Shares specified by the Company in the applicable Accelerated Purchase Notice as the Accelerated Purchase Share Amount to be purchased by the Investor in such Accelerated Purchase, divided by (ii) the Accelerated Purchase Share Percentage (to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction).

(i) “Additional Accelerated Purchase Date” means, with respect to an Additional Accelerated Purchase made pursuant to Section 2(c) hereof, the Business Day (i) that is the Accelerated Purchase Date with respect to the corresponding Accelerated Purchase referred to in clause (i) of the proviso in the second sentence of Section 2(c) hereof and (ii) on which the Investor receives, prior to 1:00 p.m., Eastern time, on such Business Day, a valid Additional Accelerated Purchase Notice for such Additional Accelerated Purchase in accordance with this Agreement.

(j) “Additional Accelerated Purchase Floor Price” means \$0.50, which shall be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction and, effective upon the consummation of any such reorganization, recapitalization, non-cash dividend, stock split or other similar transaction, the Additional Accelerated Purchase Floor Price shall mean the lower of (i) the adjusted price and (ii) \$0.50.

(k) “Additional Accelerated Purchase Minimum Price Threshold” means, with respect to an Additional Accelerated Purchase made pursuant to Section 2(c) hereof, the minimum per share price threshold set forth in the applicable Additional Accelerated Purchase Notice.

(l) “Additional Accelerated Purchase Notice” means, with respect to an Additional Accelerated Purchase made pursuant to Section 2(c) hereof, an irrevocable written notice from the Company to the Investor directing the Investor to purchase the number of Purchase Shares specified by the Company therein as the Additional Accelerated Purchase Share Amount to be purchased by the Investor (such specified Additional Accelerated Purchase Share Amount subject to adjustment in accordance with Section 2(c) hereof as necessary to give effect to the Purchase Share amount limitations applicable to such Additional Accelerated Purchase Share Amount as set forth in this Agreement) at the applicable Additional Accelerated Purchase Price on the applicable Additional Accelerated Purchase Date for such Additional Accelerated Purchase.

(m) “Additional Accelerated Purchase Price” means, with respect to an Additional Accelerated Purchase made pursuant to Section 2(c) hereof, the lower of (i) ninety-six percent (96%) of the VWAP for the period on the applicable Additional Accelerated Purchase Date, beginning at the latest of (A) the applicable Accelerated Purchase Termination Time with respect to the corresponding Accelerated Purchase referred to in clause (i) of the proviso in the second sentence of Section 2(c) hereof on such Additional Accelerated Purchase Date, (B) the applicable Additional Accelerated Purchase Termination Time with respect to the most recently completed prior Additional Accelerated Purchase on such Additional Accelerated Purchase Date, as applicable, and (C) the time at which all Purchase Shares subject to all prior Accelerated Purchases and Additional Accelerated Purchases (as applicable), including, without limitation, those that have been effected on the same Business Day as the applicable Additional Accelerated Purchase Date with respect to which the applicable Additional Accelerated Purchase relates, have theretofore been received by the Investor as DWAC Shares in accordance with this Agreement (such latest of (i)(A), (i)(B) and (i)(C) above, the “Additional Accelerated Purchase Commencement Time”), and ending at the earliest of (X) 4:00 p.m., Eastern time, on such Additional Accelerated Purchase Date, or such other time publicly announced by Principal Market as the official close of trading on the Principal Market on such Additional Accelerated Purchase Date, (Y) such time, from and after the Additional Accelerated Purchase Commencement Time for such Additional Accelerated Purchase, that total number (or volume) of shares of Common Stock traded on the Principal Market has exceeded the applicable Additional Accelerated Purchase Share Volume Maximum, and (Z) such time, from and after the Additional Accelerated Purchase Commencement Time for such Additional Accelerated Purchase, that the Sale Price has fallen below the applicable Additional Accelerated Purchase Minimum Price Threshold (such earliest of (i)(X), (i)(Y) and (i)(Z) above, the “Additional Accelerated Purchase Termination Time”), and (ii) the Closing Sale Price of the Common Stock on such Additional Accelerated Purchase Date (to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction).

(n) “Additional Accelerated Purchase Share Amount” means, with respect to an Additional Accelerated Purchase made pursuant to Section 2(c) hereof, the number of Purchase Shares directed by the Company to be purchased by the Investor on an Additional Accelerated Purchase Notice, which number of Purchase Shares shall not exceed the lesser of (i) 300% of the number of Purchase Shares directed by the Company to be purchased by the Investor pursuant to the corresponding Regular Purchase Notice for the corresponding Regular Purchase referred to in clause (i) of the proviso in the second sentence of Section 2(c) hereof (subject to the Purchase Share limitations contained in Section 2(a) hereof) and (ii) an amount equal to (A) the Additional Accelerated Purchase Share Percentage multiplied by (B) the total number (or volume) of shares of Common Stock traded on the Principal Market during the period on the applicable Additional Accelerated Purchase Date beginning at the Additional Accelerated Purchase Commencement Time for such Additional Accelerated Purchase and ending at the Additional Accelerated Purchase Termination Time for such Additional Accelerated Purchase.

(o) “Additional Accelerated Purchase Share Percentage” means, with respect to an Additional Accelerated Purchase made pursuant to Section 2(c) hereof, thirty percent (30%).

(p) “Additional Accelerated Purchase Share Volume Maximum” means, with respect to an Additional Accelerated Purchase made pursuant to Section 2(c) hereof, a number of shares of Common Stock equal to (i) the number of Purchase Shares specified by the Company in the applicable Additional Accelerated Purchase Notice as the Additional Accelerated Purchase Share Amount to be purchased by the Investor in such Additional Accelerated Purchase, divided by (ii) the Additional Accelerated Purchase Share Percentage (to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction).

(q) “Alternate Adjusted Regular Purchase Share Limit” means, with respect to a Regular Purchase made pursuant to Section 2(a) hereof, the maximum number of Purchase Shares which, taking into account the applicable per share Purchase Price therefor calculated in accordance with this Agreement, would enable the Company to deliver to the Investor, on the applicable Purchase Date for such Regular Purchase, a Regular Purchase Notice for a Purchase Amount equal to, or as closely approximating without exceeding, One Hundred Thousand Dollars (\$100,000).

(r) “Available Amount” means, initially, Fifteen Million Dollars (\$15,000,000) in the aggregate, which amount shall be reduced by the Purchase Amount each time the Investor purchases Purchase Shares pursuant to Section 2 hereof.

(s) “Average Price” means a price per Purchase Share (rounded to the nearest tenth of a cent) equal to the quotient obtained by dividing (i) the aggregate gross purchase price paid by the Investor for all Purchase Shares purchased pursuant to this Agreement, by (ii) the aggregate number of Purchase Shares issued pursuant to this Agreement.

(t) “Bankruptcy Law” means Title 11, U.S. Code, or any similar federal or state law for the relief of debtors.

(u) “Base Price” means a price per Purchase Share equal to the sum of (i) the Signing Market Price and (ii) \$0.0967 (subject to adjustment for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction that occurs on or after the date of this Agreement).

(v) “Business Day” means any day on which the Principal Market is open for trading, including any day on which the Principal Market is open for trading for a period of time less than the customary time.

(w) “Closing Sale Price” means, for any security as of any date, the last closing sale price for such security on the Principal Market as reported by the Principal Market.

(x) “Confidential Information” means any information disclosed by either party to the other party, either directly or indirectly, in writing, orally or by inspection of tangible objects (including, without limitation, documents, prototypes, samples, plant and equipment), which is designated as “Confidential,” “Proprietary” or some similar designation. Information communicated orally shall be considered Confidential Information if such information is confirmed in writing as being Confidential Information within ten (10) Business Days after the initial disclosure. Confidential Information may also include information disclosed to a disclosing party by third parties. Confidential Information shall not, however, include any information which (i) was publicly known and made generally available in the public domain prior to the time of disclosure by the disclosing party; (ii) becomes publicly known and made generally available after disclosure by the disclosing party to the receiving party through no action or inaction of the receiving party; (iii) is already in the possession of the receiving party without confidential restriction at the time of disclosure by the disclosing party as shown by the receiving party’s files and records immediately prior to the time of disclosure; (iv) is obtained by the receiving party from a third party without a breach of such third party’s obligations of confidentiality; (v) is independently developed by the receiving party without use of or reference to the disclosing party’s Confidential Information, as shown by documents and other competent evidence in the receiving party’s possession; or (vi) is required by law to be disclosed by the receiving party, provided that the receiving party gives the disclosing party prompt written notice of such requirement prior to such disclosure and assistance in obtaining an order protecting the information from public disclosure.

(y) “Custodian” means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

(z) “DTC” means The Depository Trust Company, or any successor performing substantially the same function for the Company.

(aa) “DWAC Shares” means shares of Common Stock that are (i) issued in electronic form, (ii) freely tradable and transferable and without restriction on resale and (iii) timely credited by the Company to the Investor’s or its designee’s specified Deposit/Withdrawal at Custodian (DWAC) account with DTC under its Fast Automated Securities Transfer (FAST) Program, or any similar program hereafter adopted by DTC performing substantially the same function.

(bb) “Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(cc) “Fully Adjusted Regular Purchase Share Limit” means, with respect to any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction from and after the date of this Agreement, the Regular Purchase Share Limit (as defined in Section 2(a) hereof) in effect on the applicable date of determination, after giving effect to the full proportionate adjustment thereto made pursuant to Section 2(a) hereof for or in respect of such reorganization, recapitalization, non-cash dividend, stock split or other similar transaction.

(dd) “Material Adverse Effect” means any material adverse effect on (i) the enforceability of any Transaction Document, (ii) the results of operations, assets, business or financial condition of the Company and its Subsidiaries, taken as a whole, other than any material adverse effect that resulted primarily from (A) any change in the United States or foreign economies or securities or financial markets in general that does not have a disproportionate effect on the Company and its Subsidiaries, taken as a whole, (B) any change that generally affects the industry in which the Company and its Subsidiaries operate that does not have a disproportionate effect on the Company and its Subsidiaries, taken as a whole, (C) any change arising in connection with earthquakes, hostilities, acts of war, sabotage or terrorism or military actions or any escalation or material worsening of any such hostilities, acts of war, sabotage or terrorism or military actions existing as of the date hereof, (D) any action taken by the Investor, its affiliates or its or their successors and assigns with respect to the transactions contemplated by this Agreement, (E) the effect of any change in applicable laws or accounting rules that does not have a disproportionate effect on the Company and its Subsidiaries, taken as a whole, or (F) any change resulting from compliance with terms of this Agreement or the consummation of the transactions contemplated by this Agreement, or (iii) the Company’s ability to perform in any material respect on a timely basis its obligations under any Transaction Document to be performed as of the date of determination.

(ee) “Maturity Date” means the first day of the month immediately following the thirty (30) month anniversary of the Commencement Date.

(ff) “PEA Period” means the period commencing at 9:30 a.m., Eastern time, on the fifth (5th) Business Day immediately prior to the filing of any post-effective amendment to the Registration Statement (as defined herein) or New Registration Statement (as such term is defined in the Registration Rights Agreement), and ending at 9:30 a.m., Eastern time, on the Business Day immediately following, the effective date of any post-effective amendment to the Registration Statement (as defined herein) or New Registration Statement (as such term is defined in the Registration Rights Agreement).

(gg) “Person” means an individual or entity including but not limited to any limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization and a government or any department or agency thereof.

(hh) “Principal Market” means The Nasdaq Global Market (or any nationally recognized successor thereto); provided however, that in the event the Company’s Common Stock is ever listed or traded on The Nasdaq Capital Market, The Nasdaq Global Select Market, the New York Stock Exchange, the NYSE American, the NYSE Arca or the OTC Bulletin Board (it being understood that as used herein “OTC Bulletin Board” shall also mean any successor or comparable market quotation system or exchange to the OTC Bulletin Board such as the OTCQX and OTCQB operated by the OTC Markets Group, Inc.), then the “Principal Market” shall mean such other market or exchange on which the Company’s Common Stock is then listed or traded or any successor thereto.

(ii) “Purchase Amount” means, with respect to any Regular Purchase, any Accelerated Purchase, any Additional Accelerated Purchase or any Tranche Purchase made hereunder, as applicable, the portion of the Available Amount to be purchased by the Investor pursuant to Section 2 hereof.

(jj) “Purchase Date” means, with respect to a Regular Purchase made pursuant to Section 2(a) hereof, the Business Day on which the Investor receives, after 4:00 p.m., Eastern time, but prior to 5:00 p.m., Eastern time, on such Business Day, a valid Regular Purchase Notice for such Regular Purchase in accordance with this Agreement.

(kk) “Purchase Price” means, with respect to any Regular Purchase made pursuant to Section 2(a) hereof, the lower of: (i) the lowest Sale Price on the applicable Purchase Date for such Regular Purchase and (ii) the arithmetic average of the three (3) lowest Closing Sale Prices for the Common Stock during the ten (10) consecutive Business Days ending on the Business Day immediately preceding such Purchase Date for such Regular Purchase (in each case, to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction that occurs on or after the date of this Agreement).

(ll) “Regular Purchase Notice” means, with respect to any Regular Purchase pursuant to Section 2(a) hereof, an irrevocable written notice from the Company to the Investor, directing the Investor to buy such applicable amount of Purchase Shares at the applicable Purchase Price as specified by the Company therein on the applicable Purchase Date for such Regular Purchase.

(mm) “Sale Price” means any trade price for the shares of Common Stock on the Principal Market as reported by the Principal Market.

(nn) “SEC” means the U.S. Securities and Exchange Commission.

(oo) “Securities” means, collectively, the Purchase Shares and the Commitment Shares.

(pp) “Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

(qq) “Signing Market Price” means \$0.4579, representing the consolidated closing bid price of the Common Stock on The Nasdaq Global Market on the date of this Agreement, which shall be the lower of (i) the closing price of the Common Stock on The Nasdaq Global Market immediately preceding the date of this Agreement or (ii) the average closing price of the Common Stock on The Nasdaq Global Market for the five (5) Business Days immediately preceding the date of this Agreement.

(rr) “Subsidiary” means any Person the Company wholly-owns or controls, or in which the Company, directly or indirectly, owns a majority of the voting stock or similar voting interest, in each case that would be disclosable pursuant to Item 601(b)(21) of Regulation S-K promulgated under the Securities Act.

(ss) “Tranche Purchase Date” means, with respect to a Tranche Purchase made pursuant to Section 2(d) hereof, the Business Day on which the Investor receives, after 4:00 p.m., Eastern time, but prior to 5:00 p.m., Eastern time, on such Business Day, a valid Tranche Purchase Notice that the Investor is to buy Purchase Shares pursuant to Section 2(d) hereof.

(tt) “Tranche Purchase Notice” means, with respect to any Tranche Purchase pursuant to Section 2(d) hereof, an irrevocable written notice from the Company to the Investor directing the Investor to buy such applicable amount of Purchase Shares at the applicable Tranche Purchase Price, calculated in accordance with this Agreement and specified by the Company therein, on the Tranche Purchase Date.

(uu) “Tranche Purchase Price” means, with respect to any Tranche Purchase made pursuant to Section 2(d) hereof, the lower of: (i) \$5.50 per share and (ii) ninety-six percent (96%) of the lower of (A) the lowest Sale Price on the Tranche Purchase Date and (B) the arithmetic average of the three (3) lowest Closing Sale Prices for the Common Stock during the ten (10) consecutive Business Days ending on the Business Day immediately preceding the Tranche Purchase Date (in each case, to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction that occurs on or after the date of this Agreement).

(vv) “Transaction Documents” means, collectively, this Agreement and the schedules and exhibits hereto, the Registration Rights Agreement and the schedules and exhibits thereto, and each of the other agreements, documents, certificates and instruments entered into or furnished by the parties hereto in connection with the transactions contemplated hereby and thereby.

(ww) “Transfer Agent” means vStock Transfer, LLC, or such other Person who is then serving as the transfer agent for the Company in respect of the Common Stock.

(xx) “VWAP” means in respect of an Accelerated Purchase Date and an Additional Accelerated Purchase Date, as applicable, the volume weighted average price of the Common Stock on the Principal Market, as reported on the Principal Market.

2. PURCHASE OF COMMON STOCK.

Subject to the terms and conditions set forth in this Agreement, the Company has the right to sell to the Investor, and the Investor has the obligation to purchase from the Company, Purchase Shares as follows:

(a) Commencement of Regular Sales of Common Stock Upon the satisfaction of all of the conditions set forth in Sections 7 and 8 hereof (the “Commencement” and the date of satisfaction of such conditions the “Commencement Date”) and thereafter, the Company shall have the right, but not the obligation, to direct the Investor, by its delivery to the Investor of a Regular Purchase Notice from time to time, to purchase up to Seventy-Five Thousand (75,000) Purchase Shares, subject to adjustment as set forth below in this Section 2(a) (such maximum number of Purchase Shares, as may be adjusted from time to time, the “Regular Purchase Share Limit”), at the Purchase Price on the Purchase Date (each such purchase a “Regular Purchase”); provided, however, that (i) the Regular Purchase Share Limit shall be increased to One Hundred Thousand (100,000) Purchase Shares, if the Closing Sale Price of the Common Stock on the applicable Purchase Date is not below \$0.50, (ii) the Regular Purchase Share Limit shall be increased to One Hundred Twenty-Five Thousand (125,000) Purchase Shares, if the Closing Sale Price of the Common Stock on the applicable Purchase Date is not below \$1.00, (iii) the Regular Purchase Share Limit shall be increased to One Hundred Fifty Thousand (150,000) Purchase Shares, if the Closing Sale Price of the Common Stock on the applicable Purchase Date is not below \$1.50, and (iv) the Regular Purchase Share Limit shall be increased to One Hundred Seventy-Five Thousand (175,000) Purchase Shares, if the Closing Sale Price of the Common Stock on the applicable Purchase Date is not below \$2.00 (all of which share and dollar amounts shall be appropriately proportionately adjusted for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction; provided that if, after giving effect to the full proportionate adjustment to the Regular Purchase Share Limit therefor, the Fully Adjusted Regular Purchase Share Limit then in effect would preclude the Company from delivering to the Investor a Regular Purchase Notice hereunder for a Purchase Amount (calculated by multiplying (X) the number of Purchase Shares equal to the Fully Adjusted Regular Purchase Share Limit, by (Y) the Purchase Price per Purchase Share covered by such Regular Purchase Notice on the applicable Purchase Date therefor) equal to or greater than One Hundred Thousand Dollars (\$100,000), the Regular Purchase Share Limit for such Regular Purchase Notice shall not be fully adjusted to equal the applicable Fully Adjusted Regular Purchase Share Limit, but rather the Regular Purchase Share Limit for such Regular Purchase Notice shall be adjusted to equal the applicable Alternate Adjusted Regular Purchase Share Limit as of the applicable Purchase Date for such Regular Purchase Notice); and provided, further, however, that the Investor’s committed obligation under any single Regular Purchase, other than any Regular Purchase with respect to which an Alternate Adjusted Regular Purchase Share Limit shall apply, shall not exceed One Million Dollars (\$1,000,000). If the Company delivers any Regular Purchase Notice for a Purchase Amount in excess of the limitations contained in the immediately preceding sentence, such Regular Purchase Notice shall be void *ab initio* to the extent of the amount by which the number of Purchase Shares set forth in such Regular Purchase Notice exceeds the number of Purchase Shares which the Company is permitted to include in such Purchase Notice in accordance herewith, and the Investor shall have no obligation to purchase such excess Purchase Shares in respect of such Regular Purchase Notice; provided, however, that the Investor shall remain obligated to purchase the number of Purchase Shares which the Company is permitted to include in such Regular Purchase Notice. The Company may deliver a Regular Purchase Notice to the Investor as often as every Business Day, so long as the Company has not failed to deliver Purchase Shares for the most recent prior Regular Purchase. Notwithstanding the foregoing, the Company shall not deliver any Regular Purchase Notices during the PEA Period.

(b) Accelerated Purchases. Subject to the terms and conditions of this Agreement, from and after the Commencement Date, in addition to purchases of Purchase Shares as described in Section 2(a) above, the Company shall also have the right, but not the obligation, to direct the Investor, by its delivery to the Investor of an Accelerated Purchase Notice from time to time in accordance with this Agreement, to purchase the applicable Accelerated Purchase Share Amount at the Accelerated Purchase Price on the Accelerated Purchase Date therefor in accordance with this Agreement (each such purchase, an “Accelerated Purchase”). The Company may deliver an Accelerated Purchase Notice to the Investor only on a Purchase Date on which (i) the Company also properly submitted a Regular Purchase Notice providing for a Regular Purchase of a number of Purchase Shares not less than the Regular Purchase Share Limit then in effect on such Purchase Date in accordance with this Agreement (including, without limitation, giving effect to any automatic increase to the Regular Purchase Share Limit as a result of the Closing Sale Price of the Common Stock exceeding certain thresholds set forth in Section 2(a) above on such Purchase Date and any other adjustments to the Regular Purchase Share Limit, in each case pursuant to Section 2(a) above), (ii) if all Purchase Shares for all prior Regular Purchases, Accelerated Purchases, Tranche Purchases and Additional Accelerated Purchases, including, without limitation, those that have been effected on the same Business Day as the applicable Accelerated Purchase Date, have theretofore been received by the Investor as DWAC Shares in accordance with this Agreement and (iii) the Closing Sale Price of the Common Stock is not less than the Accelerated Purchase Floor Price. If the Company delivers any Accelerated Purchase Notice directing the Investor to purchase an amount of Purchase Shares that exceeds the Accelerated Purchase Share Amount that the Company is then permitted to include in such Accelerated Purchase Notice, such Accelerated Purchase Notice shall be void *ab initio* to the extent of the amount by which the number of Purchase Shares set forth in such Accelerated Purchase Notice exceeds the Accelerated Purchase Share Amount that the Company is then permitted to include in such Accelerated Purchase Notice (which shall be confirmed in an Accelerated Purchase Confirmation), and the Investor shall have no obligation to purchase such excess Purchase Shares in respect of such Accelerated Purchase Notice; provided, however, that the Investor shall remain obligated to purchase the Accelerated Purchase Share Amount which the Company is permitted to include in such Accelerated Purchase Notice. Within one (1) Business Day after completion of each Accelerated Purchase Date for an Accelerated Purchase, the Investor will provide to the Company a written confirmation of such Accelerated Purchase setting forth the applicable Accelerated Purchase Share Amount and Accelerated Purchase Price for such Accelerated Purchase (each, an “Accelerated Purchase Confirmation”). Notwithstanding the foregoing, the Company shall not deliver any Accelerated Purchase Notices during the PEA Period.

(c) Additional Accelerated Purchases. Subject to the terms and conditions of this Agreement, beginning one (1) Business Day following the Commencement Date and thereafter, in addition to purchases of Purchase Shares as described in Section 2(a) and Section 2(b) above, the Company shall also have the right, but not the obligation, to direct the Investor, by its timely delivery to the Investor of an Additional Accelerated Purchase Notice on an Additional Accelerated Purchase Date in accordance with this Agreement, to purchase the applicable Additional Accelerated Purchase Share Amount at the applicable Additional Accelerated Purchase Price therefor in accordance with this Agreement (each such purchase, an “Additional Accelerated Purchase”). The Company may deliver multiple Additional Accelerated Purchase Notices to the Investor on an Additional Accelerated Purchase Date; provided, however, that the Company may deliver an Additional Accelerated Purchase Notice to the Investor only (i) on a Business Day that is also the Accelerated Purchase Date for an Accelerated Purchase with respect to which the Company properly submitted to the Investor an Accelerated Purchase Notice in accordance with this Agreement on the applicable Purchase Date for a Regular Purchase of a number of Purchase Shares not less than the Regular Purchase Share Limit then in effect in accordance with this Agreement (including, without limitation, giving effect to any automatic increase to the Regular Purchase Share Limit as a result of the Closing Sale Price of the Common Stock exceeding certain thresholds set forth in Section 2(a) above on such Purchase Date and any other adjustments to the Regular Purchase Share Limit, in each case pursuant to Section 2(a) above), (ii) if the Closing Sale Price of the Common Stock on the Business Day immediately preceding the Business Day on which such Additional Accelerated Purchase Notice is delivered is not less than the Additional Accelerated Purchase Floor Price, and (iii) if all Purchase Shares subject to all prior Regular Purchases, Accelerated Purchases and Additional Accelerated Purchases, including, without limitation, those that have been effected on the same Business Day as the applicable Additional Accelerated Purchase Date with respect to which the applicable Additional Accelerated Purchase relates, and, if the Tranche Purchase has occurred prior thereto, all Purchase Shares subject to the Tranche Purchase, in each case have theretofore been received by the Investor as DWAC Shares in accordance with this Agreement. If the Company delivers any Additional Accelerated Purchase Notice directing the Investor to purchase an amount of Purchase Shares that exceeds the Additional Accelerated Purchase Share Amount that the Company is then permitted to include in such Additional Accelerated Purchase Notice, such Additional Accelerated Purchase Notice shall be void *ab initio* to the extent of the amount by which the number of Purchase Shares set forth in such Additional Accelerated Purchase Notice exceeds the Additional Accelerated Purchase Share Amount that the Company is then permitted to include in such Additional Accelerated Purchase Notice (which shall be confirmed in an Additional Accelerated Purchase Confirmation), and the Investor shall have no obligation to purchase such excess Purchase Shares in respect of such Additional Accelerated Purchase Notice; provided, however, that the Investor shall remain obligated to purchase the Additional Accelerated Purchase Share Amount which the Company is permitted to include in such Additional Accelerated Purchase Notice. Within one (1) Business Day after completion of each Additional Accelerated Purchase Date, the Investor will provide to the Company a written confirmation of each Additional Accelerated Purchase on such Additional Accelerated Purchase Date setting forth the applicable Additional Accelerated Purchase Share Amount and Additional Accelerated Purchase Price for each such Additional Accelerated Purchase on such Additional Accelerated Purchase Date (each, an “Additional Accelerated Purchase Confirmation”). Notwithstanding the foregoing, the Company shall not deliver any Additional Accelerated Purchase Notices during the PEA Period.

(d) Tranche Purchases. Subject to the terms and conditions of this Agreement, from and after the Commencement Date, in addition to purchases of Purchase Shares as described in Section 2(a), Section 2(b) and Section 2(c) above, the Company shall also have the right, but not the obligation, to direct the Investor, by the Company's delivery to the Investor of a Tranche Purchase Notice on a Tranche Purchase Date in accordance with this Agreement, and the Investor thereupon shall have the obligation, to buy the amount of Purchase Shares as specified by the Company therein (subject to the limitations below) at the Tranche Purchase Price on the Tranche Purchase Date (each such purchase, a "Tranche Purchase"); provided, however, that (i) the Company may deliver a Tranche Purchase Notice to the Investor only on a Tranche Purchase Date on which the Closing Sale Price of the Common Stock is not below \$1.00 (to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction), (ii) the Company may deliver a Tranche Purchase Notice to the Investor only if at least fifteen (15) Business Days have passed since the most recent Tranche Purchase was completed, (iii) the Investor's committed obligation under any single Tranche Purchase shall not exceed Four Hundred Thousand Dollars (\$400,000), and (iv) the Investor's committed obligation under all Tranche Purchases shall not exceed Two Million Dollars (\$2,000,000) in the aggregate. If the Company delivers the Tranche Purchase Notice for a Tranche Purchase Amount in excess of the limitations contained in this Section 2(d), such Tranche Purchase Notice shall be void *ab initio* to the extent of the amount by which the number of Tranche Purchase Shares set forth in such Tranche Purchase Notice exceeds the number of Tranche Purchase Shares which the Company is permitted to include in such Tranche Purchase Notice in accordance herewith, and the Investor shall have no obligation to purchase such excess Purchase Shares in respect of such Tranche Purchase Notice; provided that the Investor shall remain obligated to purchase the number of Tranche Purchase Shares which the Company is permitted to include in such Tranche Purchase Notice. Notwithstanding the foregoing, the Company shall not deliver any Tranche Purchase Notice during the PEA Period.

(e) Payment for Purchase Shares. For each Regular Purchase and each Tranche Purchase, the Investor shall pay to the Company an amount equal to the Purchase Amount with respect to such Regular Purchase and Tranche Purchase, respectively, as full payment for such Purchase Shares via wire transfer of immediately available funds on the same Business Day that the Investor receives such Purchase Shares, if such Purchase Shares are received by the Investor before 1:00 p.m., Eastern time, or, if such Purchase Shares are received by the Investor after 1:00 p.m., Eastern time, the next Business Day. For each Accelerated Purchase and each Additional Accelerated Purchase, the Investor shall pay to the Company an amount equal to the Purchase Amount with respect to such Accelerated Purchase and Additional Accelerated Purchase, respectively, as full payment for such Purchase Shares via wire transfer of immediately available funds on the third Business Day following the date that the Investor receives such Purchase Shares. If the Company or the Transfer Agent shall fail for any reason or for no reason to electronically transfer any Purchase Shares as DWAC Shares in respect of a Regular Purchase, an Accelerated Purchase, an Additional Accelerated Purchase or a Tranche Purchase (as applicable) within two (2) Business Days following the receipt by the Company of the Purchase Price, Accelerated Purchase Price, Additional Accelerated Purchase Price and Tranche Purchase Price, respectively, therefor in compliance with this Section 2(e), and if on or after such Business Day the Investor purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by the Investor of such Purchase Shares that the Investor anticipated receiving from the Company in respect of such Regular Purchase, Accelerated Purchase, Additional Accelerated Purchase or Tranche Purchase (as applicable), then the Company shall, within two (2) Business Days after the Investor's request, either (i) pay cash to the Investor in an amount equal to the Investor's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased (the "Cover Price"), at which point the Company's obligation to deliver such Purchase Shares as DWAC Shares shall terminate, or (ii) promptly honor its obligation to deliver to the Investor such Purchase Shares as DWAC Shares and pay cash to the Investor in an amount equal to the excess (if any) of the Cover Price over the total Purchase Amount paid by the Investor pursuant to this Agreement for all of the Purchase Shares to be purchased by the Investor in connection with such Regular Purchase, Accelerated Purchase, Additional Accelerated Purchase and Tranche Purchase (as applicable). The Company shall not issue any fraction of a share of Common Stock upon any Regular Purchase, Accelerated Purchase, Additional Accelerated Purchase or Tranche Purchase. If the issuance would result in the issuance of a fraction of a share of Common Stock, the Company shall round such fraction of a share of Common Stock up or down to the nearest whole share. All payments made under this Agreement shall be made in lawful money of the United States of America or wire transfer of immediately available funds to such account as the Company may from time to time designate by written notice in accordance with the provisions of this Agreement. Whenever any amount expressed to be due by the terms of this Agreement is due on any day that is not a Business Day, the same shall instead be due on the next succeeding day that is a Business Day.

(f) Compliance with Rules of Principal Market.

(i) Exchange Cap. Subject to Section 2(f)(ii) below, the Company shall not issue or sell any shares of Common Stock pursuant to this Agreement, and the Investor shall not purchase or acquire any shares of Common Stock pursuant to this Agreement, to the extent that after giving effect thereto, the aggregate number of shares of Common Stock that would be issued pursuant to this Agreement and the transactions contemplated hereby would be equal or greater to 3,070,886 shares of Common Stock, representing 19.99% of the shares of Common Stock outstanding on the date of this Agreement (which number of shares shall be reduced, on a share-for-share basis, by the number of shares of Common Stock issued or issuable pursuant to any transaction or series of transactions that may be aggregated with the transactions contemplated by this Agreement under applicable rules of The Nasdaq Global Market or any other Principal Market on which the Common Stock may be listed or quoted) (the "Exchange Cap"), unless and until the Company elects to solicit stockholder approval of the issuance of Common Stock as contemplated by this Agreement and the stockholders of the Company have in fact approved such issuance in accordance with the applicable rules and regulations of The Nasdaq Global Market, any other Principal Market on which the Common Stock may be listed or quoted, and the Company's Articles of Incorporation, as amended and as in effect on the date hereof (the "Articles of Incorporation"), and the Company's Bylaws, as amended and as in effect on the date hereof (the "Bylaws"). For the avoidance of doubt, the Company may, but shall be under no obligation to, request its stockholders to approve the issuance of Common Stock as contemplated by this Agreement; provided, that if stockholder approval is not obtained in accordance with this Section 2(f)(i), the Exchange Cap shall be applicable for all purposes of this Agreement and the transactions contemplated hereby at all times during the term of this Agreement (except as set forth in Section 2(f)(ii) below).

(ii) At-Market Transaction. Notwithstanding Section 2(f)(i) above and subject to the prior approval of The Nasdaq Global Market or any other Principal Market on which the Common Stock may be listed or quoted (to the extent required), the Exchange Cap shall not be applicable for any purposes of this Agreement and the transactions contemplated hereby, solely to the extent that (and only for so long as) the Average Price shall equal or exceed the Base Price and in accordance with any other applicable rules of The Nasdaq Global Market or any other Principal Market on which the Common Stock may be listed or quoted (it being hereby acknowledged and agreed that the Exchange Cap shall be applicable for all purposes of this Agreement and the transactions contemplated hereby at all other times during the term of this Agreement, unless the stockholder approval referred to in Section 2(f)(i) is obtained).

(iii) General. The Company shall not issue any Securities pursuant to this Agreement if such issuance would reasonably be expected to result in (A) a violation of the Securities Act or (B) a breach of the rules and regulations of the Principal Market. Furthermore, the Company agrees that it shall not issue any Securities pursuant to this Agreement if, at the time of such issuance, (Y) the effectiveness of the Registration Statement registering the Securities has lapsed for any reason (including, without limitation, the issuance of a stop order or similar order) or (Z) the Registration Statement is unavailable for the sale by the Company to the Investor (or the resale by the Investor, as the case may be) of any or all of the Securities to be issued to the Investor under the Transaction Documents. The provisions of this Section 2(f) shall be implemented in a manner otherwise than in strict conformity with the terms hereof only if necessary to ensure compliance with the Securities Act and the rules and regulations of the Principal Market.

(g) Beneficial Ownership Limitation. Notwithstanding anything to the contrary contained in this Agreement, the Company shall not issue or sell, and the Investor shall not purchase or acquire, any shares of Common Stock under this Agreement which, when aggregated with all other shares of Common Stock then beneficially owned by the Investor and its affiliates (as calculated pursuant to Section 13(d) of the Exchange Act and Rule 13d-3 promulgated thereunder), would result in the beneficial ownership by the Investor of more than 4.99% of the then issued and outstanding shares of Common Stock (the "Beneficial Ownership Limitation"). Upon the written or oral request of the Investor, the Company shall promptly (but not later than 24 hours) confirm orally or in writing to the Investor the number of shares of Common Stock then outstanding. The Investor and the Company shall each cooperate in good faith in the determinations required hereby and the application hereof. The Investor's written certification to the Company of the applicability of the Beneficial Ownership Limitation, and the resulting effect thereof hereunder at any time, shall be conclusive with respect to the applicability thereof and such result absent manifest error.

3. INVESTOR'S REPRESENTATIONS AND WARRANTIES.

The Investor represents and warrants to the Company that as of the date hereof and as of the Commencement Date:

(a) Investment Purpose. The Investor is acquiring the Securities as principal for its own account and not with a view to or for distributing or reselling such Securities or any part thereof in violation of the Securities Act or any applicable state securities law, has no present intention of distributing any of such Securities in violation of the Securities Act or any applicable state securities law and has no direct or indirect arrangement or understandings with any other Persons to distribute or regarding the distribution of such Securities in violation of the Securities Act or any applicable state securities law (this representation and warranty not limiting the Investor's right to sell the Securities at any time pursuant to the Registration Statement described herein or otherwise in compliance with applicable federal and state securities laws). The Investor is acquiring the Securities hereunder in the ordinary course of its business.

(b) Accredited Investor Status. The Investor is an "accredited investor" as that term is defined in Rule 501(a)(3) of Regulation D promulgated under the Securities Act.

(c) Reliance on Exemptions. The Investor understands that the Securities are being offered and sold to it in reliance on specific exemptions from the registration requirements of United States federal and state securities laws and that the Company is relying in part upon the truth and accuracy of, and the Investor's compliance with, the representations, warranties, agreements, acknowledgments and understandings of the Investor set forth herein in order to determine the availability of such exemptions and the eligibility of the Investor to acquire the Securities.

(d) Information. The Investor understands that its investment in the Securities involves a high degree of risk. The Investor (i) is able to bear the economic risk of an investment in the Securities including a total loss thereof, (ii) has such knowledge and experience in financial and business matters that it is capable of evaluating the merits and risks of the proposed investment in the Securities and (iii) has had an opportunity to ask questions of and receive answers from the officers of the Company concerning the financial condition and business of the Company and other matters related to an investment in the Securities. Neither such inquiries nor any other due diligence investigations conducted by the Investor or its representatives shall modify, amend or affect the Investor's right to rely on the Company's representations and warranties contained in Section 4 below. The Investor has sought such accounting, legal and tax advice as it has considered necessary to make an informed investment decision with respect to its acquisition of the Securities.

(e) No Governmental Review. The Investor understands that no U.S. federal or state agency or any other government or governmental agency has passed on or made any recommendation or endorsement of the Securities or the fairness or suitability of an investment in the Securities nor have such authorities passed upon or endorsed the merits of the offering of the Securities.

(f) Transfer or Sale. The Investor understands that (i) the Securities may not be offered for sale, sold, assigned or transferred unless (A) registered pursuant to the Securities Act or (B) an exemption exists permitting such Securities to be sold, assigned or transferred without such registration; (ii) any sale of the Securities made in reliance on Rule 144 may be made only in accordance with the terms of Rule 144 and further, if Rule 144 is not applicable, any resale of the Securities under circumstances in which the seller (or the Person through whom the sale is made) may be deemed to be an underwriter (as that term is defined in the Securities Act) may require compliance with some other exemption under the Securities Act or the rules and regulations of the SEC thereunder.

(g) Validity: Enforcement. This Agreement has been duly and validly authorized, executed and delivered on behalf of the Investor and is a valid and binding agreement of the Investor enforceable against the Investor in accordance with its terms, subject as to enforceability to general principles of equity and to applicable bankruptcy, insolvency, reorganization, moratorium, liquidation and other similar laws relating to, or affecting generally, the enforcement of applicable creditors' rights and remedies.

(h) Residency. The Investor is a resident of the State of Illinois.

(i) No Short Selling. The Investor represents and warrants to the Company that at no time prior to the date of this Agreement has any of the Investor, its agents, representatives or affiliates engaged in or effected, in any manner whatsoever, directly or indirectly, any (i) "short sale" (as such term is defined in Rule 200 of Regulation SHO of the Exchange Act) of the Common Stock or (ii) hedging transaction, which establishes a net short position with respect to the Common Stock.

4. REPRESENTATIONS AND WARRANTIES OF THE COMPANY.

The Company represents and warrants to the Investor that, except as set forth in the disclosure schedules attached hereto, which exceptions shall be deemed to be a part of the representations and warranties made hereunder, as of the date hereof and as of the Commencement Date:

(a) Organization and Qualification. The Company and each of its Subsidiaries is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, with the requisite corporate power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any of its Subsidiaries is in violation or default of any of the provisions of its respective certificate or articles of incorporation, bylaws or other organizational or charter documents. Each of the Company and its Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, could not have or reasonably be expected to result in a Material Adverse Effect and no proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification. The Company has no Subsidiaries except as set forth in the SEC Documents (as defined below).

(b) Authorization: Enforcement: Validity. (i) The Company has the requisite corporate power and authority to enter into and perform its obligations under this Agreement and each of the other Transaction Documents, and to issue the Securities in accordance with the terms hereof and thereof, (ii) the execution and delivery of the Transaction Documents by the Company and the consummation by it of the transactions contemplated hereby and thereby, including without limitation, the issuance of the Commitment Shares and the payment of the Commitment Fee (each as defined below in Section 5(e)) and the reservation for issuance and the issuance of the Purchase Shares issuable under this Agreement, have been duly authorized by the Company's Board of Directors and no further consent or authorization is required by the Company, its Board of Directors or its stockholders, (iii) this Agreement has been, and each other Transaction Document shall be on the Commencement Date, duly executed and delivered by the Company and (iv) this Agreement constitutes, and each other Transaction Document upon its execution on behalf of the Company, shall constitute, the valid and binding obligations of the Company enforceable against the Company in accordance with their terms, except as such enforceability may be limited by general principles of equity or applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally, the enforcement of creditors' rights and remedies. The Board of Directors of the Company has approved resolutions substantially in the form set forth in Exhibit B attached hereto (the "Signing Resolutions") to authorize this Agreement, the Registration Rights Agreement and the transactions contemplated hereby and thereby. The Signing Resolutions are valid, in full force and effect and have not been modified or supplemented in any respect. The Company has delivered to the Investor a true and correct copy of a unanimous written consent adopting the Signing Resolutions executed by all of the members of the Board of Directors of the Company. Except as set forth in this Agreement, no other approvals or consents of the Company's Board of Directors, any authorized committee thereof, and/or stockholders is necessary under applicable laws and the Company's Articles of Incorporation and/or Bylaws to authorize the execution and delivery of this Agreement, the Registration Rights Agreement or any of the transactions contemplated hereby or thereby, including, but not limited to, the issuance of the Securities.

(c) Capitalization. As of the date hereof, the authorized capital stock of the Company is set forth in the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019. Except as disclosed in the SEC Documents (as defined below), (i) no shares of the Company's capital stock are subject to preemptive rights or any other similar rights or any liens or encumbrances suffered or permitted by the Company, (ii) there are no outstanding debt securities, (iii) there are no outstanding options, warrants, scrip, rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities or rights convertible into, any shares of capital stock of the Company or any of its Subsidiaries, or contracts, commitments, understandings or arrangements by which the Company or any of its Subsidiaries is or may become bound to issue additional shares of capital stock of the Company or any of its Subsidiaries or options, warrants, scrip, rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities or rights convertible into, any shares of capital stock of the Company or any of its Subsidiaries, (iv) there are no agreements or arrangements under which the Company or any of its Subsidiaries is obligated to register the sale of any of their securities under the Securities Act (except the Registration Rights Agreement), (v) there are no outstanding securities or instruments of the Company or any of its Subsidiaries which contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any of its Subsidiaries is or may become bound to redeem a security of the Company or any of its Subsidiaries, (vi) there are no securities or instruments containing anti-dilution or similar provisions that will be triggered by the issuance of the Securities as described in this Agreement and (vii) the Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. The Company has furnished to the Investor true and correct copies of the Company's Articles of Incorporation, as amended and as in effect on the date hereof (the "Articles of Incorporation"), and the Company's Bylaws, as amended and as in effect on the date hereof (the "Bylaws"), and summaries of the terms of all securities convertible into or exercisable for Common Stock, if any, and copies of any documents containing the material rights of the holders thereof in respect thereto.

(d) Issuance of Securities. Upon issuance and payment therefor in accordance with the terms and conditions of this Agreement, the Purchase Shares shall be validly issued, fully paid and nonassessable and free from all taxes, liens, charges, restrictions, rights of first refusal and preemptive rights with respect to the issue thereof, with the holders being entitled to all rights accorded to a holder of Common Stock. 5,000,000 shares of Common Stock have been duly authorized and reserved for issuance upon purchase under this Agreement as Purchase Shares. Upon issuance in accordance with the terms and conditions of this Agreement, the Commitment Shares shall be validly issued, fully paid and nonassessable and free from all taxes, liens, charges, restrictions, rights of first refusal and preemptive rights with respect to the issue thereof, with the holders being entitled to all rights accorded to a holder of Common Stock.

(e) No Conflicts. The execution, delivery and performance of the Transaction Documents by the Company and the consummation by the Company of the transactions contemplated hereby and thereby (including, without limitation, the issuance of the Commitment Shares, the payment of the Commitment Fee and the reservation for issuance and issuance of the Purchase Shares) will not (i) result in a violation of the Articles of Incorporation, any Certificate of Designations, Preferences and Rights of any outstanding series of preferred stock of the Company or the Bylaws or (ii) conflict with, or constitute a default (or an event which with notice or lapse of time or both would become a default) under, or give to others any rights of termination, amendment, acceleration or cancellation of, any agreement, indenture or instrument to which the Company or any of its Subsidiaries is a party, or result in a violation of any law, rule, regulation, order, judgment or decree (including federal and state securities laws and regulations and the rules and regulations of the Principal Market applicable to the Company or any of its Subsidiaries) or by which any property or asset of the Company or any of its Subsidiaries is bound or affected, except in the case of conflicts, defaults, terminations, amendments, accelerations, cancellations and violations under clause (ii), which would not reasonably be expected to result in a Material Adverse Effect. Neither the Company nor its Subsidiaries is in violation of any term of or in default under its Articles of Incorporation, any Certificate of Designation, Preferences and Rights of any outstanding series of preferred stock of the Company or Bylaws or their organizational charter or bylaws, respectively. Neither the Company nor any of its Subsidiaries is in violation of any term of or is in default under any material contract, agreement, mortgage, indebtedness, indenture, instrument, judgment, decree or order or any statute, rule or regulation applicable to the Company or its Subsidiaries, except for possible conflicts, defaults, terminations or amendments that would not reasonably be expected to have a Material Adverse Effect. The business of the Company and its Subsidiaries is not being conducted, and shall not be conducted, in violation of any law, ordinance, regulation of any governmental entity, except for possible violations, the sanctions for which either individually or in the aggregate would not reasonably be expected to have a Material Adverse Effect. Except as specifically contemplated by this Agreement and as required under the Securities Act or applicable state securities laws and the rules and regulations of the Principal Market, the Company is not required to obtain any consent, authorization or order of, or make any filing or registration with, any court or governmental agency or any regulatory or self-regulatory agency in order for it to execute, deliver or perform any of its obligations under or contemplated by the Transaction Documents in accordance with the terms hereof or thereof. Except as set forth elsewhere in this Agreement, all consents, authorizations, orders, filings and registrations which the Company is required to obtain pursuant to the preceding sentence shall be obtained or effected on or prior to the Commencement Date.

(f) SEC Documents: Financial Statements. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the twelve months preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, being collectively referred to herein as the "SEC Documents"). As of their respective dates, the SEC Documents complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable. None of the SEC Documents, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The financial statements of the Company included in the SEC Documents comply in all material respects with applicable accounting requirements and the rules and regulations of the SEC with respect thereto as in effect at the time of filing. Such financial statements have been prepared in accordance with United States generally accepted accounting principles applied on a consistent basis during the periods involved ("GAAP"), except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments. The SEC has not commenced any enforcement proceedings against the Company or any of its Subsidiaries.

(g) Absence of Certain Changes. Except as disclosed in the SEC Documents, since December 31, 2017, there has been no material adverse change in the business, properties, operations, financial condition or results of operations of the Company or its Subsidiaries. The Company has not taken any steps, and does not currently expect to take any steps, to seek protection pursuant to any Bankruptcy Law nor does the Company or any of its Subsidiaries have any knowledge or reason to believe that its creditors intend to initiate involuntary bankruptcy or insolvency proceedings. The Company is financially solvent and is generally able to pay its debts as they become due.

(h) Absence of Litigation. There is no action, suit, proceeding, inquiry or investigation before or by any court, public board, government agency, self-regulatory organization or body pending or, to the knowledge of the Company or any of its Subsidiaries, threatened against or affecting the Company, the Common Stock or any of the Company's or its Subsidiaries' officers or directors in their capacities as such, which could reasonably be expected to have a Material Adverse Effect.

(i) Acknowledgment Regarding Investor's Status. The Company acknowledges and agrees that the Investor is acting solely in the capacity of arm's length purchaser with respect to the Transaction Documents and the transactions contemplated hereby and thereby. The Company further acknowledges that the Investor is not acting as a financial advisor or fiduciary of the Company (or in any similar capacity) with respect to the Transaction Documents and the transactions contemplated hereby and thereby and any advice given by the Investor or any of its representatives or agents in connection with the Transaction Documents and the transactions contemplated hereby and thereby is merely incidental to the Investor's purchase of the Securities. The Company further represents to the Investor that the Company's decision to enter into the Transaction Documents has been based solely on the independent evaluation by the Company and its representatives and advisors.

(j) No General Solicitation; No Aggregated Offering. Neither the Company, nor any of its affiliates, nor any Person acting on its or their behalf, has engaged in any form of general solicitation or general advertising (within the meaning of Regulation D under the Securities Act) in connection with the offer or sale of the Securities. Neither the Company, nor any of its affiliates, nor any Person acting on 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 require registration of the offer and sale of any of the Securities under the Securities Act, whether through integration with prior offerings or otherwise, or cause this offering of the Securities to be aggregated with prior offerings by the Company in a manner that would require stockholder approval pursuant to the rules of the Principal Market on which any of the securities of the Company are listed or designated. The issuance and sale of the Securities hereunder does not contravene the rules and regulations of the Principal Market.

(k) Intellectual Property Rights. The Company and its Subsidiaries own or possess adequate rights or licenses to use all material trademarks, trade names, service marks, service mark registrations, service names, patents, patent rights, copyrights, inventions, licenses, approvals, governmental authorizations, trade secrets and rights necessary to conduct their respective businesses as now conducted. None of the Company's material trademarks, trade names, service marks, service mark registrations, service names, patents, patent rights, copyrights, inventions, licenses, approvals, governmental authorizations, trade secrets or other intellectual property rights have expired or terminated, or, by the terms and conditions thereof, could expire or terminate within two years from the date of this Agreement. The Company and its Subsidiaries do not have any knowledge of any infringement by the Company or its Subsidiaries of any material trademark, trade name rights, patents, patent rights, copyrights, inventions, licenses, service names, service marks, service mark registrations, trade secret or other similar rights of others, or of any such development of similar or identical trade secrets or technical information by others, and there is no claim, action or proceeding being made or brought against, or to the Company's knowledge, being threatened against, the Company or its Subsidiaries regarding trademark, trade name, patents, patent rights, invention, copyright, license, service names, service marks, service mark registrations, trade secret or other infringement, which could reasonably be expected to have a Material Adverse Effect.

(l) Environmental Laws. The Company and its Subsidiaries (i) are in compliance with any and all applicable foreign, federal, state and local laws and regulations relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants (“Environmental Laws”), (ii) have received all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses and (iii) are in compliance with all terms and conditions of any such permit, license or approval, except where, in each of the three foregoing clauses, the failure to so comply could not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

(m) Title. The Company and its Subsidiaries have good and marketable title in fee simple to all real property owned by them and good and marketable title in all personal property owned by them that is material to the business of the Company and its Subsidiaries, in each case free and clear of all liens, encumbrances and defects (“Liens”) and, except for Liens as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and its Subsidiaries and Liens for the payment of federal, state or other taxes, the payment of which is neither delinquent nor subject to penalties. Any real property and facilities held under lease by the Company and its Subsidiaries are held by them under valid, subsisting and enforceable leases with which the Company and its Subsidiaries are in compliance with such exceptions as are not material and do not interfere with the use made and proposed to be made of such property and buildings by the Company and its Subsidiaries.

(n) Insurance. The Company and each of its Subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as management of the Company believes to be prudent and customary in the businesses in which the Company and its Subsidiaries are engaged. Neither the Company nor any such Subsidiary has been refused any insurance coverage sought or applied for and neither the Company nor any such Subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not materially and adversely affect the condition, financial or otherwise, or the earnings, business or operations of the Company and its Subsidiaries, taken as a whole.

(o) Regulatory Permits. The Company and its Subsidiaries possess all material certificates, authorizations and permits issued by the appropriate federal, state or foreign regulatory authorities necessary to conduct their respective businesses, and neither the Company nor any such Subsidiary has received any notice of proceedings relating to the revocation or modification of any such certificate, authorization or permit.

(p) Tax Status. The Company and each of its Subsidiaries has made or filed all federal and state income and all other material tax returns, reports and declarations required by any jurisdiction to which it is subject (unless and only to the extent that the Company and each of its Subsidiaries has set aside on its books provisions reasonably adequate for the payment of all unpaid and unreported taxes) and has paid all taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations, except those being contested in good faith and has set aside on its books provision reasonably adequate for the payment of all taxes for periods subsequent to the periods to which such returns, reports or declarations apply. There are no unpaid taxes in any material amount claimed to be due by the taxing authority of any jurisdiction, and the officers of the Company know of no basis for any such claim.

(q) Transactions With Affiliates. Except as set forth in the SEC Documents, none of the officers or directors of the Company and, to the knowledge of the Company, none of the employees of the Company is presently a party to any transaction with the Company or any Subsidiary (other than for services as employees, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, or otherwise requiring payments to or from any officer, director or such employee or, to the knowledge of the Company, any entity in which any officer, director, or any such employee has a substantial interest or is an officer, director, trustee or partner, in each case in excess of \$120,000 other than for (i) payment of salary or consulting fees for services rendered, (ii) reimbursement for expenses incurred on behalf of the Company and (iii) other employee benefits, including stock option agreements under any stock option plan of the Company.

(r) Application of Takeover Protections. The Company and its board of directors have taken or will take prior to the Commencement Date all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Articles of Incorporation or the laws of the state of its incorporation which is or could become applicable to the Investor as a result of the transactions contemplated by this Agreement, including, without limitation, the Company's issuance of the Securities and the Investor's ownership of the Securities.

(s) Disclosure. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents that will be timely publicly disclosed by the Company, the Company confirms that neither it nor any other Person acting on its behalf has provided the Investor or its agents or counsel with any information that it believes constitutes or might constitute material, non-public information which is not otherwise disclosed in the Registration Statement or the SEC Documents. The Company understands and confirms that the Investor will rely on the foregoing representation in effecting purchases and sales of securities of the Company. All of the disclosure furnished by or on behalf of the Company to the Investor regarding the Company, its business and the transactions contemplated hereby, including the disclosure schedules to this Agreement, is true and correct in all material respects and does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading. The press releases disseminated by the Company during the twelve months preceding the date of this Agreement taken as a whole do 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 and when made, not misleading. The Company acknowledges and agrees that the Investor neither makes nor has made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Section 3 hereof.

(t) Foreign Corrupt Practices. Neither the Company, nor to the knowledge of the Company, any agent or other Person acting on behalf of the Company, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company (or made by any Person acting on its behalf of which the Company is aware) which is in violation of law, or (iv) violated in any material respect any provision of the Foreign Corrupt Practices Act of 1977, as amended.

(u) DTC Eligibility. The Company, through the Transfer Agent, currently participates in the DTC Fast Automated Securities Transfer (FAST) Program and the Common Stock can be transferred electronically to third parties via the DTC Fast Automated Securities Transfer (FAST) Program.

(v) Sarbanes-Oxley. The Company is in compliance with all provisions of the Sarbanes-Oxley Act of 2002, as amended, which are applicable to it as of the date hereof.

(w) Certain Fees. No brokerage or finder's fees or commissions are or will be payable by the Company to any broker, financial advisor or consultant, finder, placement agent, investment banker, bank or other Person with respect to the transactions contemplated by the Transaction Documents. The Investor shall have no obligation with respect to any fees or with respect to any claims made by or on behalf of other Persons for fees of a type contemplated in this Section 4(w) that may be due in connection with the transactions contemplated by the Transaction Documents.

(x) Investment Company. The Company is not, and immediately after receipt of payment for the Purchase Shares will not be, an "investment company" within the meaning of the Investment Company Act of 1940, as amended.

(y) Listing and Maintenance Requirements. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act, and the Company has taken no action designed to, or which to its knowledge is likely to have the effect of, terminating the registration of the Common Stock pursuant to the Exchange Act nor has the Company received any notification that the SEC is currently contemplating terminating such registration. Except as disclosed in the SEC Documents, the Company has not, in the twelve (12) months preceding the date hereof, received any notice from any Person to the effect that the Company is not in compliance with the listing or maintenance requirements of the Principal Market. The Company is, and has no reason to believe that it will not in the foreseeable future continue to be, in compliance with all such listing and maintenance requirements. The Principal Market has not commenced any delisting proceedings against the Company.

(z) Accountants. The Company's accountants are set forth in the SEC Documents and, to the knowledge of the Company, such accountants are an independent registered public accounting firm as required by the Securities Act.

(aa) No Market Manipulation. The Company has not, and to its knowledge no Person acting on its behalf has, (i) taken, directly or indirectly, any action designed to cause or to result in the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of any of the Securities, (ii) sold, bid for, purchased, or, paid any compensation for soliciting purchases of, any of the Securities, or (iii) paid or agreed to pay to any Person any compensation for soliciting another to purchase any other securities of the Company.

(bb) Shell Company Status. The Company is not currently, and since October 27, 2011, has not been, an issuer identified in Rule 144(i)(1) under the Securities Act and has filed with the SEC current “Form 10 information” (as defined in Rule 144(i)(3) under the Securities Act) at least 12 calendar months prior to the date of this Agreement reflecting its status as an entity that is no longer an issuer identified in Rule 144(i)(1) under the Securities Act.

(cc) No Disqualification Events. None of the Company, any of its predecessors, any affiliated issuer, any director, executive officer, other officer of the Company participating in the offering contemplated hereby, any beneficial owner of 20% or more of the Company’s outstanding voting equity securities, calculated on the basis of voting power, nor any promoter (as that term is defined in Rule 405 under the Securities Act) connected with the Company in any capacity at the time of sale (each, an “Issuer Covered Person”) is subject to any of the “Bad Actor” disqualifications described in Rule 506(d)(1)(i) to (viii) under the Securities Act (a “Disqualification Event”), except for a Disqualification Event covered by Rule 506(d)(2) or (d)(3) under the Securities Act. The Company has exercised reasonable care to determine whether any Issuer Covered Person is subject to a Disqualification Event.

5. COVENANTS.

(a) Filing of Current Report and Registration Statement. The Company agrees that it shall, within the time required under the Exchange Act, file with the SEC a report on Form 8-K relating to the transactions contemplated by, and describing the material terms and conditions of, the Transaction Documents (the “Current Report”). The Company shall also file with the SEC, within twenty (20) Business Days from the date hereof, a new registration statement (the “Registration Statement”) covering only the resale of the Purchase Shares and all of the Commitment Shares, in accordance with the terms of the Registration Rights Agreement between the Company and the Investor, dated as of the date hereof (the “Registration Rights Agreement”). The Company shall permit the Investor to review and comment upon the final pre-filing draft version of the Current Report at least two (2) Business Days prior to its filing with the SEC, and the Company shall give due consideration to all such comments. The Investor shall use its reasonable best efforts to comment upon the final pre-filing draft version of the Current Report within one (1) Business Day from the date the Investor receives it from the Company.

(b) Blue Sky. The Company shall take all such action, if any, as is reasonably necessary in order to obtain an exemption for or to register or qualify (i) the issuance of the Commitment Shares and the issuance and sale of the Purchase Shares to the Investor under this Agreement and (ii) any subsequent resale of the Securities by the Investor, in each case, under applicable securities or “Blue Sky” laws of the states of the United States in such states as is reasonably requested by the Investor from time to time, and shall provide evidence of any such action so taken to the Investor.

(c) Listing/DTC. The Company shall promptly secure the listing of all of the Securities to be issued to the Investor under this Agreement on the Principal Market (subject to official notice of issuance) and upon each other national securities exchange or automated quotation system, if any, upon which the Common Stock is then listed, and shall use commercially reasonable efforts to maintain, so long as any shares of Common Stock shall be so listed, such listing of all such Securities. The Company shall use commercially reasonable efforts to maintain the listing of the Common Stock, including the Securities, on the Principal Market and shall comply in all respects with the Company’s reporting, filing and other obligations under the bylaws or rules and regulations of the Principal Market. Neither the Company nor any of its Subsidiaries shall take any action that would reasonably be expected to result in the delisting or suspension of the Common Stock, including the Securities, on the Principal Market. The Company shall promptly, and in no event later than the following Business Day, provide to the Investor copies of any notices it receives from the Principal Market regarding the continued eligibility of the Common Stock for listing on the Principal Market; provided, however, that the Company shall not be required to provide the Investor copies of any such notice that the Company reasonably believes constitutes material non-public information and the Company would not be required to publicly disclose such notice in any report or statement filed with the SEC under the Exchange Act (including on Form 8-K) or the Securities Act. The Company shall pay all fees and expenses in connection with satisfying its obligations under this Section 5(c). The Company shall take all action necessary to ensure that its Common Stock, including the Securities, can be transferred electronically as DWAC Shares.

(d) Prohibition of Short Sales and Hedging Transactions The Investor agrees that beginning on the date of this Agreement and ending on the date of termination of this Agreement as provided in Section 11, the Investor and its agents, representatives and affiliates shall not in any manner whatsoever enter into or effect, directly or indirectly, any (i) "short sale" (as such term is defined in Rule 200 of Regulation SHO of the Exchange Act) of the Common Stock or (ii) hedging transaction, which establishes a net short position with respect to the Common Stock.

(e) Issuance of Commitment Shares and Payment of Commitment Fee. In consideration for the Investor's execution and delivery of this Agreement, the Company shall (i) cause to be issued to the Investor a total of 355,290 shares of Common Stock (the "Commitment Shares") immediately upon the execution of this Agreement and shall deliver to the Transfer Agent the Irrevocable Transfer Agent Instructions with respect to the issuance of such Commitment Shares and (ii) pay to the Investor immediately upon the execution of this Agreement an amount in cash, by wire transfer of immediately available funds, equal to One Hundred Thousand Dollars (\$100,000) (the "Commitment Fee"). For the avoidance of doubt, all of the Commitment Shares and the Commitment Fee shall be fully earned as of the date of this Agreement, whether or not the Commencement shall occur or any Purchase Shares are purchased by the Investor under this Agreement and irrespective of any subsequent termination of this Agreement.

(f) Due Diligence: Non-Public Information. The Investor shall have the right, from time to time as the Investor may reasonably deem appropriate, and upon providing reasonable advance notice, to perform reasonable due diligence on the Company during normal business hours. The Company and its officers and employees shall provide information and reasonably cooperate with the Investor in connection with any reasonable request by the Investor related to the Investor's due diligence of the Company. Each party hereto agrees not to disclose any Confidential Information of the other party to any third party and shall not use the Confidential Information for any purpose other than in connection with, or in furtherance of, the transactions contemplated hereby. Each party hereto acknowledges that the Confidential Information shall remain the property of the disclosing party and agrees that it shall take all reasonable measures to protect the secrecy of any Confidential Information disclosed by the other party. The Company confirms that neither it nor any other Person acting on its behalf shall provide the Investor or its agents or counsel with any information that constitutes or might constitute material, non-public information, unless a simultaneous public announcement thereof is made by the Company in the manner contemplated by Regulation FD. In the event of a breach of the foregoing covenant by the Company or any Person acting on its behalf (as determined in the reasonable good faith judgment of the Investor), in addition to any other remedy provided herein or in the other Transaction Documents, if the Investor is holding any Securities at the time of the disclosure of material, non-public information, the Investor shall have the right to make a public disclosure, in the form of a press release, public advertisement or otherwise, of such material, non-public information without the prior approval by the Company; provided the Investor shall have first provided notice to the Company that it believes it has received information that constitutes material, non-public information, the Company shall have at least 48 hours to publicly disclose such material, non-public information prior to any such disclosure by the Investor or demonstrate to the Investor in writing why such information does not constitute material, non-public information, and (assuming the Investor and Investor's counsel disagree with the Company's determination) the Company shall have failed to publicly disclose such material, non-public information within such time period. The Investor shall not have any liability to the Company, any of its Subsidiaries, or any of their respective directors, officers, employees, stockholders or agents, for any such disclosure. The Company understands and confirms that the Investor shall be relying on the foregoing covenants in effecting transactions in securities of the Company.

(g) Purchase Records. The Investor and the Company shall each maintain records showing the remaining Available Amount at any given time and the dates and Purchase Amounts for each Regular Purchase, Accelerated Purchase and Additional Purchase or shall use such other method, reasonably satisfactory to the Investor and the Company.

(h) Taxes. The Company shall pay any and all transfer, stamp or similar taxes that may be payable with respect to the issuance and delivery of any shares of Common Stock to the Investor made under this Agreement.

(i) Use of Proceeds. The Company will use the net proceeds from the offering as described in the Registration Statement or the SEC Documents.

(j) Other Transactions. The Company shall not enter into, announce or recommend to its stockholders any agreement, plan, arrangement or transaction in or of which the terms thereof would restrict, materially delay, conflict with or impair the ability or right of the Company to perform its obligations under the Transaction Documents, including, without limitation, the obligation of the Company to deliver the Securities to the Investor in accordance with the terms of the Transaction Documents.

(k) Integration; Aggregation. From and after the date of this Agreement, neither the Company, nor or any of its affiliates will, and the Company shall use its reasonable best efforts to ensure that no Person acting on their behalf will, directly or indirectly, make any offers or sales of any security or solicit any offers to buy any security, under circumstances that would (i) require registration of the offer and sale by the Company to the Investor of any of the Securities under the Securities Act, or (ii) cause this offering of the Securities by the Company to the Investor to be aggregated with other offerings by the Company in a manner that would require stockholder approval pursuant to the rules of the Principal Market on which any of the securities of the Company are listed or designated, unless in the case of this clause (ii), stockholder approval is obtained before the closing of such subsequent transaction in accordance with the rules of such Principal Market.

(l) Limitation on Variable Rate Transactions. From and after the date of this Agreement until the later of (i) the 24-month anniversary of the date of this Agreement or (ii) the 24-month anniversary of the Commencement Date (if the Commencement has occurred), in either case irrespective of any earlier termination of this Agreement, the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents (or a combination of units thereof) involving a Variable Rate Transaction, other than in connection with an Exempt Issuance. The Investor shall be entitled to seek injunctive relief against the Company and its Subsidiaries to preclude any such issuance, which remedy shall be in addition to any right to collect damages, without the necessity of showing economic loss and without any bond or other security being required. “Common Stock Equivalents” means any securities of the Company or its Subsidiaries which entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock. “Variable Rate Transaction” means a transaction in which the Company (i) issues or sells any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive additional shares of Common Stock or Common Stock Equivalents either (A) at a conversion price, exercise price, exchange rate or other price that is based upon and/or varies with the trading prices of or quotations for the Common Stock at any time after the initial issuance of such debt or equity securities (other than pursuant to a customary “cashless exercise” provision), or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock (including, without limitation, any “full ratchet” or “weighted average” anti-dilution provisions), (ii) issues or sells any debt or equity securities, including without limitation, Common Stock or Common Stock Equivalents, either (A) at a price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock, or (B) that is subject to or contains any put, call, redemption, buy-back, price-reset or other similar provision or mechanism (including, without limitation, a “Black-Scholes” put or call right) that provides for the issuance of additional debt or equity securities of the Company or the payment of cash by the Company, or (iii) enters into any agreement, including, but not limited to, an “equity line of credit”, “at-the-market offering” or other continuous offering or similar offering of Common Stock or Common Stock Equivalents, whereby the Company may sell Common Stock or Common Stock Equivalents at a future determined price. “Exempt Issuance” means the issuance of (a) Common Stock or options to employees, officers, directors or vendors of the Company pursuant to any stock or option plan duly adopted for such purpose, by the Board of Directors or a majority of the members of a committee of directors established for such purpose, (b) (1) any Securities issued to the Investor pursuant to this Agreement, (2) any securities issued to the Investor pursuant to any other agreement between the Company and the Investor, (3) any securities issued upon the exercise or exchange of or conversion of any shares of Common Stock or Common Stock Equivalents held by the Investor at any time, or (4) any securities issued upon the exercise or exchange of or conversion of any Common Stock Equivalents issued and outstanding on the date of this Agreement, provided that such securities referred to in this clause (4) have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities, (c) securities issued pursuant to acquisitions or strategic transactions approved by the Board of Directors or a majority of the members of a committee of directors established for such purpose, which acquisitions or strategic transactions can have a Variable Rate Transaction component, provided that any such issuance shall only be to a Person (or to the equity holders of a Person) which is, itself or through its subsidiaries, an operating company or an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities, or (d) up to \$9,500,000 of shares of Common Stock through Cowen Company, LLC, as sales agent, pursuant to the Sales Agreement, dated May 1, 2018, by and between the Company and Cowen and Company, LLC.

6. TRANSFER AGENT INSTRUCTIONS.

(a) On the date of this Agreement, the Company shall issue irrevocable instructions to the Transfer Agent substantially in the form attached hereto as **Exhibit D** to issue the Commitment Shares in accordance with the terms of this Agreement (the "Irrevocable Transfer Agent Instructions"). The certificate(s) or book-entry statement(s) representing the Commitment Shares, except as set forth below, shall bear the following restrictive legend (the "Restrictive Legend"):

THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR APPLICABLE STATE SECURITIES LAWS. THE SECURITIES HAVE BEEN ACQUIRED FOR INVESTMENT AND MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED OR ASSIGNED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR APPLICABLE STATE SECURITIES LAWS, UNLESS SOLD PURSUANT TO: (1) RULE 144 UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR (2) AN OPINION OF HOLDER'S COUNSEL, IN A CUSTOMARY FORM, THAT REGISTRATION IS NOT REQUIRED UNDER SAID ACT OR APPLICABLE STATE SECURITIES LAWS.

(b) On the earlier of (i) the Commencement Date and (ii) such time that the Investor shall request in connection with a sale, assignment, transfer or other disposition of Commitment Shares, provided all conditions of Rule 144 under the Securities Act are met, the Company shall, no later than two (2) Business Days following the delivery by the Investor to the Company or the Transfer Agent of one or more legended certificates or book-entry statements representing Commitment Shares (which certificates or book-entry statements the Investor shall promptly deliver on or prior to the first to occur of the events described in clauses (i) and (ii) of this sentence), as directed by the Investor, issue and deliver (or cause to be issued and delivered) to the Investor, as requested by the Investor, either: (A) a certificate or book-entry statement representing such Commitment Shares that is free from all restrictive and other legends or (B) a number of shares of Common Stock equal to the number of Commitment Shares represented by the certificate(s) or book-entry statement(s) so delivered by the Investor as DWAC Shares. The Company shall take all actions to carry out the intent and accomplish the purposes of the immediately preceding sentence, including, without limitation, delivering all such legal opinions, consents, certificates, resolutions and instructions to the Transfer Agent, and any successor transfer agent of the Company, as may be requested from time to time by the Investor or necessary or desirable to carry out the intent and accomplish the purposes of the immediately preceding sentence. On the Commencement Date, the Company shall issue to the Transfer Agent, and any subsequent transfer agent, (i) irrevocable instructions in the form substantially similar to those used by the Investor in substantially similar transactions (the “Commencement Irrevocable Transfer Agent Instructions”) and (ii) the notice of effectiveness of the Registration Statement in the form attached as an exhibit to the Registration Rights Agreement (the “Notice of Effectiveness of Registration Statement”), in each case to issue the Purchase Shares in accordance with the terms of this Agreement and the Registration Rights Agreement. All Purchase Shares to be issued from and after Commencement to or for the benefit of the Investor pursuant to this Agreement shall be issued only as DWAC Shares. The Company represents and warrants to the Investor that, while this Agreement is effective, no instruction other than the Commencement Irrevocable Transfer Agent Instructions and the Notice of Effectiveness of Registration Statement referred to in this Section 6(b) will be given by the Company to the Transfer Agent with respect to the Purchase Shares or the Commitment Shares from and after Commencement, and the Purchase Shares and the Commitment Shares covered by the Registration Statement shall otherwise be freely transferable on the books and records of the Company. The Company agrees that if the Company fails to fully comply with the provisions of this Section 6(b) within five (5) Business Days of the Investor providing the deliveries referred to above, the Company shall, at the Investor’s written instruction, purchase such shares of Common Stock containing the Restrictive Legend from the Investor at the greater of the (i) purchase price paid for such shares of Common Stock (as applicable) and (ii) the Closing Sale Price of the Common Stock on the date of the Investor’s written instruction.

7. CONDITIONS TO THE COMPANY'S RIGHT TO COMMENCE SALES OF SHARES OF COMMON STOCK.

The right of the Company hereunder to commence sales of the Purchase Shares on the Commencement Date is subject to the satisfaction of each of the following conditions:

- (a) The Investor shall have executed each of the Transaction Documents and delivered the same to the Company;
- (b) The Registration Statement covering the resale of the Purchase Shares and all of the Commitment Shares shall have been declared effective under the Securities Act by the SEC, and no stop order with respect to the Registration Statement shall be pending or threatened by the SEC; and
- (c) The representations and warranties of the Investor shall be true and correct in all material respects as of the date hereof and as of the Commencement Date as though made at that time.

8. CONDITIONS TO THE INVESTOR'S OBLIGATION TO PURCHASE SHARES OF COMMON STOCK.

The obligation of the Investor to buy Purchase Shares under this Agreement is subject to the satisfaction of each of the following conditions on or prior to the Commencement Date and, once such conditions have been initially satisfied, there shall not be any ongoing obligation to satisfy such conditions after the Commencement has occurred:

- (a) The Company shall have executed each of the Transaction Documents and delivered the same to the Investor;
- (b) The Company shall (i) have issued or caused to be issued to the Investor (1) one or more certificates or book-entry statements representing the Commitment Shares free from all restrictive and other legends or (2) a number of shares of Common Stock equal to the number of Commitment Shares as DWAC Shares, in each case in accordance with Section 6(b) and (ii) have paid to the Investor the Commitment Fee;
- (c) The Common Stock shall be listed or quoted on the Principal Market, trading in the Common Stock shall not have been within the last 365 days suspended by the SEC or the Principal Market, and all Securities to be issued by the Company to the Investor pursuant to this Agreement shall have been approved for listing or quotation on the Principal Market in accordance with the applicable rules and regulations of the Principal Market, subject only to official notice of issuance;
- (d) The Investor shall have received the opinions of the Company's legal counsel dated as of the Commencement Date substantially in the form heretofore agreed by the parties hereto;
- (e) The representations and warranties of the Company shall be true and correct in all material respects (except to the extent that any of such representations and warranties is already qualified as to materiality in Section 4 above, in which case, the portion of such representations and warranties so qualified shall be true and correct without further qualification) as of the date hereof and as of the Commencement Date as though made at that time (except for representations and warranties that speak as of a specific date, which shall be true and correct as of such date) and the Company shall have performed, satisfied and complied with the covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by the Company at or prior to the Commencement Date. The Investor shall have received a certificate, executed by the CEO, President or CFO of the Company, dated as of the Commencement Date, to the foregoing effect in the form attached hereto as Exhibit A.

(f) The Board of Directors of the Company shall have adopted resolutions in substantially the form attached hereto as Exhibit B which shall be in full force and effect without any amendment or supplement thereto as of the Commencement Date;

(g) As of the Commencement Date, the Company shall have reserved out of its authorized and unissued Common Stock, solely for the purpose of effecting purchases of Purchase Shares hereunder, 5,000,000 shares of Common Stock;

(h) The Commencement Irrevocable Transfer Agent Instructions and the Notice of Effectiveness of Registration Statement each shall have been delivered to and acknowledged in writing by the Company and the Company's Transfer Agent (or any successor transfer agent);

(i) The Company shall have delivered to the Investor a certificate evidencing the incorporation and good standing of the Company in the State of Nevada issued by the Secretary of State of the State of Nevada as of a date within ten (10) Business Days of the Commencement Date;

(j) The Company shall have delivered to the Investor a certified copy of the Articles of Incorporation as certified by the Secretary of State of the State of Nevada within ten (10) Business Days of the Commencement Date;

(k) The Company shall have delivered to the Investor a secretary's certificate executed by the Secretary of the Company, dated as of the Commencement Date, in the form attached hereto as Exhibit C;

(l) The Registration Statement covering the resale of the Purchase Shares and all of the Commitment Shares shall have been declared effective under the Securities Act by the SEC, and no stop order with respect to the Registration Statement shall be pending or threatened by the SEC. The Company shall have prepared and filed with the SEC, not later than one (1) Business Day after the effective date of the Registration Statement, a final and complete prospectus (the preliminary form of which shall be included in the Registration Statement) and shall have delivered to the Investor a true and complete copy thereof. Such prospectus shall be current and available for the resale by the Investor of all of the Securities covered thereby. The Current Report shall have been filed with the SEC, as required pursuant to Section 5(a). All reports, schedules, registrations, forms, statements, information and other documents required to have been filed by the Company with the SEC from and after the date hereof through and including the Commencement Date pursuant to the reporting requirements of the Exchange Act shall have been filed with the SEC within the applicable time periods prescribed for such filings under the Exchange Act;

(m) No Event of Default has occurred, or any event which, after notice and/or lapse of time, would become an Event of Default has occurred;

(n) All federal, state and local governmental laws, rules and regulations applicable to the transactions contemplated by the Transaction Documents and necessary for the execution, delivery and performance of the Transaction Documents and the consummation of the transactions contemplated thereby in accordance with the terms thereof shall have been complied with, and all consents, authorizations and orders of, and all filings and registrations with, all federal, state and local courts or governmental agencies and all federal, state and local regulatory or self-regulatory agencies necessary for the execution, delivery and performance of the Transaction Documents and the consummation of the transactions contemplated thereby in accordance with the terms thereof shall have been obtained or made, including, without limitation, in each case those required under the Securities Act, the Exchange Act, applicable state securities or "Blue Sky" laws or applicable rules and regulations of the Principal Market, or otherwise required by the SEC, the Principal Market or any state securities regulators;

(o) No statute, regulation, order, decree, writ, ruling or injunction shall have been enacted, entered, promulgated, threatened or endorsed by any federal, state, local or foreign court or governmental authority of competent jurisdiction which prohibits the consummation of or which would materially modify or delay any of the transactions contemplated by the Transaction Documents; and

(p) No action, suit or proceeding before any federal, state, local or foreign arbitrator or any court or governmental authority of competent jurisdiction shall have been commenced or threatened, and no inquiry or investigation by any federal, state, local or foreign governmental authority of competent jurisdiction shall have been commenced or threatened, against the Company, or any of the officers, directors or affiliates of the Company, seeking to restrain, prevent or change the transactions contemplated by the Transaction Documents, or seeking material damages in connection with such transactions.

9. INDEMNIFICATION.

In consideration of the Investor's execution and delivery of the Transaction Documents and acquiring the Securities hereunder and in addition to all of the Company's other obligations under the Transaction Documents, the Company shall defend, protect, indemnify and hold harmless the Investor and all of its affiliates, stockholders, officers, directors, members, managers, employees and direct or indirect investors and any of the foregoing Person's agents or other representatives (including, without limitation, those retained in connection with the transactions contemplated by this Agreement) (collectively, the "Indemnitees") from and against any and all actions, causes of action, suits, claims, losses, costs, penalties, fees, liabilities and damages, and expenses in connection therewith (irrespective of whether any such Indemnitee is a party to the action for which indemnification hereunder is sought), and including reasonable attorneys' fees and disbursements (the "Indemnified Liabilities"), incurred by any Indemnitee as a result of, or arising out of, or relating to (a) any misrepresentation or breach of any representation or warranty made by the Company in the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, (b) any breach of any covenant, agreement or obligation of the Company contained in the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, or (c) any cause of action, suit or claim brought or made against such Indemnitee and arising out of or resulting from the execution, delivery, performance or enforcement of the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, other than, in the case of clause (c), with respect to Indemnified Liabilities which directly and primarily result from the fraud, gross negligence or willful misconduct of an Indemnitee. The indemnity in this Section 9 shall not apply to amounts paid in settlement of any claim if such settlement is effected without the prior written consent of the Company, which consent shall not be unreasonably withheld, conditioned or delayed. To the extent that the foregoing undertaking by the Company may be unenforceable for any reason, the Company shall make the maximum contribution to the payment and satisfaction of each of the Indemnified Liabilities which is permissible under applicable law. Payment under this indemnification shall be made within thirty (30) days from the date the Investor makes written request for it. A certificate containing reasonable detail as to the amount of such indemnification submitted to the Company by the Investor shall be conclusive evidence, absent manifest error, of the amount due from the Company to the Investor. If any action shall be brought against any Indemnitee in respect of which indemnity may be sought pursuant to this Agreement, such Indemnitee shall promptly notify the Company in writing, and the Company shall have the right to assume the defense thereof with counsel of its own choosing reasonably acceptable to the Indemnitee. Any Indemnitee shall have the right to employ separate counsel in any such action and participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Indemnitee, except to the extent that (i) the employment thereof has been specifically authorized by the Company in writing, (ii) the Company has failed after a reasonable period of time to assume such defense and to employ counsel or (iii) in such action there is, in the reasonable opinion of such separate counsel, a material conflict on any material issue between the position of the Company and the position of such Indemnitee, in which case the Company shall be responsible for the reasonable fees and expenses of no more than one such separate counsel.

10. EVENTS OF DEFAULT.

An “Event of Default” shall be deemed to have occurred at any time as any of the following events occurs:

(a) the effectiveness of a registration statement registering the resale of the Securities lapses for any reason (including, without limitation, the issuance of a stop order or similar order) or such registration statement (or the prospectus forming a part thereof) is unavailable to the Investor for resale of any or all of the Securities to be issued to the Investor under the Transaction Documents, and such lapse or unavailability continues for a period of ten (10) consecutive Business Days or for more than an aggregate of thirty (30) Business Days in any 365-day period, but excluding a lapse or unavailability where (i) the Company terminates a registration statement after the Investor has confirmed in writing that all of the Securities covered thereby have been resold or (ii) the Company supersedes one registration statement with another registration statement, including (without limitation) by terminating a prior registration statement when it is effectively replaced with a new registration statement covering Securities (provided in the case of this clause (ii) that all of the Securities covered by the superseded (or terminated) registration statement that have not theretofore been resold are included in the superseding (or new) registration statement);

(b) the suspension of the Common Stock from trading on the Principal Market for a period of one (1) Business Day, provided that the Company may not direct the Investor to purchase any shares of Common Stock during any such suspension;

(c) the delisting of the Common Stock from The Nasdaq Global Market, provided, however, that the Common Stock is not immediately thereafter trading on the New York Stock Exchange, The Nasdaq Capital Market, The Nasdaq Global Select Market, the NYSE American, the NYSE Arca, the OTC Bulletin Board or OTC Markets (or nationally recognized successor to any of the foregoing);

(d) the failure for any reason by the Transfer Agent to issue Purchase Shares to the Investor within two (2) Business Days after the Purchase Date, Accelerated Purchase Date, Additional Accelerated Purchase Date or Tranche Purchase Date, as applicable, on which the Investor is entitled to receive such Purchase Shares;

(e) the Company breaches any representation, warranty, covenant or other term or condition under any Transaction Document if such breach would reasonably be expected to have a Material Adverse Effect and except, in the case of a breach of a covenant which is reasonably curable, only if such breach continues for a period of at least five (5) Business Days;

(f) if any Person commences a proceeding against the Company pursuant to or within the meaning of any Bankruptcy Law;

(g) if the Company, pursuant to or within the meaning of any Bankruptcy Law, (i) commences a voluntary case, (ii) consents to the entry of an order for relief against it in an involuntary case, (iii) consents to the appointment of a Custodian of it or for all or substantially all of its property, or (iv) makes a general assignment for the benefit of its creditors or is generally unable to pay its debts as the same become due;

(h) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that (i) is for relief against the Company in an involuntary case, (ii) appoints a Custodian of the Company or for all or substantially all of its property, or (iii) orders the liquidation of the Company or any Subsidiary;

(i) if at any time the Company is not eligible to transfer its Common Stock electronically as DWAC Shares; or

(j) if at any time after the Commencement Date, the Exchange Cap is reached (to the extent such Exchange Cap is applicable pursuant to Section 2(f) hereof).

In addition to any other rights and remedies under applicable law and this Agreement, so long as an Event of Default has occurred and is continuing, or if any event which, after notice and/or lapse of time, would become an Event of Default, has occurred and is continuing, the Company shall not deliver to the Investor any Regular Purchase Notice, Accelerated Purchase Notice, Additional Accelerated Purchase Notice or Tranche Purchase Notice.

11. TERMINATION

This Agreement may be terminated only as follows:

(a) If pursuant to or within the meaning of any Bankruptcy Law, the Company commences a voluntary case or any Person commences a proceeding against the Company, a Custodian is appointed for the Company or for all or substantially all of its property, or the Company makes a general assignment for the benefit of its creditors (any of which would be an Event of Default as described in Sections 10(f), 10(g) and 10(h) hereof), this Agreement shall automatically terminate without any liability or payment to the Company (except as set forth below) without further action or notice by any Person.

(b) In the event that (i) the Company fails to file the Registration Statement with the SEC within the period specified in Section 5(a) hereof in accordance with the terms of the Registration Rights Agreement or (ii) the Commencement shall not have occurred on or before November 30, 2019, due to the failure to satisfy the conditions set forth in Sections 7 and 8 above with respect to the Commencement, then, in the case of clause (i) above, this Agreement may be terminated by the Investor at any time prior to the filing of the Registration Statement and, in the case of clause (ii) above, this Agreement may be terminated by either party at the close of business on November 30, 2019 or thereafter, in each case without liability of such party to the other party (except as set forth below); provided, however, that the right to terminate this Agreement under this Section 11(b) shall not be available to any party if such party is then in breach of any covenant or agreement contained in this Agreement or any representation or warranty of such party contained in this Agreement fails to be true and correct such that the conditions set forth in Section 7(c) or Section 8(e), as applicable, could not then be satisfied.

(c) At any time after the Commencement Date, the Company shall have the option to terminate this Agreement for any reason or for no reason by delivering notice (a "Company Termination Notice") to the Investor electing to terminate this Agreement without any liability whatsoever of any party to any other party under this Agreement (except as set forth below). The Company Termination Notice shall not be effective until one (1) Business Day after it has been received by the Investor.

(d) This Agreement shall automatically terminate on the date that the Company sells and the Investor purchases the full Available Amount as provided herein, without any action or notice on the part of any party and without any liability whatsoever of any party to any other party under this Agreement (except as set forth below).

(e) If, for any reason or for no reason, the full Available Amount has not been purchased in accordance with Section 2 of this Agreement by the Maturity Date, this Agreement shall automatically terminate on the Maturity Date, without any action or notice on the part of any party and without any liability whatsoever of any party to any other party under this Agreement (except as set forth below).

Except as set forth in Sections 11(a) (in respect of an Event of Default under Sections 10(f), 10(g) and 10(h)), 11(d) and 11(e), any termination of this Agreement pursuant to this Section 11 shall be effected by written notice from the Company to the Investor, or the Investor to the Company, as the case may be, setting forth the basis for the termination hereof. The representations and warranties and covenants of the Company and the Investor contained in Sections 3, 4, 5, and 6 hereof, the indemnification provisions set forth in Section 9 hereof and the agreements and covenants set forth in Sections 10, 11 and 12 shall survive the execution and delivery of this Agreement and any termination of this Agreement. No termination of this Agreement shall (i) affect the Company's or the Investor's rights or obligations under (A) this Agreement with respect to any pending Regular Purchase, Accelerated Purchase, Additional Accelerated Purchase or Tranche Purchase, and the Company and the Investor shall complete their respective obligations with respect to any pending Regular Purchase, Accelerated Purchase, Additional Accelerated Purchase and Tranche Purchase under this Agreement and (B) the Registration Rights Agreement, which shall survive any such termination, or (ii) be deemed to release the Company or the Investor from any liability for intentional misrepresentation or willful breach of any of the Transaction Documents.

12. MISCELLANEOUS.

(a) Governing Law; Jurisdiction; Jury Trial. The corporate laws of the State of Nevada shall govern all issues concerning the relative rights of the Company and its stockholders. All other questions concerning the construction, validity, enforcement and interpretation of this Agreement and the other Transaction Documents shall be governed by the internal laws of the State of Illinois, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of Illinois or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of Illinois. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the State of Illinois, County of Cook, for the adjudication of any dispute hereunder or under the other Transaction Documents or in connection herewith or therewith, or with any transaction contemplated hereby or discussed herein, 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 to such party at the address for such 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. **EACH PARTY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION HEREWITH OR ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

(b) Counterparts. This Agreement may be executed in two or more identical counterparts, all of which shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party; provided that a facsimile signature or signature delivered by e-mail in a “.pdf” format data file shall be considered due execution and shall be binding upon the signatory thereto with the same force and effect as if the signature were an original signature.

(c) Headings. The headings of this Agreement are for convenience of reference and shall not form part of, or affect the interpretation of, this Agreement.

(d) Severability. If any provision of this Agreement shall be invalid or unenforceable in any jurisdiction, such invalidity or unenforceability shall not affect the validity or enforceability of the remainder of this Agreement in that jurisdiction or the validity or enforceability of any provision of this Agreement in any other jurisdiction.

(e) Entire Agreement. The Transaction Documents supersede all other prior oral or written agreements between the Investor, the Company, their affiliates and Persons acting on their behalf with respect to the subject matter thereof, and this Agreement, the other Transaction Documents and the instruments referenced herein contain the entire understanding of the parties with respect to the matters covered herein and therein and, except as specifically set forth herein or therein, neither the Company nor the Investor makes any representation, warranty, covenant or undertaking with respect to such matters. The Company acknowledges and agrees that it has not relied on, in any manner whatsoever, any representations or statements, written or oral, other than as expressly set forth in the Transaction Documents.

(f) Notices. Any notices, consents or other communications required or permitted to be given under the terms of this Agreement must be in writing and will be deemed to have been delivered: (i) upon receipt when delivered personally; (ii) upon receipt when sent by facsimile or email (provided confirmation of transmission is mechanically or electronically generated and kept on file by the sending party); or (iii) one Business Day after deposit with a nationally recognized overnight delivery service, in each case properly addressed to the party to receive the same. The addresses for such communications shall be:

If to the Company:

Tonix Pharmaceuticals Holding Corp.
509 Madison Avenue, Suite 1608
New York, New York 10022
Telephone: (212) 980-9155
Facsimile: (212) 923-5700
E-mail: seth.lederman@tonixpharma.com
Attention: Seth Lederman

With a copy to (which shall not constitute notice or service of process):

Lowenstein Sandler LLP
One Lowenstein Drive
Roseland, NJ 07068
Telephone: (973) 597-2900
Facsimile: (973) 597-2400
E-mail: sskolnick@lowenstein.com
Attention: Steven M. Skolnick, Esq.

If to the Investor:

Lincoln Park Capital Fund, LLC
440 North Wells, Suite 410
Chicago, IL 60654
Telephone: 312-822-9300
Facsimile: 312-822-9301
E-mail: jscheinfeld@lpcfunds.com/jcope@lpcfunds.com
Attention: Josh Scheinfeld/Jonathan Cope

With a copy to (which shall not constitute notice or service of process):

K&L Gates, LLP
200 S. Biscayne Blvd., Ste. 3900
Miami, Florida 33131
Telephone: 305.539.3306
Facsimile: 305.358.7095
E-mail: clayton.parker@klgates.com
Attention: Clayton E. Parker, Esq.

If to the Transfer Agent:

vStock Transfer, LLC
18 Lafayette Place
Woodmere, NY 11598
Telephone: (212) 828-8436
Facsimile: (646) 536-3179
E-mail: info@vstocktransfer.com
Attention: Yoel Goldfeder

or at such other address, email address and/or facsimile number and/or to the attention of such other Person as the recipient party has specified by written notice given to each other party three (3) Business Days prior to the effectiveness of such change. Written confirmation of receipt (A) given by the recipient of such notice, consent or other communication, (B) mechanically or electronically generated by the sender's facsimile machine or email account containing the time, date, and recipient facsimile number or email address, as applicable, and an image of the first page of such transmission or (C) provided by a nationally recognized overnight delivery service, shall be rebuttable evidence of personal service, receipt by facsimile or receipt from a nationally recognized overnight delivery service in accordance with clause (i), (ii) or (iii) above, respectively.

(g) Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and any permitted successors and assigns of the Company. The Company shall not assign this Agreement or any rights or obligations hereunder without the prior written consent of the Investor, including by merger or consolidation. The Investor may not assign its rights or obligations under this Agreement.

(h) No Third Party Beneficiaries. This Agreement is intended for the benefit of the parties hereto and any permitted successors and assigns of the Company and, except as set forth in Section 9, is not for the benefit of, nor may any provision hereof be enforced by, any other Person.

(i) Publicity. The Company shall afford the Investor and its counsel with the opportunity to review and comment upon the form and substance of, and shall give reasonable consideration to all such comments from the Investor or its counsel on, any press release, SEC filing or any other public disclosure by or on behalf of the Company relating to the Investor, its purchases hereunder or any aspect of the Securities, the Transaction Documents or the transactions contemplated thereby, not less than 24 hours prior to the issuance, filing or public disclosure thereof. The Investor must be provided with a final version of any such press release, SEC filing or other public disclosure at least 24 hours prior to any release, filing or use by the Company thereof. The Company agrees and acknowledges that its failure to fully comply with this provision constitutes a Material Adverse Effect.

(j) Further Assurances. Each party shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents, as the other party may reasonably request in order to consummate and make effective, as soon as reasonably possible, the Commencement, and to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby.

(k) No Financial Advisor, Placement Agent, Broker or Finder. The Company represents and warrants to the Investor that it has not engaged any financial advisor, placement agent, broker or finder in connection with the transactions contemplated hereby. The Investor represents and warrants to the Company that it has not engaged any financial advisor, placement agent, broker or finder in connection with the transactions contemplated hereby. The Company shall be responsible for the payment of any fees or commissions, if any, of any financial advisor, placement agent, broker or finder relating to or arising out of the transactions contemplated hereby. The Company shall pay, and hold the Investor harmless against, any liability, loss or expense (including, without limitation, attorneys' fees and out of pocket expenses) arising in connection with any such claim.

(l) No Strict Construction. The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party.

(m) Remedies, Other Obligations, Breaches and Injunctive Relief. The Investor's remedies provided in this Agreement, including, without limitation, the Investor's remedies provided in Section 9, shall be cumulative and in addition to all other remedies available to the Investor under this Agreement, at law or in equity (including a decree of specific performance and/or other injunctive relief), no remedy of the Investor contained herein shall be deemed a waiver of compliance with the provisions giving rise to such remedy and nothing herein shall limit the Investor's right to pursue actual damages for any failure by the Company to comply with the terms of this Agreement. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Investor and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the Investor shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

(n) Enforcement Costs. If: (i) this Agreement is placed by the Investor in the hands of an attorney for enforcement or is enforced by the Investor through any legal proceeding; (ii) an attorney is retained to represent the Investor in any bankruptcy, reorganization, receivership or other proceedings affecting creditors' rights and involving a claim under this Agreement; or (iii) an attorney is retained to represent the Investor in any other proceedings whatsoever in connection with this Agreement, then the Company shall pay to the Investor, as incurred by the Investor, all reasonable costs and expenses including attorneys' fees incurred in connection therewith, in addition to all other amounts due hereunder. If this Agreement is placed by the Company in the hands of an attorney for enforcement or is enforced by the Company through any legal proceeding, then the Investor shall pay to the Company, as incurred by the Company, all reasonable costs and expenses, including attorneys' fees incurred in connection therewith, in addition to all other amounts due hereunder.

(o) Amendment and Waiver; Failure or Indulgence Not Waiver. No provision of this Agreement may be amended or waived by the parties from and after the date that is one (1) Business Day immediately preceding the initial filing of the Registration Statement with the SEC. Subject to the immediately preceding sentence, (i) no provision of this Agreement may be amended other than by a written instrument signed by both parties hereto and (ii) no provision of this Agreement may be waived other than in a written instrument signed by the party against whom enforcement of such waiver is sought. No failure or delay in the exercise of any power, right or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercise thereof or of any other right, power or privilege.

* * * * *

IN WITNESS WHEREOF, the Investor and the Company have caused this Agreement to be duly executed as of the date first written above.

THE COMPANY:

TONIX PHARMACEUTICALS HOLDING CORP.

By: /s/ Seth Lederman

Name: Seth Lederman

Title: Chief Executive Officer

INVESTOR:

LINCOLN PARK CAPITAL FUND, LLC

BY: LINCOLN PARK CAPITAL, LLC

BY: ROCKLEDGE CAPITAL CORPORATION

By: /s/ Josh Scheinfeld

Name: Josh Scheinfeld

Title: President

EXHIBITS

ExhibitA	Form of Officer's Certificate
ExhibitB	Form of Resolutions of Board of Directors of the Company
ExhibitC	Form of Secretary's Certificate
ExhibitD	Form of Letter to Transfer Agent

EXHIBIT A

FORM OF OFFICER'S CERTIFICATE

This Officer's Certificate ("**Certificate**") is being delivered pursuant to Section 8(e) of that certain Purchase Agreement dated as of August 20, 2019, ("**Purchase Agreement**"), by and between **TONIX PHARMACEUTICALS HOLDING CORP.**, a Nevada corporation (the "**Company**"), and **LINCOLN PARK CAPITAL FUND, LLC** (the "**Investor**"). Terms used herein and not otherwise defined shall have the meanings ascribed to them in the Purchase Agreement.

The undersigned, _____, _____ of the Company, hereby certifies, on behalf of the Company and not in his individual capacity, as follows:

1. I am the _____ of the Company and make the statements contained in this Certificate;

2. The representations and warranties of the Company are true and correct in all material respects (except to the extent that any of such representations and warranties is already qualified as to materiality in Section 4 of the Purchase Agreement, in which case, such representations and warranties are true and correct without further qualification) as of the date when made and as of the Commencement Date as though made at that time (except for representations and warranties that speak as of a specific date, in which case such representations and warranties are true and correct as of such date);

3. The Company has performed, satisfied and complied in all material respects with covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by the Company at or prior to the Commencement Date.

4. The Company has not taken any steps, and does not currently expect to take any steps, to seek protection pursuant to any Bankruptcy Law nor does the Company or any of its Subsidiaries have any knowledge or reason to believe that its creditors intend to initiate involuntary bankruptcy or insolvency proceedings. The Company is financially solvent and is generally able to pay its debts as they become due.

IN WITNESS WHEREOF, I have hereunder signed my name on this ___ day of _____.

Name:

Title:

The undersigned as Secretary of **TONIX PHARMACEUTICALS HOLDING CORP.**, a Nevada corporation, hereby certifies that _____ is the duly elected, appointed, qualified and acting _____ of _____ and that the signature appearing above is his genuine signature.

Secretary

EXHIBIT B

**FORM OF COMPANY RESOLUTIONS
FOR SIGNING PURCHASE AGREEMENT**

**UNANIMOUS WRITTEN CONSENT OF
TONIX PHARMACEUTICALS HOLDING CORP.**

In accordance with the corporate laws of the state of Nevada, the undersigned, being all of the directors of **TONIX PHARMACEUTICALS HOLDING CORP.**, a Nevada corporation (the "Corporation") do hereby consent to and adopt the following resolutions as the action of the Board of Directors for and on behalf of the Corporation and hereby direct that this Consent be filed with the minutes of the proceedings of the Board of Directors:

WHEREAS, there has been presented to the Board of Directors of the Corporation a draft of the Purchase Agreement (the "Purchase Agreement") by and between the Corporation and Lincoln Park Capital Fund, LLC ("Lincoln Park"), providing for the purchase by Lincoln Park of up to Fifteen Million Dollars (\$15,000,000) of the Corporation's common stock, \$0.001 par value per share (the "Common Stock"); and

WHEREAS, after careful consideration of the Purchase Agreement, the documents incident thereto and other factors deemed relevant by the Board of Directors, the Board of Directors has determined that it is advisable and in the best interests of the Corporation to engage in the transactions contemplated by the Purchase Agreement, including, but not limited to, the issuance of 355,290 shares of Common Stock to Lincoln Park (the "Commitment Shares") and the payment of \$100,000 as a commitment fee ("Commitment Fee") and the sale of shares of Common Stock to Lincoln Park up to the available amount under the Purchase Agreement (the "Purchase Shares").

Transaction Documents

NOW, THEREFORE, BE IT RESOLVED, that the transactions described in the Purchase Agreement are hereby approved and _____ (the "Authorized Officers") are severally authorized to execute and deliver the Purchase Agreement, and any other agreements or documents contemplated thereby including, without limitation, a registration rights agreement (the "Registration Rights Agreement") providing for the registration of the shares of the Company's Common Stock issuable in respect of the Purchase Agreement on behalf of the Corporation, with such amendments, changes, additions and deletions as the Authorized Officers may deem to be appropriate and approve on behalf of, the Corporation, such approval to be conclusively evidenced by the signature of an Authorized Officer thereon; and

FURTHER RESOLVED, that the terms and provisions of the Registration Rights Agreement by and among the Corporation and Lincoln Park are hereby approved and the Authorized Officers are authorized to execute and deliver the Registration Rights Agreement (pursuant to the terms of the Purchase Agreement), with such amendments, changes, additions and deletions as the Authorized Officer may deem appropriate and approve on behalf of, the Corporation, such approval to be conclusively evidenced by the signature of an Authorized Officer thereon; and

FURTHER RESOLVED, that the terms and provisions of the forms of Irrevocable Transfer Agent Instructions and Notice of Effectiveness of Registration Statement (collectively, the "Instructions") are hereby approved and the Authorized Officers are authorized to execute and deliver the Instructions on behalf of the Company in accordance with the Purchase Agreement, with such amendments, changes, additions and deletions as the Authorized Officers may deem appropriate and approve on behalf of, the Corporation, such approval to be conclusively evidenced by the signature of an Authorized Officer thereon; and

Execution of Purchase Agreement

FURTHER RESOLVED, that the Corporation be and it hereby is authorized to execute the Purchase Agreement providing for the purchase of up to Fifteen Million Dollars (\$15,000,000) of the Corporation's common stock; and

Issuance of Common Stock

FURTHER RESOLVED, that the Corporation is hereby authorized to pay Lincoln Park the Commitment Fee and issue Lincoln Park Capital Fund, LLC the Commitment Shares and that upon issuance of the Commitment Shares pursuant to the Purchase Agreement the Commitment Shares shall be duly authorized, validly issued, fully paid and nonassessable with no personal liability attaching to the ownership thereof; and

FURTHER RESOLVED, that the Corporation is hereby authorized to issue shares of Common Stock upon the purchase of Purchase Shares up to the Available Amount under the Purchase Agreement in accordance with the terms of the Purchase Agreement and that, upon issuance of the Purchase Shares pursuant to the Purchase Agreement, the Purchase Shares will be duly authorized, validly issued, fully paid and nonassessable with no personal liability attaching to the ownership thereof; and

FURTHER RESOLVED, that the Corporation shall initially reserve 5,000,000 shares of Common Stock for issuance as Purchase Shares under the Purchase Agreement.

Registration Statement

FURTHER RESOLVED, that the Authorized Officers are hereby authorized, in the name and on behalf of the Corporation, to prepare and file with the Securities and Exchange Commission (the "SEC") a registration statement on Form S-1 or such other form as may be applicable (the "Registration Statement"), for the offering and resale of the Commitment Shares and the Purchase Shares (collectively, the "Equity Line Shares") (together with any and all related documentation).

NASDAQ Listing of Additional Shares

FURTHER RESOLVED, that the Authorized Officers are authorized in the name and on behalf of the Corporation to take any and all action that he may deem necessary or advisable to effect the listing of the Equity Line Shares on The Nasdaq Global Market, including without limitation, the filing of a Notification Form for Listing of Additional Shares and the payment of any required fees.

Approval of Actions

FURTHER RESOLVED, that, without limiting the foregoing, the Authorized Officers are, and each of them hereby is, authorized and directed to proceed on behalf of the Corporation and to take all such steps as deemed necessary or appropriate, with the advice and assistance of counsel, to cause the Corporation to consummate the agreements referred to herein and to perform its obligations under such agreements; and

FURTHER RESOLVED, that the Authorized Officers be, and each of them hereby is, authorized, empowered and directed on behalf of and in the name of the Corporation, to take or cause to be taken all such further actions and to execute and deliver or cause to be executed and delivered all such further agreements, amendments, documents, certificates, reports, schedules, applications, notices, letters and undertakings and to incur and pay all such fees and expenses as in their judgment shall be necessary, proper or desirable to carry into effect the purpose and intent of any and all of the foregoing resolutions, and that all actions heretofore taken by any officer or director of the Corporation in connection with the transactions contemplated by the agreements described herein are hereby approved, ratified and confirmed in all respects.

IN WITNESS WHEREOF, the Board of Directors has executed and delivered this Consent effective as of _____, 2019.

being all of the directors of **TONIX PHARMACEUTICALS HOLDING CORP.**

EXHIBIT C

FORM OF SECRETARY'S CERTIFICATE

This Secretary's Certificate ("Certificate") is being delivered pursuant to Section 8(k) of that certain Purchase Agreement dated as of August 20, 2019 ("Purchase Agreement"), by and between **TONIX PHARMACEUTICALS HOLDING CORP.**, a Nevada corporation (the "Company") and **LINCOLN PARK CAPITAL FUND, LLC** (the "Investor"), pursuant to which the Company may sell to the Investor up to Fifteen Million Dollars (\$15,000,000) of the Company's Common Stock, \$0.001 par value per share (the "Common Stock"). Terms used herein and not otherwise defined shall have the meanings ascribed to them in the Purchase Agreement.

The undersigned, _____, Secretary of the Company, hereby certifies, on behalf of the Company and not in his individual capacity, as follows:

1. I am the Secretary of the Company and make the statements contained in this Secretary's Certificate.
2. Attached hereto as Exhibit A and Exhibit B are true, correct and complete copies of the Company's bylaws ("Bylaws") and articles of incorporation ("Charter"), in each case, as amended through the date hereof, and no action has been taken by the Company, its directors, officers or stockholders, in contemplation of the filing of any further amendment relating to or affecting the Bylaws or Charter.
3. Attached hereto as Exhibit C are true, correct and complete copies of the resolutions duly adopted by the Board of Directors of the Company on _____, at which a quorum was present and acting throughout. Such resolutions have not been amended, modified or rescinded and remain in full force and effect and such resolutions are the only resolutions adopted by the Company's Board of Directors, or any committee thereof, or the stockholders of the Company relating to or affecting (i) the entering into and performance of the Purchase Agreement, or the issuance, offering and sale of the Securities and (ii) and the performance of the Company of its obligation under the Transaction Documents as contemplated therein.
4. As of the date hereof, the authorized, issued and reserved capital stock of the Company is as set forth on Exhibit D hereto.

IN WITNESS WHEREOF, I have hereunder signed my name on this ___ day of _____.

Secretary

The undersigned as _____ of **TONIX PHARMACEUTICALS HOLDING CORP.**, a Nevada corporation, hereby certifies that _____ is the duly elected, appointed, qualified and acting Secretary of _____, and that the signature appearing above is his genuine signature.

EXHIBIT D

FORM OF LETTER TO THE TRANSFER AGENT FOR THE ISSUANCE OF THE COMMITMENT SHARES AT SIGNING OF THE PURCHASE AGREEMENT

[COMPANY LETTERHEAD]

[DATE]

[TRANSFER AGENT]

Re: Issuance of Common Stock to Lincoln Park Capital Fund, LLC

Dear _____,

On behalf of Tonix Pharmaceuticals Holding Corp. (the "Company"), you are hereby instructed to issue **as soon as possible** a book-entry statement representing an aggregate of 355,290 shares of our common stock in the name of **Lincoln Park Capital Fund, LLC**. The book-entry statement should be dated August 20, 2019. The book-entry statement should bear the following restrictive legend:

THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR APPLICABLE STATE SECURITIES LAWS. THE SECURITIES HAVE BEEN ACQUIRED FOR INVESTMENT AND MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED OR ASSIGNED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR APPLICABLE STATE SECURITIES LAWS, UNLESS SOLD PURSUANT TO: (1) RULE 144 UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR (2) AN OPINION OF HOLDER'S COUNSEL, IN A CUSTOMARY FORM, THAT REGISTRATION IS NOT REQUIRED UNDER SAID ACT OR APPLICABLE STATE SECURITIES LAWS.

The book-entry statement should be sent as soon as possible via overnight mail to the following address:

Lincoln Park Capital Fund, LLC
440 North Wells, Suite 410
Chicago, IL 60654
Attention: Josh Scheinfeld/Jonathan Cope

Thank you very much for your help. Please call me at _____ if you have any questions or need anything further.

TONIX PHARMACEUTICALS HOLDING CORP.

BY: _____
[name]
[title]

FORM OF COMPANY COUNSEL OPINION

Capitalized terms used herein but not defined herein, have the meaning set forth in the Purchase Agreement. Based on the foregoing, and subject to the assumptions and qualifications set forth herein, we are of the opinion that:

1. The Company is a corporation existing and in good standing under the laws of the State of Nevada. The Company is qualified to do business as a foreign corporation and is in good standing in the State of New York.

2. The Company has the corporate power to execute and deliver, and perform its obligations under, each of the Purchase Agreement, the Registration Rights Agreement and the other Transaction Documents to which it is a party. The Company has the corporate power to conduct its business as, to the best of our knowledge, it is now conducted, and to own and use the properties owned and used by it.

3. The execution, delivery and performance by the Company of each of the Purchase Agreement, the Registration Rights Agreement and the other Transaction Documents to which it is a party have been duly authorized by all necessary corporate action on the part of the Company. The execution and delivery by the Company of each of the Purchase Agreement, the Registration Rights Agreement and the other Transaction Documents to which it is a party, the performance of the obligations of the Company thereunder and the consummation by it of the transactions contemplated therein have been duly authorized and approved by the Company's Board of Directors and no further consent, approval or authorization of the Company, its Board of Directors or its stockholders is required. Each of the Purchase Agreement, the Registration Rights Agreement and the other Transaction Documents to which the Company is a party has been duly executed and delivered by the Company and constitutes the valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, except as such enforceability may be limited by general principles of equity or applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting creditor's rights and remedies.

4. The execution, delivery and performance by the Company of each of the Purchase Agreement, the Registration Rights Agreement and the other Transaction Documents to which it is a party, the consummation by the Company of the transactions contemplated thereby including the offering, sale and issuance of the Securities in accordance with the terms and conditions of the Purchase Agreement, and fulfillment and compliance by the Company with each of its obligations thereunder in accordance with the terms thereof, do not and will not: (i) conflict with or violate any provision of the Articles of Incorporation or the Bylaws of the Company, (ii) conflict with, constitute a breach of or default or an event which, with the giving of notice or lapse of time or both, constitutes or could constitute a breach or a default under any material agreement, note, lease, mortgage, deed or other material instrument to which the Company is a party or by which the Company or any of its assets are bound ("Material Agreements"), (iii) violate any statute, law, rule or regulation applicable to the Company, or (iv) violate any order, writ, injunction or decree applicable to the Company.

5. The issuance of the Securities pursuant to the terms and conditions of the Transaction Documents has been duly authorized by all necessary corporate action on the part of the Company. The Commitment Shares are validly issued, fully paid and non-assessable, to our knowledge, free of all taxes, liens, charges, restrictions, rights of first refusal and preemptive rights. 5,000,000 shares of Common Stock have been properly reserved for issuance as Purchase Shares under the Purchase Agreement. When issued and paid for in accordance with the Purchase Agreement, the Purchase Shares shall be validly issued, fully paid and non-assessable, to our knowledge, free of all taxes, liens, charges, restrictions, rights of first refusal and preemptive rights. To our knowledge, the execution and delivery of the Registration Rights Agreement do not, and the performance by the Company of its obligations thereunder shall not, give rise to any rights of any other Person for the registration under the Securities Act of any shares of Common Stock or other securities of the Company which have not been waived.

6. As of the date hereof, the authorized capital stock of the Company consists of 150,000,000 shares of common stock, par value \$0.001 per share.

7. Assuming the accuracy of your representations and warranties contained in the Purchase Agreement, the offering, sale and issuance of the Securities to you pursuant to the Purchase Agreement is exempt from registration under the Securities Act.

8. Other than that which has been obtained and completed prior to the date hereof, no authorization, approval, consent, filing or other order of any federal or state governmental body, regulatory agency, or stock exchange or market, or any court, or, to our knowledge, any third party is required to be obtained by the Company to enter into and perform its obligations under the Purchase Agreement, the Registration Rights Agreement and the other Transaction Documents to which it is a party or for the Company to issue and sell the Securities as contemplated by the Purchase Agreement.

9. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act. To our knowledge, since one year preceding the date of the Purchase Agreement, the Company has been in compliance with the reporting requirements of the Exchange Act applicable to it. To our knowledge, since one year preceding the date of the Purchase Agreement, the Company has not received any written notice from any Person stating that the Company has not been in compliance with any of the rules and regulations (including the requirements for continued listing) of the Principal Market.

10. The Company is not, and after giving effect to the issuance and sale of the Securities under the Purchase Agreement and the application of the proceeds therefrom as described in the Prospectus, will not be, an "investment company," as that term is defined in the Investment Company Act of 1940, as amended.

11. Except as described in the Registration Statement and the Prospectus, none of the Material Agreements grants to any person the right to require the Company to file a registration statement under the Securities Act with respect to any securities of the Company owned or to be owned by such person or to require the Company to include such securities in the securities registered pursuant to the Registration Statement or in any securities being registered pursuant to any other registration statement filed by the Company under the Securities Act.

[THE FOLLOWING MAY BE MADE IN A SEPARATE NEGATIVE ASSURANCES LETTER]

As counsel to the Company, we reviewed the Registration Statement and the Prospectus, and participated in discussions with your representatives and those of the Company, at which the contents of the Registration Statement and the Prospectus were discussed. Between the date of the Purchase Agreement and the time of the delivery of this letter, we participated in further discussions with your representatives and those of the Company, and we reviewed certain certificates of officers of the Company and public officials delivered to you today.

The purpose of our engagement was not to establish or to confirm factual matters set forth in the Registration Statement and the Prospectus. Moreover, many of the determinations required to be made in the preparation of the Registration Statement and the Prospectus involve matters of a non-legal nature.

The purpose of our professional engagement was not to establish or confirm factual matters set forth in the Registration Statement or the Prospectus. Moreover, many of the determinations required to be made in the preparation of the Registration Statement and the Prospectus involve matters of a non-legal nature.

Subject to the foregoing, we confirm to you, on the basis of the information we gained in the course of performing the services referred to above, that (a) the Registration Statement, as of its effective date, and the Prospectus, as of its date and as of the date hereof (except in each case as to the financial statements, schedules and other financial and accounting data, as to which we make no comment), appeared or appears on its face to be appropriately responsive in all material respects to the applicable requirements of the Securities Act and Form S-1, [and (b) each of the documents incorporated by reference in the Registration Statement and the Prospectus (except as to the financial statements, schedules and other financial and accounting data, as to which we make no comment), at the time such document was filed with the SEC, appeared on its face to be appropriately responsive in all material respects to the applicable requirements of the Exchange Act]. Furthermore, subject to the foregoing, nothing came to our attention that caused us to believe that (i) the Registration Statement, as of its effective date, contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) the Prospectus, as of its date and as of the date hereof, contained or contains any untrue statement of a material fact or omitted or omits to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; *provided, however*, that we do not express any belief with respect to the financial statements, schedules, notes, other financial and accounting information derived therefrom, contained in the Registration Statement or the Prospectus, as the case may be, at the respective times as of which the advisements set forth in this paragraph are provided.

We inform you that the Registration Statement became effective under the Securities Act on [_____], 2019 and that no stop order suspending the effectiveness of the Registration Statement has been issued under the Securities Act.

We are not representing the Company in any pending litigation in which it is a named defendant that challenges the validity or enforceability of, or seeks to enjoin the performance of, the Purchase Agreement, the Registration Rights Agreement or any of the other Transaction Documents.

PROXY

TONIX PHARMACEUTICALS HOLDING CORP.

**PROXY FOR SPECIAL MEETING TO BE HELD ON JANUARY 16, 2020
THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS**

This undersigned, revoking all prior proxies, hereby appoints SETH LEDERMAN and BRADLEY SAENGER (the "Proxies") and each of them, with full power of substitution in each, as proxies for the undersigned, to represent the undersigned and to vote all the shares of Common Stock of the Company which the undersigned would be entitled to vote, as fully as the undersigned could vote and act if personally present, at the Special Meeting of Stockholders (the "Meeting") to be held on January 16, 2020, at 11:00 a.m., local time, at the offices of Lowenstein Sandler LLP at 1251 Avenue of the Americas, New York, New York 10020 or at any adjournments or postponements thereof.

Should the undersigned be present and elect to vote at the Meeting or at any adjournments or postponements thereof, and after notification to the Secretary of the Company at the Meeting of the stockholder's decision to terminate this proxy, then the power of such attorneys or Proxies shall be deemed terminated and of no further force and effect. This proxy may also be revoked by filing a written notice of revocation with the Secretary of the Company or by duly executing a proxy bearing a later date.

In their discretion, the Proxies are authorized to vote upon any other matter that may properly come before the meeting or any adjournments thereof.

THIS PROXY WILL BE VOTED IN ACCORDANCE WITH THE SPECIFICATIONS MADE, BUT IF NO CHOICES ARE INDICATED, THIS PROXY WILL BE VOTED FOR THE ELECTION OF ALL NOMINEES AND FOR THE PROPOSALS LISTED ON THE REVERSE SIDE.

.....
CONTINUED AND TO BE MARKED, DATED AND SIGNED ON THE OTHER SIDE

▲ PLEASE DETACH ALONG PERFORATED LINE AND MAIL IN THE ENVELOPE PROVIDED. ▲

**Important Notice Regarding the Availability of Proxy Materials for the
Special Meeting of Stockholders to be held January 16, 2020**

**This Proxy Statement is available at:
<http://viewproxy.com/tonixpharma/2020SM>**

THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR" IN PROPOSALS 1, 2, 3 AND 4.

1. To approve an amendment to the Company's Articles of Incorporation, as amended, to increase the Company's authorized shares of common stock from 15,000,000 to 150,000,000;

FOR AGAINST ABSTAIN

DO NOT PRINT IN THIS AREA
(Shareholder Name & Address Data)

Address Change/Comments: (If you noted any Address Changes and/or Comments above, please mark box.)

CONTROL NUMBER

➔

2. To approve the Tonix Pharmaceuticals Holding Corp. 2020 Stock Incentive Plan;

FOR AGAINST ABSTAIN

3. To approve, for purposes of complying with applicable NASDAQ Listing Rules, the potential issuance and sale of 20% or more of the Company's common stock pursuant to the Company's purchase agreement with Lincoln Park Capital Fund LLC pursuant to which Lincoln Park Capital Fund LLC has agreed to purchase from us, from time to time, up to \$15,000,000 of our common stock;

FOR AGAINST ABSTAIN

4. To act on such other matters as may properly come before the meeting or any adjournment thereof.

FOR AGAINST ABSTAIN

I plan to attend the meeting

Date: _____, 20__

Signature _____

Signature (if held jointly) _____

NOTE: This proxy should be marked, dated and signed by each stockholder exactly as such stockholder's name appears hereon, and returned promptly in the enclosed envelope. When shares are held jointly, each holder should sign. When signing as an executor, administrator, attorney, trustee or guardian please give full title as such. If the signatory is a corporation, please sign full corporate name by duly authorized officer, giving full title as such. If the signatory is a partnership, please sign in the partnership name by authorized person.

▲ PLEASE DETACH ALONG PERFORATED LINE AND MAIL IN THE ENVELOPE PROVIDED. ▲

CONTROL NUMBER

➔

PROXY VOTING INSTRUCTIONS

Please have your 11-digit control number ready when voting by Internet or Telephone



INTERNET

Vote Your Shares on the Internet: Go to

www.aalvote.com/TNXPSM

Have your proxy card available when you access the above website. Follow the prompts to vote your shares.



TELEPHONE

Vote Your Shares by Phone: Call 1 (866) 804-9616

Use any touch-tone telephone to vote your shares. Have your proxy card available when you call. Follow the voting instructions to vote your shares.



MAIL

Vote Your Shares by Mail:

Mark, sign, and date your proxy card, then detach it, and return it in the postage-paid envelope provided.