

HEAT BIOLOGICS, INC.

FORM S-1/A (Securities Registration Statement)

Filed 10/10/17

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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
AMENDMENT NO. 1
TO
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933



Heat Biologics, Inc.

(Exact name of Registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

2836

(Primary Standard Industrial Classification Code Number)

26-2844103

(I.R.S. Employer Identification Number)

**801 Capitola Drive
Durham, North Carolina 27713
(919) 240-7133**

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

**Jeffrey Wolf
Chief Executive Officer and
Chairman of the Board of Directors
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Approximate date of commencement of proposed sale to the public : As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act of 1933, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act of 1933, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act of 1933, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act of 1934.

Large accelerated filer Accelerated filer
Non-accelerated filer Smaller reporting company
(Do not check if a smaller reporting company) Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Share (3)	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee (4)
Subscription Rights to purchase common stock, \$0.0002 par value per share	—	—	—	—(2)
Common stock, \$0.0002 par value per share, issuable upon exercise of Subscription Rights	15,000,000	\$ 0.75	\$ 11,250,000	\$ 1,340.43
Total	15,000,000	\$ 0.75	\$ 11,250,000	\$ 1,340.43(5)

- (1) This registration statement relates to (i) non-transferable subscription rights to purchase common stock \$0.0002 par value per share of Heat Biologics, Inc. (the “Registrant”), which subscription rights are to be issued to holders of the Registrant’s common stock and holders of the Registrant’s warrants on a *pro rata* basis without consideration, and (ii) the shares of the Registrant’s common stock issuable upon the exercise of such non-transferable subscription rights.
- (2) The subscription rights are being issued without consideration. Pursuant to Rule 457(g) under the Securities Act of 1933, as amended (the “Securities Act”), no separate registration fee is payable with respect to the subscription rights being offered hereby since the subscription rights are being registered in the same registration statement as the securities to be offered pursuant thereto.
- (3) Estimated solely for purposes of calculating the registration fee in accordance with Rule 457(c) under the Securities Act based upon the average of the high and low prices of the Registrant’s common stock on the Nasdaq Capital Market on October 9, 2017, which was \$0.75 per share.
- (4) Calculated under Section 6(b) of the Securities Act.
- (5) A fee of \$811.30 was previously paid. The balance of \$529.13 is being paid with the filing of this registration statement.

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

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

SUBJECT TO COMPLETION, DATED OCTOBER 10, 2017

PRELIMINARY PROSPECTUS



Subscription Rights to purchase up to 12,000,000 shares of common stock

Heat Biologics, Inc. is distributing, at no charge, to holders of our common stock and holders of our warrants non-transferable subscription rights to purchase one share of our common stock for each share of common stock owned at, and each share of common stock into which the warrants held by them were exercisable at, 5:00 p.m., New York City time, on October 13, 2017, subject to a pro-rata reduction if the basic subscription rights are exercised for an amount in excess of 12,000,000 shares of common stock, unless the offering size is increased. We refer to this as the “rights offering.”

Each subscription right will entitle the holder to purchase one share of our common stock at a subscription price equal to \$ _____ per share of our common stock, which we refer to as the basic subscription privilege. If you fully exercise your basic subscription privilege and other holders do not fully exercise their basic subscription privileges, you may also exercise an over-subscription privilege to purchase additional shares of common stock that remain unsubscribed at the expiration of the rights offering, subject to the availability and *pro rata* allocation of shares among holders exercising this over-subscription privilege.

We are conducting the rights offering to raise capital that we intend to use to fund our and our subsidiaries’ preclinical and clinical programs and for working capital and general corporate purposes, including to acquire, license or invest in complementary businesses, technologies, product candidates or other intellectual property. See “Use of Proceeds.”

The rights offering commences on the date of this prospectus and subscription rights will expire if they are not exercised by 5:00 p.m., New York City time, on November 8, 2017, unless we extend the rights offering period. There is no minimum number of subscription rights that must be exercised in this rights offering, no minimum number that any subscription rights holder must exercise, and no minimum number of units that we will issue at the closing of this rights offering. We have the option to extend the rights offering and the period for exercising your subscription rights for a period not to exceed 30 days, although we do not presently intend to do so. All exercises of subscription rights are irrevocable, even if you later learn information that you consider to be unfavorable to the exercise of your subscription rights and even if the rights offering is extended by our board of directors.

Our common stock is listed on the Nasdaq Capital Market under the symbol "HTBX." The last reported sale price of our common stock on October 9, 2017 was \$0.75 per share. The subscription rights will not be listed for trading on the NASDAQ Capital Market or any stock exchange or market. The shares of common stock issued in the rights offering will also be traded on the NASDAQ Capital Market under the same symbol.

Our board of directors may cancel the rights offering at any time prior to the expiration of the rights offering for any reason. In the event the rights offering is cancelled, all subscription payments received by the subscription agent for the rights offering will be promptly returned, without interest.

We have engaged Advisory Group Equity Services, Ltd. doing business as RHK Capital (“RHK Capital”) as dealer-manager for this offering and placement agent for any unsubscribed shares. See “Plan of Distribution.”

	Subscription Price	Dealer Manager Fees and Expenses(1)	Proceeds, Before Expenses, to us
Per share (2)	\$ _____	\$ _____	\$ _____
Total (2)	\$ _____	\$ _____	\$ _____

- (1) In connection with the rights offering, we have agreed to pay RHK Capital, the dealer-manager for this offering, a cash fee of 6.0% of the gross proceeds of this offering, a non-accountable expense allowance of 1.8% of the gross proceeds of this offering, and an out-of-pocket accountable expense allowance of 0.2% of the gross proceeds of this offering. For any unsubscribed shares of common stock placed by RHK Capital during the 45-day placement period following the expiration of the rights offering, we have agreed to pay RHK Capital a placement fee equal to 6.0% of such sales, in lieu of the dealer-manager fee, together with a continuing 1.8% non-accountable expense fee and out-of-pocket accountable expense allowance of 0.2% of the gross proceeds of the offering.
- (2) Assumes that the rights offering is fully subscribed and that subscription rights are exercised for 12,000,000 shares. If the aggregate number of shares of common stock for which subscription rights are exercised exceeds 12,000,000 shares, our board of directors, in its sole discretion, will have the right, but no obligation, to increase the size of the offering to subscription rights to purchase up to an aggregate 15,000,000 shares.

The exercise of your subscription rights for shares of our common stock involves risks. See “Risk Factors” beginning on page 15 of this prospectus to read about important factors you should consider before exercising your subscription rights.

We are an “emerging growth company” as defined under the federal securities laws and are subject to reduced public company reporting requirements. Please read the disclosures in this prospectus for more information.

Neither the Securities and Exchange Commission (the “SEC”) nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

If you have any questions or need further information about the rights offering, please call D.F. King & Co., Inc., our information agent for the rights offering, at (866) 796-1290, or by email at htbx@dfking.com.

Dealer-Manager



The date of this prospectus is _____, 2017

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You should rely only on the information contained in this prospectus and any free writing prospectus that we have authorized for use in connection with this offering. Neither we nor the dealer-manager has authorized anyone to provide you with information that is different. We are offering to sell, and seeking offers to buy, the securities covered hereby only in jurisdictions where offers and sales are permitted. The information in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or any sale of the securities covered hereby. Our business, financial condition, results of operations and prospects may have changed since that date. We are not, and the dealer-manager is not, making an offer of these securities in any jurisdiction where the offer is not permitted.

For investors outside the United States: Neither we nor the dealer-manager has taken any action that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the securities covered hereby and the distribution of this prospectus outside of the United States.

This prospectus includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. We believe that the data obtained from these industry publications and third-party research, surveys and studies are reliable. We are ultimately responsible for all disclosure included in this prospectus.

Except where the context requires otherwise, in this prospectus the “Company,” “Heat Biologics,” “Heat,” “we,” “us” and “our” refer to Heat Biologics, Inc., a Delaware corporation formed in June 2008, and, where appropriate, its subsidiaries, Heat Biologics I, Inc., Heat Biologics III, Inc., Heat Biologics IV, Inc., Heat Biologics GmbH, Heat Biologics Australia Pty LTD and Pelican Therapeutics, Inc.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus. This summary is not intended to be complete and does not contain all of the information that you should consider before deciding to invest in our securities. You should read this entire prospectus carefully, especially the “Risk Factors” section beginning on page 15 and our financial statements and the notes thereto contained in the prospectus, before making an investment decision.

Overview

Heat Biologics is a biopharmaceutical company developing immunotherapies designed to activate a patient’s CD8+ “Killer” T-cells against cancer. Our T-Cell Activation Platform (TCAP) produces therapies designed to turn "cold" tumors "hot" and be administered in combination with checkpoint inhibitor therapies and other immuno-modulators to increase their effectiveness. We can also utilize our TCAP approach to combine with existing T-cell checkpoint inhibitors and co-stimulators in a single treatment. This offers the potential benefit of combination immunotherapy without the need for multiple, independent biologic products. We are currently enrolling patients in our Phase 2 clinical trial for non-small cell lung cancer, in combination with Bristol-Myers Squibb’s nivolumab (Opdivo®). We also have numerous pre-clinical programs at various stages of development.

Through our *ImPACT*® platform technology, we have developed product candidates that consist of live, allogeneic “*off-the-shelf*” genetically-modified, irradiated human cancer cells. These cells are intended to secrete a broad spectrum of Cancer Testis Antigens (CTA), classified as tumor antigens, together with the gp96 protein. Our *ImPACT*® technology achieves this by reprogramming live tumor cells to secrete gp96, along with their chaperoned tumor antigens; thereby, transforming the allogeneic cells into machines that activate a robust “killer” CD8+ T cell immune attack against a patient’s cancer. Unlike autologous or “personalized” therapeutic, monotherapy approaches that either require the extraction of blood or tumor tissue from each patient or the creation of an individualized treatment, our product candidates are fully allogeneic, and do not require extraction of individual patient’s material or custom manufacturing. As a result, our product candidates can be mass-produced and readily available for immediate patient use. Because each patient receives the same treatment, we believe that our immunotherapy approach offers logistical, manufacturing and other cost benefits, compared to patient-specific or precision medicine approaches.

Our lead *ImPACT*® program, HS-110, is in a Phase 2 clinical trial focused on non-small cell lung cancer in combination with Bristol-Myers Squibb’s nivolumab (Opdivo®). HS-110 is made of a cancer cell line that has been genetically modified using our *ImPACT* technology system. It is designed to secrete a wide range of lung cancer-associated antigens bound to gp96 proteins, while activating a broad, T cell mediated immune response against the patient’s cancer.

Our *ComPACT*™ platform technology, currently in preclinical development, is a dual-acting immunotherapy, combining a pan-antigen T-cell activator and a T-cell co-stimulator in a single product, offering the potential benefits of combination immunotherapy without the need for multiple, independent biologic products. The platform offers broad versatility and has been engineered to incorporate into the gp96-Ig expression vector and various fusion proteins targeting co-stimulatory receptors, including but not limited to, OX40, ICOS, GITR and TLIA.

In May, we acquired two T cell co-stimulators through our acquisition of 80% of the outstanding equity of Pelican Therapeutics, Inc. (“Pelican”), broadening our pipeline and strengthening our portfolio in the emerging T-cell activation space. We believe the use of these therapeutic agents, in combination with other immunotherapies, have the potential dramatically improve patient outcomes.

Pelican is the only company with a disclosed preclinical pipeline targeting the T-cell co-stimulator, TNFRSF25. We believe PTX-35 can activate memory CD8+ cytotoxic T-cells and eliminate tumor cells in patients. This solution is designed to harness the body's natural tolerance mechanisms to reprogram the immune system and provide a long-term, durable effect after a short course of therapy. Combined with other immunotherapies, including *ImPACT* and *ComPACT*, PTX-35 could boost anti-cancer responses due to its potential to improve the durability of antigen-specific immune responses and a preferential specificity for stimulating the production of memory CD8+ t cells. In May 2016, a \$15.2 million grant was awarded to Pelican from the Cancer Prevention and Research Institute of Texas (CPRIT) to support further development of PTX-35 and examine the benefits it may provide to patients with several types of cancers, such as lung, lymphoma, prostate, pancreatic and ovarian.

PTX-15, Pelican's second product candidate, is a human TL1A-Ig fusion protein designed to trigger regulatory T-cell proliferation. We believe it can provide precise control of the regulatory arm of our immune system, and can be used in immuno-oncology or to prevent inflammation in autoimmune diseases and transplantation. As both Pelican therapies are based on natural, existing components of the immune system, we expect they will be safer, longer-lasting, and more effective than traditional medicines after only a short course of therapy.

Our wholly-owned subsidiary, Zolovax, Inc. ("Zolovax"), is in preclinical studies to develop therapeutic and preventative medicines to treat infectious diseases based on our gp96 therapeutic technology, with a current focus on the development of a Zika vaccine in collaboration with the University of Miami. Other infectious diseases of interest include HIV, West Nile virus, and Dengue and yellow fever.

General Corporate Information

We were incorporated under the laws of the State of Delaware on June 10, 2008. Our principal offices are located at 801 Capitola Drive, Bay 12, Durham, North Carolina 27713. Our website address is www.heatbio.com. We make our periodic and current reports that are filed with the Securities and Exchange Commission (the "SEC") available, free of charge, on our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The information contained in, and that can be accessed through, our website is not incorporated into and is not a part of this prospectus.

Implications of Being an Emerging Growth Company

We qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"). As an emerging growth company, we intend to take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

- allowance to provide only two years of audited financial statements in addition to any required unaudited interim financial statements with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- reduced disclosure about our executive compensation arrangements;
- no non-binding advisory votes on executive compensation or golden parachute arrangements; and
- exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these provisions for up to five years or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company on the date that is the earliest of: (i) the last day of the fiscal year in which we have total annual gross revenues of \$1 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of our initial public offering; (iii) the date on which we have issued more than \$1 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer under the rules of the SEC. We have taken advantage of reduced reporting requirements in this prospectus. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you have beneficial ownership.

THE RIGHTS OFFERING

The following summary describes the principal terms of the rights offering, but is not intended to be complete. See the information under the heading “The Rights Offering” in this prospectus for a more detailed description of the terms and conditions of the rights offering.

Securities Offered

We are distributing, at no charge, to holders of our common stock and holders of our warrants on the record date non-transferrable subscription rights to purchase up to an aggregate of 12,000,000 shares of our common stock. Subject to proration as described below, holders of our common stock will receive one subscription right for each share of common stock owned at, and our warrant holders will receive one subscription right for each share of common stock into which the warrants held by them were exercisable at, 5:00 p.m., New York City time, on October 13, 2017. If the aggregate number of shares of common stock for which subscription rights are exercised exceeds 12,000,000 shares, our board of directors, in its sole discretion, will have the right, but no obligation, to increase the size of the offering to subscription rights to purchase up to an aggregate 15,000,000 shares. The subscription rights may be exercised at any time beginning on the date of this prospectus.

Basic Subscription Privilege

Subject to proration, the basic subscription privilege of each subscription right will entitle you to purchase one share of our common stock at a subscription price equal to between 88%-92% of the volume weighted average price per share of our common stock on the NASDAQ Capital Market for the five trading days immediately preceding and including October 13, 2017, rounded down to the nearest penny. The exact subscription price per share of our common stock will be determined by our pricing committee after the record date.

Proration

All subscriptions, including subscriptions pursuant to the basic subscription privilege, are subject to proration. If the basic subscription rights are exercised for an amount in excess of 12,000,000 shares of common stock (or in excess of 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), the basic subscription rights that have been exercised will be reduced on a pro-rata basis based on the number of shares each rights holder subscribed for under the basic subscription right, subject to adjustment to eliminate fractional shares, so that the total number of shares issued upon exercise of subscription rights shall equal 12,000,000 shares (or 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), and any excess subscription amount received by the subscription agent will be returned, without interest, as soon as practicable after the rights offering has expired and all prorating calculations and reductions contemplated by the terms of the rights offering have been effected.

Over-Subscription Privilege

If you fully exercise your basic subscription privilege and other stockholders do not fully exercise their basic subscription privileges, you may also exercise an over-subscription privilege to purchase additional shares of common stock that remain unsubscribed at the expiration of the rights offering, subject to the availability and pro rata allocation of shares among stockholders exercising this over-subscription privilege. To the extent the number of the unsubscribed shares are not sufficient to satisfy all of the properly exercised over-subscription privileges requests, then the available shares will be prorated among those who properly exercised over-subscription privileges based on the number of shares each rights holder subscribed for under the basic subscription right. If this pro rata allocation results in any stockholder receiving a greater number of shares of common stock than the stockholder subscribed for pursuant to the exercise of the over-subscription privilege, then such stockholder will be allocated only that number of shares for which the stockholder oversubscribed, and the remaining shares of common stock will be allocated among all other stockholders exercising the over-subscription privilege on the same pro rata basis described above. The proration process will be repeated until all shares of common stock have been allocated or all over-subscription exercises have been fulfilled, whichever occurs earlier.

Limitations on Exercise

Unless we otherwise agree in writing, a person or entity, together with related persons or entities, may not exercise subscription rights (including over-subscription privileges) to purchase shares of our common stock that, when aggregated with their existing ownership, would result in such person or entity, together with any related persons or entities, owning in excess of twenty percent (20%) of our issued and outstanding shares of common stock following the closing of the transactions contemplated by this rights offering.

In the event that the exercise by a stockholder of the basic subscription privilege or the over-subscription privilege could, as determined by the Company in its sole discretion, potentially result in a limitation on the Company's ability to use the Tax Attributes under the Code and rules promulgated by the IRS, the Company may, but is under no obligation to, reduce the exercise by such stockholder of the basic subscription privilege or the over-subscription privilege to such number of shares of common stock as the Company, in its sole discretion, shall determine to be advisable in order to preserve the Company's ability to use the Tax Attributes.

Record Date

5:00 p.m., New York City time, on October 13, 2017

Expiration Date of the Rights Offering

5:00 p.m., New York City time, on November 8, 2017

Subscription Price

The per share subscription price will be equal to a range of 88%-92% of the volume weighted average price per share of our common stock on the NASDAQ Capital Market for the five trading days immediately preceding and including October 13, 2017, rounded down to the nearest penny. To be effective, any payment related to the exercise of a right must clear prior to the expiration of the rights offering.

Use of Proceeds	We are conducting the rights offering to raise capital that we intend to use to fund our and our subsidiaries' preclinical and clinical programs and for working capital and general corporate purposes, including to acquire, license or invest in complementary businesses, technologies, product candidates or other intellectual property. See "Use of Proceeds."
Non-Transferability of Rights	The subscription rights may not be sold, transferred or assigned and will not be listed for trading on the NASDAQ Capital Market or any stock exchange or market.
No Board Recommendation	Although members of our board of directors may invest their own money in the rights offering, our board of directors is making no recommendation regarding your exercise of the subscription rights. You are urged to make your decision based on your own assessment of our business and the rights offering. Please see "Risk Factors" for a discussion of some of the risks involved in investing in our common stock.
No Revocation	All exercises of subscription rights are irrevocable, even if you later learn information that you consider to be unfavorable to the exercise of your subscription rights and even if the rights offering is extended by our board of directors. However, if we amend the rights offering to allow for an extension of the rights offering for a period of more than 30 days or make a fundamental change to the terms of the rights offering set forth in this prospectus, you may cancel your subscription and receive a refund of any money you have advanced. You should not exercise your subscription rights unless you are certain that you wish to purchase additional shares of our common stock at a subscription price equal to 88%-92% of the volume weighted average price per share of our common stock on the NASDAQ Capital Market for the five trading days immediately preceding and including October 13, 2017, rounded down to the nearest penny.
No Minimum Requirements	There is no minimum purchase requirement for closing this offering, and no minimum purchase requirement for any subscription rights holder.
U.S. Federal Income Tax Considerations	For U.S. federal income tax purposes holders of shares of our common stock and holders of warrants to acquire our common stock generally should not recognize income or loss in connection with the receipt or exercise of subscription rights unless, by way of example only, the rights offering is part of a "disproportionate distribution" within the meaning of applicable tax rules (in which case you may recognize taxable income upon receipt of the subscription rights). We believe that the rights offering should not be treated as part of a disproportionate distribution, but that conclusion is unclear and is not binding on the IRS or the courts. You are urged to consult your own tax advisor as to your particular tax consequences resulting from the receipt and exercise of subscription rights and the receipt, ownership and disposition of our common stock. For further information, please see "Material U.S. Federal Income Tax Considerations."

Extension, Cancellation and Amendment

We have the option to extend the expiration of the rights offering for a period not to exceed 30 days by giving oral or written notice to the subscription agent prior to the expiration date of the rights offering, although we do not presently intend to do so. If we elect to extend the expiration of the rights offering, we will issue a press release announcing such extension no later than 9:00 a.m., New York City time, on the next business day after the most recently announced expiration time of the rights offering. We will extend the duration of the rights offering as required by applicable law or regulation and may choose to extend it if we decide to give investors more time to exercise their subscription rights in the rights offering.

Our board of directors may cancel the rights offering at any time prior to the expiration of the rights offering for any reason. In the event the rights offering is cancelled, all subscription payments received by the subscription agent for the rights offering will be promptly returned, without interest.

Our board of directors, in its sole discretion, will have the right, but no obligation, to increase the size of the offering to subscription rights to purchase up to an aggregate 15,000,000 shares if the aggregate number of shares of common stock for which subscription rights are exercised exceeds 12,000,000 shares. An increase in the size of the offering will not constitute a fundamental change to the terms of the offering, and will not give persons who have exercised their subscription rights the opportunity to cancel their subscriptions.

Our board of directors also reserves the right to amend or modify the terms of the rights offering in its sole discretion. If we should make any fundamental changes to the terms of the rights offering set forth in this prospectus, we will file a post-effective amendment to the registration statement in which this prospectus is included, offer potential purchasers who have subscribed for rights the opportunity to cancel such subscriptions and issue a refund of any money advanced by such stockholder and recirculate an updated prospectus after the post-effective amendment is declared effective by the SEC. In addition, upon such event, we may extend the expiration date of the rights offering to allow holders of rights ample time to make new investment decisions and for us to recirculate updated documentation. Promptly following any such occurrence, we will issue a press release announcing any changes with respect to the rights offering and the new expiration date. The terms of the rights offering cannot be modified or amended after the expiration date of the rights offering. Although we do not presently intend to do so, we may choose to amend or modify the terms of the rights offering for any reason, including, without limitation, in order to increase participation in the rights offering. Such amendments or modifications may include a change in the subscription price, although no such change is presently contemplated.

Procedures for Exercise

To exercise your subscription rights, you must complete the rights certificate and deliver it to the subscription agent, Continental Stock Transfer & Trust Company, together with full payment for all the subscription rights you elect to exercise under the basic subscription privilege and over-subscription privilege. You may deliver the documents and payments by regular mail or commercial carrier. If regular mail is used for this purpose, we recommend using registered mail, properly insured, with return receipt requested.

If you cannot deliver your rights certificate to the subscription agent prior to the expiration of the rights offering, you may follow the guaranteed delivery procedures described under “The Rights Offering—Guaranteed Delivery Procedures.”

Transfer Agent Serving as Subscription Agent

Continental Stock Transfer & Trust Company

Information Agent

D.F. King & Co., Inc.

Dealer-Manager and Placement Agent

We have engaged Advisory Group Equity Services, Ltd. doing business as RHK Capital (“RHK Capital”) as the dealer-manager for this rights offering and placement agent for any unsubscribed shares of our common stock.

Shares Outstanding Before the Rights Offering

35,788,912 shares of our common stock ⁽¹⁾

Shares Outstanding After the Rights Offering

Assuming 12,000,000 shares of our common stock are issued in the rights offering through the exercise of subscription rights, we anticipate that 47,788,912 shares of our common stock will be outstanding following the completion of the rights offering. If our board of directors, in its sole discretion, determines to increase the offering size to subscription rights to purchase up to an aggregate of 15,000,000 shares of our common stock and all 15,000,000 shares are issued in the rights offering through the exercise of subscription rights, we anticipate that 50,788,912 shares of our common stock will be outstanding following the completion of the rights offering. ⁽¹⁾

Risk Factors

See “Risk Factors” beginning on page 15 to read about factors you should consider before you decide whether to exercise your subscription rights to purchase shares of our common stock.

Fees and Expenses

We will pay all fees charged by the subscription agent and the information agent in connection with this rights offering. We will also pay the fees and expenses charged by RHK Capital, as dealer-manager for this rights offering, as well as placement agent for any unsubscribed shares of common stock. You are responsible for paying any other commissions, fees, taxes or other expenses incurred in connection with the exercise of the subscription rights.

Distribution Arrangements

RHK Capital will act as dealer-manager for the rights offering. In such capacity, RHK Capital will provide marketing assistance and advice to our company in connection with the rights offering. Under the terms and subject to the conditions contained in the dealer-manager agreement, we have agreed to pay RHK Capital a cash fee of 6.0% of the gross proceeds of this offering, a non-accountable expense allowance up to 1.8% of the gross proceeds of the rights offering, and an out-of-pocket accountable expense allowance of 0.2% of the gross proceeds of this offering. RHK Capital will also act as placement agent for any unsubscribed shares of our common stock during the 45-day placement period following the expiration of the rights offering. We have agreed to pay RHK Capital a placement fee equal to 6.0% of such sales, in lieu of the dealer-manager fee, together with a continuing 1.8% non-accountable expense fee and out-of-pocket accountable expense allowance of 0.2% of the gross proceeds of the offering, with such placement fee and expenses not to exceed the aggregate amounts that would have been otherwise received by RHK Capital if the rights offering were to have been fully subscribed. We have agreed to indemnify RHK Capital and its affiliates against, or contribute to any losses arising out of, certain liabilities arising under the Securities Act of 1933, as amended (the "Securities Act"). RHK Capital's participation in this offering is subject to customary conditions contained in the dealer-manager agreement. The dealer-manager agreement also provides that the dealer-manager will not be subject to any liability to us in rendering the services contemplated by the dealer-manager agreement except for any act of bad faith or gross negligence of the dealer-manager. RHK Capital and its affiliates may provide to us from time to time in the future in the ordinary course of their business certain financial advisory, investment banking and other services for which they will be entitled to receive customary fees. RHK Capital does not make any recommendation with respect to whether you should exercise the basic subscription or over-subscription privileges or to otherwise invest in our company.

Payments to Broker-Dealers and Other Intermediaries

The dealer-manager, RHK Capital, has informed us that it has entered into or intends to enter into selected dealer agreements with other broker-dealers pursuant to which it will re-allow 4.0% of its dealer-manager fee to each broker-dealer whose clients purchase shares of common stock in this offering pursuant to their subscription rights. See "Plan of Distribution."

NASDAQ Capital Market Trading Symbol for Our Common Stock

Shares of our common stock are traded on the NASDAQ Capital Market under the symbol "HTBX." The shares of common stock issued in the rights offering will also be traded on the NASDAQ Capital Market under the same symbol.

Questions

If you have any questions or need further information about this rights offering, please call D.F. King & Co., Inc., our information agent for this rights offering, at (866) 796-1290 (toll free) or htbx@dfking.com.

(1) Based upon the total number of issued and outstanding shares as of September 13, 2017, but does not include, as of that date:

- 3,103,963 shares of common stock reserved for issuance upon the exercise of outstanding warrants with a weighted average exercise price of \$1.46 per share;
- 2,663,549 shares of common stock reserved for issuance upon the exercise of outstanding stock options with a weighted average exercise price of \$2.04 per share; and
- 5,482,184 shares of common stock available for future grant under our equity incentive plans.

QUESTIONS AND ANSWERS ABOUT THE RIGHTS OFFERING

What is the rights offering?

We are distributing to holders of our common stock and holders of our warrants, at no charge, non-transferable subscription rights to purchase shares of our common stock. Our stockholders will receive one subscription right for each share of common stock owned at, and our warrant holders will receive one subscription right for each share of common stock into which the warrants held by them were exercisable at, 5:00 p.m., New York City time, on October 13, 2017; provided that the rights may only be exercised for a maximum of 12,000,000 shares of common stock, subject to proration. The subscription rights will be evidenced by rights certificates. If the aggregate number of shares of common stock for which subscription rights are exercised exceeds 12,000,000 shares, our board of directors, in its sole discretion, will have the right, but no obligation, to increase the size of the offering to subscription rights to purchase up to an aggregate 15,000,000 shares. Each subscription right will entitle the holder to a basic subscription privilege and an over-subscription privilege.

What is the basic subscription privilege?

Subject to proration, the basic subscription privilege of each subscription right gives holders the opportunity to purchase one share of our common stock at a subscription price equal to 88%-92% of the volume weighted average price per share of our common stock on the NASDAQ Capital Market for the five trading days immediately preceding and including October 13, 2017, rounded down to the nearest penny. You may exercise the basic subscription privilege of any number of your subscription rights, or you may choose not to exercise any subscription rights.

If the basic subscription rights are exercised for an amount in excess of 12,000,000 shares of common stock (or in excess of 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), the basic subscription rights that have been exercised will be reduced on a pro-rata basis, subject to adjustment to eliminate fractional shares, so that the total number of shares issued upon exercise of subscription rights equal 12,000,000 shares (or 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), and any excess subscription amount received by the subscription agent will be promptly returned, without interest, after the rights offering has expired and all prorating calculations and reductions contemplated by the terms of the rights offering have been effected.

What is the over-subscription privilege?

We do not expect all of our stockholders to exercise all of their basic subscription privileges. The over-subscription privilege provides stockholders that exercise all of their basic subscription privileges the opportunity to purchase the shares that are not purchased by other stockholders. If you fully exercise your basic subscription privilege and basic subscription rights are exercised for an amount less than 12,000,000 shares of common stock (or 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), you may also exercise an over-subscription privilege to purchase additional shares of common stock that remain unsubscribed at the expiration of the rights offering, subject to the availability and *pro rata* allocation of shares among stockholders exercising this over-subscription privilege. To the extent the number of the unsubscribed shares are not sufficient to satisfy all of the properly exercised over-subscription privileges requests, then the available shares will be prorated among those who properly exercised over-subscription privileges based on the number of shares each rights holder subscribed for under the basic subscription right. If this *pro rata* allocation results in any stockholder receiving a greater number of shares of common stock than the stockholder subscribed for pursuant to the exercise of the over-subscription privilege, then such stockholder will be allocated only that number of shares for which the stockholder oversubscribed, and the remaining shares of common stock will be allocated among all other stockholders exercising the over-subscription privilege on the same *pro rata* basis described above. The proration process will be repeated until all shares of common stock have been allocated or all over-subscription exercises have been fulfilled, whichever occurs earlier.

In order to properly exercise your over-subscription privilege, you must deliver the subscription payment related to your over-subscription privilege prior to the expiration of the rights offering. Because we will not know the total number of unsubscribed shares prior to the expiration of the rights offering, if you wish to maximize the number of shares you purchase pursuant to your over-subscription privilege, you will need to deliver payment in an amount equal to the aggregate subscription price for the maximum number of shares of our common stock available to you, assuming that no stockholder other than you has purchased any shares of our common stock pursuant to their basic subscription privilege and over-subscription privilege. See “The Rights Offering—The Subscription Rights—Over-Subscription Privilege.”

Fractional shares of our common stock resulting from the exercise of the over-subscription privilege will be eliminated by rounding down to the nearest whole share, with the total subscription payment being adjusted accordingly. Any excess subscription payments received by the subscription agent will be promptly returned, without interest.

What are the limitations on the exercise of the basic subscription privilege and over-subscription privilege?

Unless we otherwise agree in writing, a person or entity, together with related persons or entities, may not exercise subscription rights (including over-subscription privileges) to purchase shares of our common stock that, when aggregated with their existing ownership, would result in such person or entity, together with any related persons or entities, owning in excess of twenty percent (20%) of our issued and outstanding shares of common stock following the closing of the transactions contemplated by this rights offering.

In the event that the exercise by a stockholder of the basic subscription privilege or the over-subscription privilege could, as determined by the Company in its sole discretion, potentially result in a limitation on the Company’s ability to use the Tax Attributes under the Code and rules promulgated by the IRS, the Company may, but is under no obligation to, reduce the exercise by such stockholder of the basic subscription privilege or the over-subscription privilege to such number of shares of common stock as the Company, in its sole discretion, shall determine to be advisable in order to preserve the Company’s ability to use the Tax Attributes.

Why are we conducting the rights offering?

We are conducting the rights offering to raise capital that we intend to use to fund our and our subsidiaries’ preclinical and clinical programs and for working capital and general corporate purposes, including to acquire, license or invest in complementary businesses, technologies, product candidates or other intellectual property. See “Use of Proceeds.” We believe that the rights offering will strengthen our financial condition by generating additional cash and increasing our stockholders’ equity.

How was the per share subscription price determined?

In determining the subscription price, our board of directors considered a number of factors, including: the likely cost of capital from other sources, the price at which our stockholders might be willing to participate in the rights offering, historical and current trading prices of our common stock, our need for liquidity and capital and the desire to provide an opportunity to our stockholders to participate in the rights offering on a *pro rata* basis. In conjunction with its review of these factors, our board of directors also reviewed a range of discounts to market value represented by the subscription prices in various prior rights offerings of public companies. The subscription price is not necessarily related to our book value, net worth or any other established criteria of value and may or may not be considered the fair value of our common stock to be offered in the rights offering. We cannot give any assurance that our common stock will trade at or above the subscription price in any given time period.

Am I required to exercise all of the subscription rights I receive in the rights offering?

No. You may exercise any number of your subscription rights, or you may choose not to exercise any subscription rights. However, if you choose not to exercise your subscription rights in full, the relative percentage of our common stock that you own will decrease, and your voting and other rights will be diluted. In addition, if you do not exercise your basic subscription privilege in full, you will not be entitled to participate in the over-subscription privilege.

How soon must I act to exercise my subscription rights?

The subscription rights may be exercised at any time beginning on the date of this prospectus and prior to the expiration of the rights offering, which is 5:00 p.m., New York City time, on November 8, 2017. If you elect to exercise any rights, the subscription agent must actually receive all required documents and payments from you prior to the expiration of the rights offering. Although we have the option of extending the expiration of the rights offering for a period not to exceed 30 days, we currently do not intend to do so.

May I transfer my subscription rights?

No. You may not sell or transfer your subscription rights to anyone.

Are we requiring a minimum subscription to complete the rights offering?

No.

Are there any conditions to completing the rights offering?

No (other than this registration statement being declared effective by the SEC).

Can our board of directors extend, cancel or amend the rights offering?

We have the option to extend the expiration of the rights offering for a period not to exceed 30 days by giving oral or written notice to the subscription agent prior to the expiration date of the rights offering, although we do not presently intend to do so. If we elect to extend the expiration of the rights offering, we will issue a press release announcing such extension no later than 9:00 a.m., New York City time, on the next business day after the most recently announced expiration time of the rights offering. We will extend the duration of the rights offering as required by applicable law or regulation and may choose to extend it if we decide to give investors more time to exercise their subscription rights in the rights offering. An extension in the offering termination date for up to 30 days will not constitute a fundamental change to the terms of the offering, and will not give persons who have exercised their subscription rights the opportunity to cancel their subscriptions.

Our board of directors may cancel the rights offering at any time prior to the expiration of the rights offering for any reason. In the event the rights offering is cancelled, all subscription payments received by the subscription agent for the rights offering will be promptly returned, without interest.

Our board of directors, in its sole discretion, will have the right, but no obligation, to increase the size of the offering to subscription rights to purchase up to an aggregate 15,000,000 shares if the aggregate number of shares of common stock for which subscription rights are exercised exceeds 12,000,000 shares. An increase in the size of the offering will not constitute a fundamental change to the terms of the offering, and will not give persons who have exercised their subscription rights the opportunity to cancel their subscriptions.

Our board of directors also reserves the right to amend or modify the terms of the rights offering in its sole discretion. If we should make any fundamental changes to the terms of the rights offering set forth in this prospectus, we will file a post-effective amendment to the registration statement in which this prospectus is included, offer potential purchasers who have subscribed for rights the opportunity to cancel such subscriptions and issue a refund of any money advanced by such stockholder and recirculate an updated prospectus after the post-effective amendment is declared effective by the SEC. In addition, upon such event, we may extend the expiration date of the rights offering to allow holders of rights ample time to make new investment decisions and for us to recirculate updated documentation. Promptly following any such occurrence, we will issue a press release announcing any changes with respect to the rights offering and the new expiration date. The terms of the rights offering cannot be modified or amended after the expiration date of the rights offering. Although we do not presently intend to do so, we may choose to amend or modify the terms of the rights offering for any reason, including, without limitation, in order to increase participation in the rights offering. Such amendments or modifications may include a change in the subscription price, although no such change is presently contemplated.

Has our board of directors made a recommendation to our stockholders regarding the rights offering?

Neither our board of directors nor the dealer-manager is making any recommendation to stockholders regarding the exercise of rights in the rights offering. You should make an independent investment decision about whether or not to exercise your rights. Stockholders who exercise subscription rights risk investment loss on new money invested. We cannot assure you that the market price for our common stock will remain above the subscription price or that anyone purchasing shares at the subscription price will be able to sell those shares in the future at the same price or a higher price. If you do not exercise your rights, you will lose any value represented by your rights and your percentage ownership interest in us will be diluted. Please see “Risk Factors” for a discussion of some of the risks involved in investing in our common stock.

What will happen if I choose not to exercise my subscription rights?

If you do not exercise any subscription rights, the number of shares of our common stock you own will not change; however, due to the fact that shares of common stock may be purchased by other stockholders in the rights offering, your percentage ownership in the Company after the completion of the rights offering will be diluted.

How do I exercise my subscription rights? What forms and payment are required to purchase the shares of our common stock?

If you wish to participate in the rights offering, you must take the following steps:

- (i) deliver payment to the subscription agent using the methods outlined in this prospectus before 5:00 p.m., New York City time, on November 8, 2017; and
- (ii) deliver a properly completed rights certificate to the subscription agent before 5:00 p.m., New York City time, on November 8, 2017.

If you cannot deliver your rights certificate to the subscription agent prior to the expiration of the rights offering, you may follow the guaranteed delivery procedures described under “The Rights Offering—Guaranteed Delivery Procedures.”

If you send a payment that is insufficient to purchase the number of shares you requested, or if the number of shares you requested is not specified in the forms, the payment received will be applied to exercise your subscription rights to the full extent possible based on the amount of the payment received, subject to the elimination of fractional shares.

When will I receive my new shares?

If you purchase shares of our common stock through the rights offering, you will receive your new shares as soon as practicable after the closing of the offering.

After I send in my payment and rights certificate, may I cancel my exercise of subscription rights?

No. All exercises of subscription rights are irrevocable, even if you later learn information that you consider to be unfavorable to the exercise of your subscription rights and even if the rights offering is extended by our board of directors. However, if we amend the rights offering to allow for an extension of the rights offering for a period of more than 30 days or make a fundamental change to the terms of the rights offering set forth in this prospectus, you may cancel your subscription and receive a refund of any money you have advanced. You should not exercise your subscription rights unless you are certain that you wish to purchase additional shares of our common stock at the subscription price equal to a range of 88%-92% of the volume weighted average price per share of our common stock on the NASDAQ Capital Market for the five trading days immediately preceding and including October 13, 2017, rounded down to the nearest penny.

What should I do if I want to participate in the rights offering but my shares are held in the name of my broker, dealer, custodian bank or other nominee?

If you hold your shares of our common stock or our warrants in the name of a broker, dealer, custodian bank or other nominee, then your broker, dealer, custodian bank or other nominee is the record holder of the shares or warrants you own. The record holder must exercise the subscription rights on your behalf for the shares of our common stock you wish to purchase.

If you wish to participate in the rights offering and purchase shares of our common stock, please promptly contact the record holder of your shares. We will ask your broker, dealer, custodian bank or other nominee to notify you of the rights offering. You should complete and return to your record holder the form entitled “Beneficial Owner Election Form.” You should receive this form from your record holder with the other rights offering materials.

How many shares of our common stock will be outstanding after the rights offering?

Assuming 12,000,000 shares of our common stock are issued in the rights offering through the exercise of subscription rights, we anticipate that 47,788,912 shares of our common stock will be outstanding following the completion of the rights offering. Assuming our board of directors, in its sole discretion, determines to increase the offering size to subscription rights to purchase up to 15,000,000 shares of our common stock are issued in the rights offering through the exercise of subscription rights, we anticipate that 50,788,912 shares of our common stock will be outstanding following the completion of the rights offering.

How much proceeds will the Company receive from the rights offering?

Assuming full participation of 12,000,000 shares in the rights offering, we estimate that the net proceeds from the rights offering will be approximately \$8.1 million, after deducting expenses related to this offering payable by us estimated at approximately \$0.9 million, including dealer-manager fees. Please see “Use of Proceeds.”

Are there risks in exercising my subscription rights?

Yes. The exercise of your subscription rights involves risks. Exercising your subscription rights involves the purchase of additional shares of our common stock and should be considered as carefully as you would consider any other equity investment. Among other things, you should carefully consider the risks described under the headings “Risk Factors” in this prospectus.

May stockholders and warrant holders in all states participate in the rights offering?

Although we intend to distribute the rights to all stockholders and holders of our warrants, we reserve the right in some states to require such holders, if they wish to participate, to state and agree upon exercise of their respective rights that they are acquiring the shares for investment purposes only, and that they have no present intention to resell or transfer any shares acquired. Our securities are not being offered in any jurisdiction where the offer is not permitted under applicable local laws.

If the rights offering is not completed, will my subscription payment be refunded to me?

Yes. The subscription agent will hold all funds it receives in a segregated bank account until completion of the rights offering. If the rights offering is not completed, all subscription payments received by the subscription agent will be promptly returned, without interest. If you own shares in “street name,” it may take longer for you to receive payment because the subscription agent will return payments through the record holder of your shares.

Will the subscription rights be listed on a stock exchange or national market?

The subscription rights may not be sold, transferred or assigned and will not be listed for trading on the NASDAQ Capital Market or any stock exchange or market. However, the shares of common stock issued in the rights offering will be traded on the NASDAQ Capital Market under the symbol “HTBX.”

How do I exercise my subscription rights if I live outside the United States?

We will not mail this prospectus or the rights certificates to stockholders whose addresses are outside the United States or who have an army post office or foreign post office address. The subscription agent will hold the rights certificates for their account. To exercise subscription rights, our foreign stockholders must notify the subscription agent and timely follow the procedures described in “The Rights Offering—Foreign Stockholders.”

What fees or charges apply if I purchase shares of our common stock?

We are not charging any fee or sales commission to issue subscription rights to you or to issue shares to you if you exercise your subscription rights. If you exercise your subscription rights through the record holder of your shares, you are responsible for paying any fees your record holder may charge you.

What are the U.S. federal income tax consequences of receipt of or exercise of subscription rights?

For U.S. federal income tax purposes, you generally should not recognize income or loss in connection with the receipt or exercise of subscription rights unless, by way of example only, the rights offering is part of a “disproportionate distribution” within the meaning of applicable tax rules (in which case you may recognize taxable income upon receipt of the subscription rights). We believe that the rights offering should not be treated as part of a disproportionate distribution, but that conclusion is unclear and is not binding on the IRS or the courts. You are urged to consult your own tax advisor as to your particular tax consequences resulting from the receipt and exercise of subscription rights and the receipt, ownership and disposition of our common stock. For further information, please see “Material U.S. Federal Income Tax Considerations.”

To whom should I send my forms and payment?

If your shares are held in the name of a broker, dealer or other nominee, then you should send your subscription documents, rights certificate, notices of guaranteed delivery and subscription payment to that record holder. If you are the record holder, then you should send your subscription documents, rights certificate, notices of guaranteed delivery and subscription payment by hand delivery, first class mail or courier service to:

Continental Stock Transfer & Trust Company
Attn: Corporate Actions Department
1 State Street, 30th Floor
New York, New York 10004

You are solely responsible for completing delivery to the subscription agent of your subscription documents, rights certificate and payment. We urge you to allow sufficient time for delivery of your subscription materials to the subscription agent.

Whom should I contact if I have other questions?

If you have other questions or need assistance, please contact the information agent, D.F. King & Co., Inc., at (866) 796-1290 (toll free) or htbx@dfking.com.

RISK FACTORS

An investment in our securities involves a high degree of risk. You should carefully consider the risks and uncertainties described below together with all of the other information contained or incorporated by reference in this prospectus, including our consolidated financial statements and the related notes, before making a decision to invest in our securities or to exercise your subscription rights to purchase shares of our common stock. You should also consider the risks, uncertainties and assumptions discussed under Item 1A, "Risk Factors," in Part I of our Annual Report on Form 10-K for the year ended December 31, 2016 and Item 1A, "Risk Factors," in Part II of our Quarterly Reports on Form 10-Q for the periods ended March 31, 2017 and June 30, 2017, respectively, and any updates or other risks contained in other filings that we may make with the SEC after the date of this prospectus, all of which are incorporated herein by reference, and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future and any additional prospectus supplement. If any of these risks actually occur, our business, results of operations and financial condition could suffer. In that case, the market price of our common stock could decline, and you may lose all or part of your investment.

Risks Related to this Rights Offering

Your ownership interest in our company may be diluted as a result of the rights offering.

Common stockholders who do not fully exercise their respective subscription rights should expect that they will, at the completion of the rights offering, own a smaller proportional interest in our company than would otherwise be the case had they fully exercised their basic subscription rights.

The market price of our common stock is volatile and may decline before or after the subscription rights expire.

The market price of our common stock could be subject to wide fluctuations in response to numerous factors, some of which are beyond our control. These factors include, among other things, actual or anticipated variations in our costs of doing business, operating results and cash flow, the nature and content of our earnings releases and our competitors' earnings releases, customers, competitors or markets, changes in financial estimates by securities analysts, business conditions in our markets and the general state of the securities markets and the market for similar stocks, changes in capital markets that affect the perceived availability of capital to companies in our industries, governmental legislation or regulation, as well as general economic and market conditions, such as continued downturns in our economy and recessions.

We cannot assure you that the market price of our common stock will not decline after you elect to exercise your subscription rights. If that occurs, you may have committed to buy shares of our common stock in the rights offering at a price greater than the prevailing market price, and you could have an immediate unrealized loss. Moreover, we cannot assure you that following the exercise of your subscription rights that you will be able to sell your common stock at a price equal to or greater than the subscription price. Until shares are delivered upon expiration of the rights offering, you will not be able to sell the shares of our common stock that you purchase in the rights offering. Certificates (physical, electronic or book-entry form) representing shares of our common stock purchased will be delivered as soon as practicable after expiration of the rights offering. We will not pay you interest on funds delivered to the subscription agent pursuant to the exercise of subscription rights.

The rights offering may cause the price of our common stock to decrease.

Depending upon the trading price of our common stock at the time of our announcement of the rights offering and its terms, including the subscription price, together with the number of shares of common stock we propose to issue and ultimately will issue if the rights offering is completed, the rights offering may result in an immediate decrease in the market value of our common stock. This decrease may continue after the completion of the rights offering. If that occurs, you may have committed to buy shares of common stock in the rights offering at a price greater than the prevailing market price. Further, if a substantial number of rights are exercised and the holders of the shares received upon exercise of those rights choose to sell some or all of those shares, the resulting sales could depress the market price of our common stock. Your purchase of shares of our common stock in the rights offering may be at a price greater than the prevailing trading price. There is no assurance that following the exercise of your rights you will be able to sell your common stock at a price equal to or greater than the subscription price.

The subscription price determined for the rights offering is not necessarily an indication of the value of our common stock.

In determining the subscription price, our board of directors considered a number of factors, including: the likely cost of capital from other sources, the price at which our stockholders might be willing to participate in the rights offering, historical and current trading prices of our common stock, our need for liquidity and capital and the desire to provide an opportunity to our stockholders to participate in the rights offering on a *pro rata* basis. In conjunction with its review of these factors, our board of directors also reviewed a range of discounts to market value represented by the subscription prices in various prior rights offerings of public companies. The subscription price is not necessarily related to our book value, net worth or any other established criteria of value and may or may not be considered the fair value of our common stock to be offered in the rights offering. We cannot give any assurance that our common stock will trade at or above the subscription price in any given time period. We do not intend to change the subscription price in response to changes in the trading price of our common stock prior to the closing of the rights offering.

If you purchase shares of our common stock in the rights offering, you will incur immediate and substantial dilution.

Dilution is the difference between the subscription price per share and the pro forma net tangible book value per share after giving effect to the rights offering. The subscription price per share that you pay for shares of our common stock sold in the rights offering is substantially higher than our pro forma net tangible book value per share after giving effect to the rights offering. The subscription price will be equal to 88%-92% of the volume weighted average price per share of our common stock on the NASDAQ Capital Market for the five trading days immediately preceding and including October 13, 2017, rounded down to the nearest penny. Assuming the subscription price is determined to be \$0.75 (the last reported sale price of our common stock on October 9, 2017) you will incur immediate dilution in net tangible book value per share of \$0.56. As a result of this dilution, investors purchasing shares of our common stock in the rights offering may receive significantly less than the full subscription price that they paid for in the rights offering in the event of liquidation. See “Dilution” for additional information.

Completion of the rights offering is not subject to us raising a minimum offering amount and therefore proceeds may be insufficient to meet our objectives, thereby increasing the risk to investors in the rights offering.

Completion of the rights offering is not subject to us raising a minimum offering amount. As such, proceeds from this rights offering may not be sufficient to meet the objectives we state in this prospectus or other corporate milestones that we may set. Investors should not rely on the success of the rights offering to address our need for funding. Therefore, if you exercise the basic subscription privilege or the over-subscription privilege, you may be investing in a company that continues to desire additional capital.

The subscription rights are not transferable and there is no market for the subscription rights.

You may not sell, transfer or assign your subscription rights. The subscription rights are only transferable by operation of law. Because the subscription rights are non-transferable, there is no market or other means for you to directly realize any value associated with the subscription rights. You must exercise the subscription rights and acquire additional shares of our common stock to realize any value that may be embedded in the subscription rights.

None of our officers, directors or significant stockholders is obligated to exercise their subscription right and, as a result, the offering may be undersubscribed.

As a group, our officers and directors own or have the right to acquire, within 60 days of September 13, 2017, approximately 8.8% of our outstanding common stock. Although we expect one or more of our directors and executive officers to participate in this offering, we cannot guarantee you that any of our officers or directors or owners will exercise their basic or over-subscription privileges to purchase any shares issued in connection with the rights offering. As a result, the offering may be undersubscribed and proceeds may not be sufficient to meet the objectives we state in this prospectus or other corporate milestones that we may set.

If we terminate the rights offering for any reason, we will have no obligation other than to return subscription monies promptly.

We may decide, in our discretion and for any reason, to cancel or terminate the rights offering at any time prior to the expiration date. If the rights offering is terminated, we will have no obligation with respect to those rights that have been exercised except to return promptly, without interest or deduction, the subscription monies deposited with the subscription agent. If we terminate the rights offering and you have not exercised any rights, such rights will expire worthless.

Our common stock price may be volatile as a result of this rights offering.

The trading price of our common stock may fluctuate substantially. The price of the common stock that will prevail in the market after the rights offering may be higher or lower than the subscription price depending on many factors, some of which are beyond our control and may not be directly related to our operating performance. These factors include, but are not limited to, the following:

- price and volume fluctuations in the overall stock market from time to time;
- significant volatility in the market price and trading volume of our securities;
- actual or anticipated changes or fluctuations in our operating results;
- material announcements by us regarding business performance, financings, mergers and acquisitions or other transactions;
- general economic conditions and trends;
- competitive factors;
- loss of key supplier or distribution relationships; or
- departure of key personnel.

We will have broad discretion in the use of the net proceeds from the rights offering and may not use the proceeds effectively.

Although we plan to use the proceeds of the rights offering to raise capital that we intend to use to fund our and our subsidiaries' preclinical and clinical programs and for working capital and general corporate purposes, including to acquire, license or invest in complementary businesses, technologies, product candidates or other intellectual property, we will have broad discretion in determining precisely how the proceeds of the rights offering will be used. Our discretion is not substantially limited by the uses set forth in this prospectus in the section entitled "Use of Proceeds." While our board of directors believes the flexibility in application of the net proceeds is prudent, the broad discretion it affords entails increased risks to the investors in the rights offering. Investors in the rights offering have no current basis to evaluate the possible merits or risks of any application of the net proceeds of the rights offering. Our stockholders may not agree with the manner in which we choose to allocate and spend the net proceeds.

If you do not act on a timely basis and follow subscription instructions, your exercise of rights may be rejected.

Holders of subscription rights who desire to purchase shares of our common stock in the rights offering must act on a timely basis to ensure that all required forms and payments are actually received by the subscription agent prior to 5:00 p.m., New York City time, on the expiration date, unless extended. If you are a beneficial owner of shares of common stock or our warrants and you wish to exercise your rights, you must act promptly to ensure that your broker, dealer, custodian bank, trustee or other nominee acts for you and that all required forms and payments are actually received by your broker, dealer, custodian bank, trustee or other nominee in sufficient time to deliver such forms and payments to the subscription agent to exercise the rights granted in the rights offering that you beneficially own prior to 5:00 p.m., New York City time on the expiration date, as may be extended. We will not be responsible if your broker, dealer, custodian bank, trustee or other nominee fails to ensure that all required forms and payments are actually received by the subscription agent prior to 5:00 p.m., New York City time, on the expiration date, as may be extended.

If you fail to complete and sign the required subscription forms, send an incorrect payment amount, or otherwise fail to follow the subscription procedures that apply to your exercise in the rights offering, the subscription agent may, depending on the circumstances, reject your subscription or accept it only to the extent of the payment received. Neither we nor the subscription agent undertakes to contact you concerning an incomplete or incorrect subscription form or payment, nor are we under any obligation to correct such forms or payment. We have the sole discretion to determine whether a subscription exercise properly follows the subscription procedures.

If you make payment of the subscription price by uncertified check, your check may not clear in sufficient time to enable you to purchase shares in this rights offering.

Any uncertified check used to pay for shares to be issued in this rights offering must clear prior to the expiration date of this rights offering, and the clearing process may require five or more business days. If you choose to exercise your subscription rights, in whole or in part, and to pay for shares by uncertified check and your check has not cleared prior to the expiration date of this rights offering, you will not have satisfied the conditions to exercise your subscription rights and will not receive the shares you wish to purchase.

The U.S. federal income tax treatment of the receipt of subscription rights is somewhat uncertain and it may be treated as a taxable event to holders of shares of our stock and to holders of rights or warrants to acquire shares of our stock.

If, by way of example only, the rights offering is deemed to be part of a “disproportionate distribution” under section 305 of the Code, holders of shares of our common stock, and holders of rights or warrants to acquire shares of our common stock, may recognize taxable income for U.S. federal income tax purposes in connection with the receipt of subscription rights in the rights offering depending, in part, on our current and accumulated earnings and profits, the fair market value of the subscription rights and, if applicable, our stockholders’ tax basis in our common stock. A “disproportionate distribution” is a distribution or a series of distributions, including deemed distributions, that has the effect of the receipt of cash or other property by some Shareholders (defined below in the section entitled, “Material U.S. Federal Income Tax Considerations”) and an increase in the proportionate interest of other Shareholders in the company’s assets or earnings and profits. It is unclear whether the fact that we have outstanding options and certain other equity-based awards (other than the warrants contemplated in the section entitled, “Material U.S. Federal Income Tax Considerations”) could cause the receipt of subscription rights to be part of a disproportionate distribution. Although there are options and certain other equity-based awards (other than the previously mentioned warrants), the existence of which could impact the Shareholders, this offering does not address any of the tax issues, or potential tax issues, applicable to holders of such options or other equity-based awards. Please see “Material U.S. Federal Income Tax Considerations” for further information on the tax treatment of the rights offering.

The rights offering could impair or limit our net operating loss carryforwards.

As of June 30, 2017, we had net operating losses (NOLs) of approximately \$53.3 million for U.S. federal income tax purposes. Under the Code, an “ownership change” (defined below) with respect to a corporation can significantly limit the amount of pre-ownership change NOLs, and certain other tax assets and tax attributes, that the corporation may utilize after the ownership change to offset future taxable income. The effect of such limitations is a reduction of the amount of cash which would otherwise be available to the corporation to satisfy its obligations. An ownership change generally should occur if the aggregate stock ownership of holders of at least 5% of our stock increases by more than 50 percentage points over the preceding three-year period. The amount of the annual limitation generally is equal to the product calculated by multiplying (i) the value of our stock immediately prior to the ownership change, *by* the adjusted federal long-term tax exempt rate. The purchase of shares of our common stock pursuant to the rights offering may trigger an ownership change with respect to the company, and thereby limit the company’s ability to use its NOLs to offset income in tax periods following the rights offering.

We may amend or modify the terms of the rights offering at any time prior to the expiration of the rights offering in our sole discretion.

Our board of directors reserves the right to amend or modify the terms of the rights offering in its sole discretion. If we should make any fundamental changes to the terms of the rights offering set forth in this prospectus, we will file a post-effective amendment to the registration statement in which this prospectus is included, offer potential purchasers who have subscribed for rights the opportunity to cancel such subscriptions and issue a refund of any money advanced by such stockholder and recirculate an updated prospectus after the post-effective amendment is declared effective by the SEC. In addition, upon such event, we may extend the expiration date of the rights offering to allow holders of rights ample time to make new investment decisions and for us to recirculate updated documentation. Our board of directors, in its sole discretion, will have the right, but no obligation, to increase the size of the offering to subscription rights to purchase up to an aggregate 15,000,000 shares if the aggregate number of shares of common stock for which subscription rights are exercised exceeds 12,000,000 shares. Promptly following any such occurrence, we will issue a press release announcing any changes with respect to the rights offering and the new expiration date or offering size. An increase in the size of the offering or extension of the offering expiration date for up to 30 days will not constitute a fundamental change to the terms of the offering, and will not give persons who have exercised their subscription rights the opportunity to cancel their subscriptions. The terms of the rights offering cannot be modified or amended after the expiration date of the rights offering. Although we do not presently intend to do so, we may choose to amend or modify the terms of the rights offering for any reason, including, without limitation, in order to increase participation in the rights offering. Such amendments or modifications may include a change in the subscription price, although no such change is presently contemplated.

There is no back-stop or standby commitment in place to purchase rights or shares that are not purchased in the offering.

RHK Capital, as the dealer-manager of this rights offering, is acting as placement agent for any unsubscribed shares of our common stock. There is no back-stop or standby commitment in place to purchase rights or shares that are not purchased in the offering. The dealer-manager's services to us in this connection cannot be construed as any assurance that this transaction will be successful. RHK Capital does not make any recommendation with respect to whether you should exercise the basic subscription or over-subscription privileges or to otherwise invest in our company.

Your subscription privilege is subject to adjustment and reduction.

Unless we otherwise agree in writing, a person or entity, together with related persons or entities, may not exercise subscription rights (including over-subscription privileges) to purchase shares of our common stock that, when aggregated with their existing ownership, would result in such person or entity, together with any related persons or entities, owning in excess of twenty percent (20%) of our issued and outstanding shares of common stock following the closing of the transactions contemplated by this rights offering.

In the event that the exercise by a stockholder of the basic subscription privilege or the over-subscription privilege could, as determined by us in our sole discretion, potentially result in a limitation on our ability to use net operating losses, tax credits and other tax attributes, which we refer to as the "Tax Attributes," under the Code, and rules promulgated by the Internal Revenue Service, we may, but are under no obligation to, reduce the exercise by such stockholder of the basic subscription privilege or the over-subscription privilege to such number of shares of common stock as we in our sole discretion shall determine to be advisable in order to preserve our ability to use the Tax Attributes.

If subscription rights holders exercise basic subscription rights of more than 12,000,000 shares of common stock (or 15,000,000 shares of common stock, if our board of directors, in its sole discretion, determines to increase the offering size), then the total number of exercised basic subscription rights to be fulfilled by the Company shall be limited to 12,000,000 shares of common stock (or 15,000,000 shares of common stock, if our board of directors, in its sole discretion, determines to increase the offering size), and exercised basic subscription rights will be reduced on a pro-rata basis based on the number of shares subscribed for by each subscribing holder as part of their basic subscription rights, subject to adjustment to eliminate fractional shares. If the pro-rated amount of shares allocated to you in connection with your basic subscription rights is less than your basic subscription request, then the excess funds held by the subscription agent on your behalf will be promptly returned to you, without interest, after the rights offering has expired and all prorating calculations and reductions contemplated by the terms of the rights offering have been effected, and we will have no further obligations to you.

After considering the exercises of the basic subscription privilege, to the extent that basic subscription rights have been exercised for less than 12,000,000 shares of common stock (or 15,000,000 shares of common stock, if our board of directors, in its sole discretion, determines to increase the offering size), if the acceptance of all of the properly exercised over-subscription privileges requests would result in the exercise of more than 12,000,000 shares of common stock (or 15,000,000 shares of common stock, if our board of directors, in its sole discretion, determines to increase the offering size) of subscription rights, then the available shares will be prorated among those who properly exercised over-subscription privileges based on the number of shares each rights holder subscribed for under the basic subscription right, as set forth more fully in this prospectus, and a participating stockholder may not receive the full number of shares for which such stockholder exercised over-subscription privileges.

Risks Relating to our Company

We have had limited operations to date.

We are a clinical stage company and have had limited operations to date. We have yet to demonstrate our ability to overcome the risks frequently encountered in our industry and are still subject to many of the risks common to such enterprises, including our ability to implement our business plan, market acceptance of our proposed business and products, under-capitalization, cash shortages, limitations with respect to personnel, financing and other resources, competition from better funded and experienced companies, and uncertainty of our ability to generate revenues. There is no assurance that our activities will be successful or will result in any revenues or profit, and the likelihood of our success must be considered in light of the stage of our development. Even if we generate revenue, there can be no assurance that we will be profitable. In addition, no assurance can be given that we will be able to consummate our business strategy and plans, or that financial, technological, market, or other limitations may force us to modify, alter, significantly delay, or significantly impede the implementation of such plans. We have insufficient results for investors to use to identify historical trends. Investors should consider our prospects in light of the risk, expenses and difficulties we will encounter as an early stage company. Our revenue and income potential is unproven and our business model is continually evolving. We are subject to the risks inherent to the operation of a new business enterprise, and cannot assure you that we will be able to successfully address these risks.

We have a limited operating history upon which to evaluate our ability to commercialize our products .

We are a clinical stage company and our success is dependent upon our ability to obtain regulatory approval for and commercialize our products and we have not demonstrated an ability to perform the functions necessary for the approval or successful commercialization of any product candidates. The successful commercialization of any product candidates will require us to perform a variety of functions, including:

- continuing to undertake preclinical development and successfully enroll patients in clinical trials;
- participating in regulatory approval processes;
- formulating and manufacturing products; and
- conducting sales and marketing activities.

While various members of our management and staff have significant experience in conducting cancer trials, the Company, to date, has not successfully completed any clinical trials other than the Phase 1 portion of our Phase 1/2 bladder cancer trial and the Phase 1 portion of our current HS-110 lung cancer trial has limited experience conducting and enrolling patients in clinical trials. Until recently, our operations have been limited primarily to organizing and staffing the Company, acquiring, developing and securing our proprietary technology and undertaking preclinical trials and preparing for our early clinical trials of our product candidates. These operations provide a limited basis for you to assess our ability to commercialize our product candidates and the advisability of investing in our securities.

Our consolidated financial statements have been prepared assuming that we will continue as a going concern .

Our financial statements have been prepared under the assumption that we will continue as a going concern; however, we have incurred significant losses from operations to date and we expect our expenses to increase in connection with our ongoing activities, and the addition of Pelican's activities. There can be no assurance that funding will be available on acceptable terms on a timely basis, or at all. The various ways that we could raise capital carry potential risks. Any additional sources of financing will likely involve the issuance of our equity securities, which will have a dilutive effect on our stockholders. If we raise funds through collaborations and licensing arrangements, we might be required to relinquish significant rights to its technologies or tests or grant licenses on terms that are not favorable to us. If we do not succeed in raising additional funds on acceptable terms or at all, we may be unable to complete planned preclinical and clinical trials, or obtain approval of our product candidates from the FDA and other regulatory authorities.

We expect to continue to generate operating losses and experience negative cash flows and it is uncertain whether we will achieve profitability.

For the six months ended June 30, 2017 and 2016, we incurred a net loss of \$6.5 million and \$7.8 million, respectively. We have an accumulated deficit of \$63.4 million through June 30, 2017. We expect to continue to incur operating losses until such time, if ever, as we are able to achieve sufficient levels of revenue from operations. Our ability to achieve profitability will depend on us obtaining regulatory approval for our product candidates and market acceptance of our product offerings and our capacity to develop, introduce and sell our products to our targeted markets. There can be no assurance that any of our product candidates will be approved for commercial sale, or even if our product candidates are approved for commercial sale that we will ever generate significant sales or achieve profitability. Accordingly, the extent of future losses and the time required to achieve profitability, if ever, cannot be predicted at this point.

Even if we succeed in developing and commercializing one or more product candidates, we expect to incur substantial losses for the foreseeable future and may never become profitable. We also expect to continue to incur significant operating expenses and anticipate that our expenses will increase substantially in the foreseeable future as we:

- continue to undertake preclinical development and conduct clinical trials for product candidates;
- seek regulatory approvals for product candidates;
- implement additional internal systems and infrastructure; and
- hire additional personnel.

We also expect to experience negative cash flows for the foreseeable future as we fund our operating losses. As a result, we will need to generate significant revenues or raise additional financing in order to achieve and maintain profitability. We may not be able to generate these revenues or achieve profitability in the future. Our failure to achieve or maintain profitability would likely negatively impact the value of our securities and financing activities.

We will need to raise additional capital to operate our business and our failure to obtain funding when needed may force us to delay, reduce or eliminate our development programs or commercialization efforts.

During the six months ended June 30, 2017, our operating activities used net cash of approximately \$5.4 million and as of June 30, 2017 our cash and cash equivalents were approximately \$8.3 million. During the year ended December 31, 2016, our operating activities used net cash of approximately \$13.5 million and as of December 31, 2016 our cash and cash equivalents were approximately \$7.8 million. We have experienced significant losses since inception and have a significant accumulated deficit. As of June 30, 2017, our accumulated deficit totaled approximately \$63.4 million and as of December 31, 2016, our accumulated deficit totaled approximately \$57.0 million on a consolidated basis. We expect to incur additional operating losses in the future and therefore expect our cumulative losses to increase. We do not expect to derive revenue from any significant source in the near future until we or our potential partners successfully commercialize our products. Despite cost-saving measures that we implemented, we expect our expenses to increase if and when we initiate and conduct Phase 2 and 3 and other clinical trials, and seek marketing approval for our product candidates. Until such time as we receive approval from the FDA and other regulatory authorities for our product candidates, we will not be permitted to sell our products and therefore will not have product revenues from the sale of products. For the foreseeable future we will have to fund all of our operations and capital expenditures from equity and debt offerings, cash on hand, licensing fees and grants.

We expect that our current cash and cash equivalents will allow us to complete the enrollment of additional patients in the Phase 2 clinical trial for HS-110; however, if the trial design or size were to change, we may need to raise money earlier than anticipated.

We will need to raise additional capital to fund our future operations and we cannot be certain that funding will be available on acceptable terms on a timely basis, or at all. To meet our financing needs, we are considering multiple alternatives, including, but not limited to, this rights offering, current and additional equity financings, which we expect will include sales of common stock through at-the-market offerings (“ATM”) and otherwise pursuant to the At Market Issuance Sales Agreement (the “FBR Sales Agreement”) entered into with FBR Capital Markets & Co. (“FBR”), debt financings and/or funding from partnerships or collaborations. Due to our decreased stock price we currently do not meet the requirements to utilize the ATM and there can be no assurance that we will be able to meet the requirements for use of the FBR Sales Agreement in the future, especially in light of the fact that we are subject to the smaller reporting company requirements, or to complete any such transactions on acceptable terms or otherwise. Any additional sources of financing will likely involve the issuance of our equity or debt securities, which will have a dilutive effect on our stockholders. To the extent that we raise additional funds by issuing equity securities, our stockholders may experience significant dilution. Any debt financing, if available, may involve restrictive covenants that may impact our ability to conduct our business. If we do not succeed in raising additional funds on acceptable terms, we may be unable to complete planned preclinical and clinical trials or obtain approval of our product candidates from the FDA and other regulatory authorities. In addition, we could be forced to delay, discontinue or curtail product development, forego sales and marketing efforts, and forego licensing in attractive business opportunities. Any additional sources of financing will likely involve the issuance of our equity or debt securities, which will have a dilutive effect on our stockholders.

We currently have no product revenues and may not generate product revenue at any time in the near future, if at all.

We currently have no products for sale and we cannot guarantee that we will ever have any drug products approved for sale. We and our product candidates are subject to extensive regulation by the FDA, and comparable regulatory authorities in other countries governing, among other things, research, testing, clinical trials, manufacturing, labeling, promotion, marketing, adverse event reporting and recordkeeping of our product candidates. Until, and unless, we receive approval from the FDA and other regulatory authorities for our product candidates, we cannot commercialize our product candidates and will not have product revenues. In addition, the technology that we out-licensed is in the early stages of development and there is a low likelihood of success for any such technology at that stage, therefore there can be no assurance that any products will be developed by such licensee or that we will derive any revenue from such licensee. For the foreseeable future, we will have to fund all of our operations from equity and debt offerings, cash on hand and grants. We believe that due to our current cash position and estimates of expenses, there is substantial doubt about our ability to continue as a going concern. In addition, changes may occur that would consume our available capital at a faster pace than expected, including changes in and progress of our development activities, acquisitions of additional candidates and changes in regulation. Moreover, preclinical studies and clinical trials may not start or be completed as we forecast and may not achieve the desired results. Therefore, we expect that we will seek additional sources of funding, such as additional financing or grant funding, and additional financing may not be available on favorable terms, if at all. Our ability to raise capital through the sale of equity may be limited by the various rules of the SEC and the Nasdaq Capital Market that place limits on the number of shares of stock that may be sold. If we do not succeed in raising additional funds on acceptable terms, we may be unable to complete planned preclinical and clinical trials or obtain approval of our product candidates from the FDA and other regulatory authorities. In addition, we could be forced to delay, discontinue or curtail product development, forego sales and marketing efforts, and forego licensing in attractive business opportunities. Any additional sources of financing will likely involve the issuance of our equity or debt securities, which will have a dilutive effect on our stockholders.

We have identified a material weakness in our internal controls, and we cannot provide assurances that this weakness will be effectively remediated or that additional material weaknesses will not occur in the future. If our internal control over financial reporting or our disclosure controls and procedures are not effective, we may not be able to accurately report our financial results, prevent fraud, or file our periodic reports in a timely manner, which may cause investors to lose confidence in our reported financial information and may lead to a decline in our stock price.

Our management is responsible for establishing and maintaining adequate internal control over our financial reporting, as defined in Rule 13a-15(f) under the Exchange Act. During the second quarter of 2017, we identified a material weakness in our controls over financial reporting related to the accounting for significant transactions that occurred during the quarter. Specifically, we did not design and maintain effective controls related to the acquisition for the purchase price of the acquired assets and liabilities of Pelican. Although management believes that the control deficiencies will be remediated by the end of the fiscal year, there can be no assurance that the deficiency will be remediated at such time or that the internal control over financial reporting, as modified, will enable us to identify or avoid material weaknesses in the future. In addition, the material weakness will not be considered remediated until the applicable controls operate for a sufficient period of time and management has concluded, through testing, that these controls are designed and operating effectively.

We are substantially dependent on the success of our product candidates and we cannot provide any assurance that any of our product candidates will be commercialized.

Our main focus and the investment of a significant portion of our efforts and financial resources has been in the development of our product candidate, HS-110, for which we are currently actively conducting Phase 2 clinical trials, respectively. Our future success depends heavily on our ability to successfully manufacture, develop, obtain regulatory approval, and commercialize this product candidates, which may never occur. Before commercializing this product candidate, we will require additional clinical trials and regulatory approvals for which there can be no guarantee that we will be successful. We currently generate no revenues from any of our product candidates, and we may never be able to develop or commercialize a marketable drug.

If we experience delays in the enrollment of patients in our clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

Our inability to locate and enroll a sufficient number of eligible patients in our clinical trials for any of our current or future clinical trials would result in significant delays or may require us to abandon one or more clinical trials. Our ability to enroll patients in trials is affected by many factors out of our control including the size and nature of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the trial, the design of the clinical trial, competing clinical trials and clinicians' and patients' perceptions as to the potential advantages of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating.

Risks Relating to our Business

If we do not obtain the necessary regulatory approvals in the United States and/or other countries we will not be able to sell our product candidates .

We cannot assure you that we will receive the approvals necessary to commercialize any of our product candidates or any product candidates we acquire or develop in the future. We will need FDA approval to commercialize our product candidates in the United States and approvals from the FDA-equivalent regulatory authorities in foreign jurisdictions to commercialize our product candidates in those jurisdictions. In order to obtain FDA approval of any product candidate, we must submit to the FDA a BLA, demonstrating that the product candidate is safe, pure and potent, or effective for its intended use. This demonstration requires significant research including preclinical studies, as well as clinical trials. Satisfaction of the FDA's regulatory requirements typically takes many years, depends upon the type, complexity and novelty of the product candidate and requires substantial resources for research, development and testing. We cannot predict whether our clinical trials will demonstrate the safety and efficacy of our product candidates or if the results of any clinical trials will be sufficient to advance to the next phase of development or for approval from the FDA. We also cannot predict whether our research and clinical approaches will result in drugs or therapeutics that the FDA considers safe and effective for the proposed indications. The FDA has substantial discretion in the drug approval process. The approval process may be delayed by changes in government regulation, future legislation or administrative action or changes in FDA policy that occur prior to or during our regulatory review. Delays in obtaining regulatory approvals may:

- prevent or delay commercialization of, and our ability to derive product revenues from, our product candidates; and
- diminish any competitive advantages that we may otherwise believe that we hold.

Even if we comply with all FDA requests, the FDA may ultimately reject one or more of our BLAs. We may never obtain regulatory clearance for any of our product candidates. Failure to obtain FDA approval of any of our product candidates will severely undermine our business by leaving us without a saleable product, and therefore without any source of revenues, until another product candidate can be developed. There is no guarantee that we will ever be able to develop or acquire another product candidate.

In addition, the FDA may require us to conduct additional preclinical and clinical testing or to perform post-marketing studies, as a condition to granting marketing approval of a product. Regulatory approval of oncology products often requires that patients in clinical trials be followed for long periods to assess their overall survival. The results generated after approval could result in loss of marketing approval, changes in product labeling, and/or new or increased concerns about the side effects or efficacy of a product. The FDA has significant post-market authority, including the explicit authority to require post-market studies and clinical trials, labeling changes based on new safety information, and compliance with FDA-approved risk evaluation and mitigation strategies. The FDA's exercise of its authority has in some cases resulted, and in the future could result, in delays or increased costs during product development, clinical trials and regulatory review, increased costs to comply with additional post-approval regulatory requirements and potential restrictions on sales of approved products.

In foreign jurisdictions, we must also receive approval from the appropriate regulatory authorities before we can commercialize any vaccines. Foreign regulatory approval processes generally include all of the risks associated with the FDA approval procedures described above. There can be no assurance that we will receive the approvals necessary to commercialize our product candidates for sale outside the United States.

Our product candidates are in early stages of development, and therefore they will require extensive preclinical and clinical testing.

Because our product candidates are in early stages of development they will require extensive preclinical and clinical testing. Although we have commenced a Phase 2 clinical trial for HS-110, we cannot predict with any certainty if or when we might submit a BLA for regulatory approval for any of our product candidates or whether any such BLA will be accepted for review by the FDA, or whether any BLA will be approved upon review.

Even if our clinical trials are completed as planned, we cannot be certain that their results will support our proposed indications. Success in preclinical testing and early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the results of later clinical trials will replicate the results of prior clinical trials and preclinical testing. For example, the Phase 1 HS-410 clinical trial, as well as the interim data from the Phase 2 HS-410 clinical study, showed evidence of an immune response in NMIBC patients exposed to HS-410, however, the topline data from the Phase 2 clinical trial reported that there was no statistically significant difference in the primary endpoint between the vaccine and placebo arms of the trial. The Phase 2 clinical trial of HS-410 used doses and dosing regimens which had not previously been tested, and combinations with other immunotherapy agents. In addition, immune response is not an acceptable regulatory endpoint for approval, and the HS-410 Phase 1 trial involved a small sample size and was not randomized or blinded. The clinical trial process may fail to demonstrate that our product candidates are safe and effective for their proposed uses. This failure could cause us to abandon a product candidate and may delay development of other product candidates. Any delay in, or termination of, our clinical trials will delay and possibly preclude the filing of any BLAs with the FDA and, ultimately, our ability to commercialize our product candidates and generate product revenues.

Clinical trials are very expensive, time-consuming and difficult to design and implement .

As part of the regulatory process, we must conduct clinical trials for each product candidate to demonstrate safety and efficacy to the satisfaction of the FDA and other regulatory authorities. The number and design of the clinical trials that will be required varies depending upon product candidate, the condition being evaluated and the trial results themselves. Therefore, it is difficult to accurately estimate the cost of the clinical trials. Clinical trials are very expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. The clinical trial process is also time consuming. We estimate that clinical trials of our product candidates will take at least several years to complete. Furthermore, failure can occur at any stage of the trials, and we could encounter problems that cause us to abandon or repeat clinical trials. The commencement and completion of clinical trials may be delayed or prevented by several factors, including:

- unforeseen safety issues;
- failure to determine appropriate dosing;
- greater than anticipated cost of our clinical trials;
- failure to demonstrate effectiveness during clinical trials;
- slower than expected rates of patient recruitment or difficulty obtaining investigators;
- patient drop-out or discontinuation;
- inability to monitor patients adequately during or after treatment;
- third party contractors failing to comply with regulatory requirements or meet their contractual obligations to us in a timely manner;
- insufficient or inadequate supply or quality of product candidates or other necessary materials to conduct our trials;
- potential additional safety monitoring, or other conditions required by FDA or comparable foreign regulatory authorities regarding the scope or design of our clinical trials, or other studies requested by regulatory agencies;
- problems engaging IRBs to oversee trials or in obtaining and maintaining IRB approval of studies;
- imposition of clinical hold or suspension of our clinical trials by regulatory authorities; and
- inability or unwillingness of medical investigators to follow our clinical protocols.

In addition, we or the FDA may suspend or terminate our clinical trials at any time if it appears that we are exposing participants to unacceptable health risks or if the FDA finds deficiencies in our Investigational New Drug, or IND, submissions or the conduct of these trials. Therefore, we cannot predict with any certainty when, if ever, future clinical trials will commence or be completed.

We are at risk of a clinical hold at any time based on the evaluation of the data and information submitted to the governing regulatory authorities. On February 2, 2016, we received notice from the FDA of a partial clinical hold on our Phase 2 HS-410 clinical trial despite the fact that we did not have a safety concern. The partial clinical hold came after we concluded that the cell line on which HS-410 is based had been previously misidentified. The partial clinical hold was lifted on February 10, 2016. However, if in the future we are delayed in addressing, or unable to address, any FDA concerns, we could be delayed, or prevented, from conducting our clinical trials.

Misidentification of cell lines could impact our clinical development and intellectual property rights .

Our product candidates are based on human cell lines produced by third parties and licensed by us. Cell line characterization and contamination is a known issue in biomedical research. For example, despite standard procedures to identify the origins and characteristics of our cell lines in early 2016 we discovered that the origin of the cell line used in HS-410 was misidentified. The misidentification resulted in the FDA placing our HS-410 Phase 2 clinical trial on partial clinical hold while the FDA reviewed certain updated documentation provided by us related to the misidentification. In the event we were to use a cell line in the future that is also misidentified, the clinical development of the product candidate utilizing the mischaracterized cell line could be materially and adversely affected, we could lose the right to use the cell line and our intellectual property rights relating to our development of product candidates based on that cell line could be materially and adversely affected. Although we have implemented certain additional procedures to properly identify our cell lines, we may not be able to detect that a cell line has been mischaracterized or mislabeled by a third party.

There is uncertainty as to market acceptance of our technology and product candidates.

Even if the FDA approves one or more of our product candidates, the products may not gain broad market acceptance among physicians, healthcare payers, patients, and the medical community. We have conducted our own research into the markets for our product candidates; however, we cannot guarantee market acceptance of our product candidates, if approved, and have somewhat limited information on which to estimate our anticipated level of sales. Our product candidates, if approved, will require patients, healthcare providers and doctors to adopt our technology. Our industry is susceptible to rapid technological developments and there can be no assurance that we will be able to match any new technological advances. If we are unable to match the technological changes in the needs of our customers the demand for our products will be reduced. Acceptance and use of any products we market will depend upon a number of factors including:

- perceptions by members of the health care community, including physicians, about the safety and effectiveness of our products;
- limitation on use or warnings required by FDA in our product labeling;
- cost-effectiveness of our products relative to competing products;
- convenience and ease of administration;
- potential advantages of alternative treatment methods;
- availability of reimbursement for our products from government or other healthcare payers; and
- effectiveness of marketing and distribution efforts by us and our licensees and distributors, if any.

Because we expect virtually all of our product revenues for the foreseeable future to be generated from sales of our current product candidates, if approved, the failure of these therapeutics to find market acceptance would substantially harm our business and would adversely affect our revenue.

Our development program partially depends upon third-party researchers who are outside our control .

We are dependent upon independent investigators and collaborators, such as universities and medical institutions, to conduct our clinical trials under agreements with us. These collaborators are not our employees and we cannot control the amount or timing of resources that they devote to our programs. These investigators may not assign as great a priority to our programs or pursue them as diligently as we would if we were undertaking such programs ourselves. If outside collaborators fail to devote sufficient time and resources to our development programs, or if their performance is substandard, the approval of our FDA applications, if any, and our introduction of new product candidates, if any, will be delayed if obtained at all. These collaborators may also have relationships with other commercial entities, some of whom may compete with us. If our collaborators assist our competitors at our expense, our competitive position would be harmed.

We will rely significantly on third parties to formulate and manufacture our product candidates .

We have developed certain experience in the formulation, development and/or manufacturing of biologics but do not intend to establish our own manufacturing facilities. To date, the selection and initial replication of our biological cell lines used in our trials has been performed by individuals working at third party laboratories over which we have little process or quality control and therefore the process and replication could be subject to human error. We lack the resources and expertise to formulate or manufacture our own product candidates. The investigational products for our clinical trials are manufactured by our contractors under current good manufacturing practices, (“cGMPs”) and we have entered into agreements with commercial-scale manufacturers for the production and supply of investigational product for additional Phase 2 and Phase 3 clinical trials as well as commercialization. We must also develop and validate a potency assay prior to submission of a license application. Such assays have traditionally proven difficult to develop for cell-based products and must be established prior to initiating any Phase 3 clinical trials. If any of our current product candidates, or any product candidates we may develop or acquire in the future, receive FDA approval, we will rely on one or more third-party contractors for manufacturing. Our anticipated future reliance on a limited number of third-party manufacturers exposes us to the following risks:

- We may be unable to identify manufacturers on acceptable terms or at all because the number of potential manufacturers with appropriate expertise and facilities is limited.
- If we change manufacturers at any point during the development process or after approval, we will be required to demonstrate comparability between the products made by the old and new manufacturers. If we are unable to do so, we may need to conduct additional clinical trials with product manufactured by the new manufacturer. Accordingly, it may be necessary to evaluate the comparability of the HS-110 or HS-410 produced by the two different manufacturers at some point during the clinical development process.
- If we change the manufacturer of a product subsequent to the approval of the product, we will need to obtain approval from the FDA of the change in manufacturer. Any such approval would likely require significant testing and expense, and the new manufacturer may be subject to a cGMP inspection prior to approval.
- Our third-party manufacturers might be unable to formulate and manufacture our product candidates in the volume and with the quality required to meet our clinical needs and commercial needs, if any.
- Our contract manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store and distribute our product candidates.
- Drug manufacturers are subject to ongoing periodic unannounced inspection by the FDA, and corresponding state agencies to ensure compliance with cGMPs and other government regulations and corresponding foreign standards. We do not have control over third-party manufacturers’ compliance with these regulations and standards.
- If any third-party manufacturer makes improvements in the manufacturing process for our products, we may not own, or may have to share, the intellectual property rights to the innovation.
- Our contract manufacturers have in the past and may in the future encounter difficulties in achieving quality control and quality assurance and may experience shortages in qualified personnel. Our contract manufacturers are subject to inspections by the FDA and comparable agencies in other jurisdictions to assess compliance with applicable regulatory requirements. Any failure to follow cGMP or other regulatory requirements or delay, interruption or other issues that arise in the manufacture, packaging, or storage of our products as a result of a failure of the facilities or operations of third parties to comply with regulatory requirements or pass any regulatory authority inspection could significantly impair our ability to develop and commercialize our products, including leading to significant delays in the availability of products for our clinical studies or the termination or hold on a clinical study, or the delay or prevention of a filing or approval of marketing applications for our product candidates. Significant noncompliance could also result in the imposition of sanctions, including fines, injunctions, civil penalties, failure of regulatory authorities to grant marketing approvals for our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of products, operating restrictions and criminal prosecutions, any of which could damage our reputation. If we or our contract manufacturers are not able to maintain regulatory compliance, we may not be permitted to market our products and/or may be subject to product recalls, seizures, injunctions, or criminal prosecution.

Each of these risks could delay our clinical trials, the approval, if any, of our product candidates by the FDA or the commercialization of our product candidates or could also result in higher costs or deprive us of potential product revenues.

For our product candidates, we rely upon single third parties to manufacture and supply our drug substance. Any problems experienced by either our third party manufacturers or their vendors could result in a delay or interruption in the supply of our product candidate to us until the third party manufacturer or its vendor cures the problem or until we locate and qualify an alternative source of manufacturing and supply.

For our product candidates we currently rely on third party manufacturers to purchase from their third party vendors the materials necessary to produce our product candidates and manufacture our product candidates for our clinical studies. If any of our third party manufacturers were to experience any prolonged disruption for our manufacturing we could be forced to seek additional third party manufacturing contracts, thereby increasing our development costs and negatively impacting our timeliness and any commercialization costs.

For each of our ongoing clinical trials, we are administering our product candidates, in combination with other immunotherapy agents. Any problems obtaining the other immunotherapy agents could result in a delay or interruption in our clinical trials.

For our ongoing clinical trials of HS-110 we administer our product candidate in combination with another immunotherapy agent, nivolumab. Therefore, our success will be dependent upon the continued use of this other immunotherapy agents. If any of the immunotherapy agents that are used in our clinical trials are unavailable while the trials are continuing, our timeliness and commercialization costs could be impacted. In addition, if any of these other immunotherapy agents are determined to have safety or efficacy problems, our clinical trials and commercialization efforts would be adversely affected.

Adverse effects resulting from other immunotherapy drugs or therapies could also negatively affect the perceptions by members of the health care community, including physicians, about the safety and effectiveness of our product candidates.

There are many other companies that have developed or are currently trying to develop immunology vaccines for the treatment of cancer. If adverse effects were to result from any immunotherapy drugs or therapies being developed, manufactured and marketed by others it could be attributed to our products or immunotherapy protocols as a whole. In fact, in the past biologics have been associated with certain safety risks and other companies developing biologics have had patients in trials suffer from serious adverse events, including death. Any such attribution could negatively affect the perceptions by members of the health care community, including physicians, about the safety and effectiveness of our product candidates and the future of immunotherapy for the treatment of cancer. Our industry is susceptible to rapid technological changes and there can be no assurance that we will be able to match any new technological challenges presented by the adverse effects resulting from immunotherapy drugs or therapies developed, manufactured or marketed by others.

Even if we are able to obtain regulatory approval for our product candidates, we will continue to be subject to ongoing and extensive regulatory requirements, and our failure, or the failure of our contract manufacturers, to comply with these requirements could substantially harm our business.

If the FDA approves any of our product candidates, the labeling, manufacturing, packaging, adverse event reporting, storage, advertising, promotion and record keeping for our products will be subject to ongoing FDA requirements and continued regulatory oversight and review. We may also be subject to additional FDA post-marketing obligations. If we are not able to maintain regulatory compliance, we may not be permitted to market our product candidates and/or may be subject to product recalls or seizures. The subsequent discovery of previously unknown problems with any marketed product, including AEs of unanticipated severity or frequency, may result in restrictions on the marketing of the product, and could include withdrawal of the product from the market.

We have no experience selling, marketing or distributing products and have no internal capability to do so .

We currently have no sales, marketing or distribution capabilities. We do not anticipate having the resources in the foreseeable future to allocate to the sales and marketing of our proposed products, if approved. Our future success depends, in part, on our ability to enter into and maintain collaborative relationships for such capabilities, the collaborator's strategic interest in the products under development and such collaborator's ability to successfully market and sell any such products. We intend to pursue collaborative arrangements regarding the sales and marketing of our products, however, there can be no assurance that we will be able to establish or maintain such collaborative arrangements, or if able to do so, that our collaborators will have effective sales forces. To the extent that we decide not to, or are unable to, enter into collaborative arrangements with respect to the sales and marketing of our proposed products, significant capital expenditures, management resources and time will be required to establish and develop an in-house marketing and sales force with technical expertise. There can also be no assurance that we will be able to establish or maintain relationships with third party collaborators or develop in-house sales and distribution capabilities. To the extent that we depend on third parties for marketing and distribution, any revenues we receive will depend upon the efforts of such third parties, and there can be no assurance that such efforts will be successful. In addition, there can also be no assurance that we will be able to successfully market and sell our products in the United States or overseas on our own.

We may not be successful in establishing and maintaining strategic partnerships, which could adversely affect our ability to develop and commercialize products.

We may seek to enter into strategic partnerships in the future, including alliances with other biotechnology or pharmaceutical companies, to enhance and accelerate the development and commercialization of our products. We face significant competition in seeking appropriate strategic partners and the negotiation process is time-consuming and complex. Moreover, we may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for any future product candidates and programs because our research and development pipeline may be insufficient, our product candidates and programs may be deemed to be at too early of a stage of development for collaborative effort and/or third parties may not view our product candidates and programs as having the requisite potential to demonstrate safety and efficacy or return on investment. Even if we are successful in our efforts to establish strategic partnerships, the terms that we agree upon may not be favorable to us and we may not be able to maintain such strategic partnerships if, for example, development or approval of a product candidate is delayed or sales of an approved product are disappointing.

If we ultimately determine that entering into strategic partnerships is in our best interest but either fail to enter into, are delayed in entering into or fail to maintain such strategic partnerships:

- the development of certain of our current or future product candidates may be terminated or delayed;
- our cash expenditures related to development of certain of our current or future product candidates may increase significantly and we may need to seek additional financing;
- we may be required to hire additional employees or otherwise develop expertise, such as sales and marketing expertise, for which we have not budgeted;
- we will bear all of the risk related to the development of any such product candidates; and
- the competitiveness of any product candidate that is commercialized could be reduced.

To the extent we elect to enter into licensing or collaboration agreements to partner our product candidates, our dependence on such relationships may adversely affect our business.

Our commercialization strategy for certain of our product candidates may depend on our ability to enter into agreements with collaborators to obtain assistance and funding for the development and potential commercialization of these product candidates. Supporting diligence activities conducted by potential collaborators and negotiating the financial and other terms of a collaboration agreement are long and complex processes with uncertain results. Even if we are successful in entering into one or more collaboration agreements, collaborations may involve greater uncertainty for us, as we have less control over certain aspects of our collaborative programs than we do over our proprietary development and commercialization programs. We may determine that continuing a collaboration under the terms provided is not in our best interest, and we may terminate the collaboration. Our collaborators could delay or terminate their agreements, and our product candidates subject to collaborative arrangements may never be successfully developed or commercialized.

Further, our future collaborators may develop alternative products or pursue alternative technologies either on their own or in collaboration with others, including our competitors, and the priorities or focus of our collaborators may shift such that our programs receive less attention or fewer resources than we would like, or they may be terminated altogether. Any such actions by our collaborators may adversely affect our business prospects and ability to earn revenues. In addition, we could have disputes with our future collaborators, such as the interpretation of terms in our agreements. Any such disagreements could lead to delays in the development or commercialization of any potential products or could result in time-consuming and expensive litigation or arbitration, which may not be resolved in our favor.

If we cannot compete successfully for market share against other drug companies, we may not achieve sufficient product revenues and our business will suffer

The market for our product candidates is characterized by intense competition and rapid technological advances. If any of our product candidates receives FDA approval, it will compete with a number of existing and future drugs and therapies developed, manufactured and marketed by others. Existing or future competing products may provide greater therapeutic convenience or clinical or other benefits for a specific indication than our products, or may offer comparable performance at a lower cost. If our products fail to capture and maintain market share, we may not achieve sufficient product revenues and our business will suffer.

We will compete against fully integrated pharmaceutical companies and smaller companies that are collaborating with larger pharmaceutical companies, academic institutions, government agencies and other public and private research organizations. Many of these competitors have oncology compounds already approved or in development. In addition, many of these competitors, either alone or together with their collaborative partners, operate larger research and development programs or have substantially greater financial resources than we do, as well as significantly greater experience in:

- developing drugs, biologics and other therapies;
- undertaking preclinical testing and clinical trials;
- obtaining FDA and other regulatory approvals of drugs, biologics and other therapies;
- formulating and manufacturing drugs, biologics and other therapies; and
- launching, marketing and selling drugs, biologics and other therapies.

We have limited protection for our intellectual property, which could impact our competitive position.

We intend to rely on a combination of common law copyright, patent, trademark, and trade secret laws and measures to protect our proprietary information. We have obtained exclusive rights to license the technology for which patent protection has been obtained; however, certain patents expire in 2019 and such protection does not prevent unauthorized use of such technology. In addition, our license for certain cell lines are subject to non-exclusive licenses and do not have patent protection. Trademark and copyright protections may be limited, and enforcement could be too costly to be effective. It may also be possible for unauthorized third parties to copy aspects of, or otherwise obtain and use, our proprietary information without authorization, including, but not limited to, product design, software, customer and prospective customer lists, trade secrets, copyrights, patents and other proprietary rights and materials. Other parties can use and register confusingly similar business, product and service names, as well as domain names, which could divert customers, resulting in a material adverse effect on our business, operating results and financial condition.

If we fail to successfully enforce our intellectual property rights, our competitive position could suffer, which could harm our operating results. Competitors may challenge the validity or scope of our patents or future patents we may obtain. In addition, our licensed patents may not provide us with a meaningful competitive advantage. We may be required to spend significant resources to monitor and police our licensed intellectual property rights. We may not be able to detect infringement and our competitive position may be harmed. In addition, competitors may design around our technology or develop competing technologies. Intellectual property rights may also be unavailable or limited in some foreign countries, which could make it easier for competitors to capture market share.

The technology we license, our products or our development efforts may be found to infringe upon third-party intellectual property rights.

Third parties may in the future assert claims or initiate litigation related to their patent, copyright, trademark and other intellectual property rights in technology that is important to us. The asserted claims and/or litigation could include claims against us, our licensors or our suppliers alleging infringement of intellectual property rights with respect to our products or components of those products. Regardless of the merit of the claims, they could be time consuming, result in costly litigation and diversion of technical and management personnel, or require us to develop a non-infringing technology or enter into license agreements. We have not undertaken an exhaustive search to discover any third party intellectual patent rights which might be infringed by commercialization of the product candidates described herein. Although we are not currently aware of any such third party intellectual patent rights, it is possible that such rights currently exist or might be obtained in the future. In the event that a third party controls such rights and we are unable to obtain a license to such rights on commercially reasonable terms, we may not be able to sell or continue to develop our products, and may be liable for damages for such infringement. We cannot assure you that licenses will be available on acceptable terms, if at all. Furthermore, because of the potential for significant damage awards, which are not necessarily predictable, it is not unusual to find even arguably unmeritorious claims resulting in large settlements. If any infringement or other intellectual property claim made against us by any third party is successful, or if we fail to develop non-infringing technology or license the proprietary rights on commercially reasonable terms and conditions, our business, operating results and financial condition could be materially adversely affected.

If our products, methods, processes and other technologies infringe the proprietary rights of other parties, we could incur substantial costs and we may have to:

- obtain licenses, which may not be available on commercially reasonable terms, if at all;
- abandon an infringing drug or therapy candidate;
- redesign our products or processes to avoid infringement;
- stop using the subject matter claimed in the patents held by others;
- pay damages; or
- defend litigation or administrative proceedings which may be costly whether we win or lose, and which could result in a substantial diversion of our financial and management resources.

We rely on licenses to use various technologies that are material to our business and if the agreements were to be terminated or if other rights that may be necessary or we deem advisable for commercializing our intended products cannot be obtained, it would halt our ability to market our products and technology, as well as have an immediate material adverse effect on our business, operating results and financial condition.

We have licensing agreements with certain universities granting us the right to use certain critical intellectual property. The terms of the licensing agreements continue until the end of the life of the last patent to expire. If we breach the terms of these licensing agreements, including any failure to make minimum royalty payments required thereunder or failure to reach certain developmental milestones, using best efforts to introduce a licensed product in certain territories by certain dates, the licensor has the right to terminate the license. If we were to lose or otherwise be unable to maintain these licenses on acceptable terms, or find that it is necessary or appropriate to secure new licenses from other third parties, it would halt our ability to market our products and technology, which would have an immediate material adverse effect on our business, operating results and financial condition.

We may be unable to generate sufficient revenues to meet the minimum royalties or developmental milestones required under our license agreements.

For the years ended December 31, 2017, 2018, 2019, 2020, and 2021 our minimum royalty obligations under our licensing agreements, required to be paid with the passage of time, are \$130,374, \$101,187, \$70,000, \$97,000 and \$52,000, respectively. No assurance can be given that we will generate sufficient revenue or raise additional financing to make these minimum royalty payments. The license agreements also provide for certain developmental milestones, including future payments to Pelican based on the achievement of certain milestones. No assurance can be given that we will meet all of the required developmental milestones. Any failure to make the payments or reach the milestones required by the license agreements would permit the licensor to terminate the license. If we were to lose or otherwise be unable to maintain these licenses, it would halt our ability to market our products and technology, which would have an immediate material adverse effect on our business, operating results and financial condition.

Our ability to generate product revenues will be diminished if our therapies sell for inadequate prices or patients are unable to obtain adequate levels of reimbursement .

Our ability to commercialize our therapies, alone or with collaborators, will depend in part on the extent to which reimbursement will be available from:

- government and health administration authorities;
- private health maintenance organizations and health insurers; and
- other healthcare payers.

Significant uncertainty exists as to the reimbursement status of newly approved healthcare products. Healthcare payers, including Medicare, are challenging the prices charged for medical products and services. Cost control initiatives could decrease the price that we would receive for any products in the future, which would limit our revenue and profitability. Government and other healthcare payers increasingly attempt to contain healthcare costs by limiting both coverage and the level of reimbursement for drugs and therapeutics. We might need to conduct post-marketing studies in order to demonstrate the cost-effectiveness of any future products to such payers' satisfaction. Such studies might require us to commit a significant amount of management time and financial and other resources. Our future products might not ultimately be considered cost-effective. Even if one of our product candidates is approved by the FDA, insurance coverage may not be available, and reimbursement levels may be inadequate, to cover such therapies. If government and other healthcare payers do not provide adequate coverage and reimbursement levels for one of our products, once approved, market acceptance of such product could be reduced.

Legislative and regulatory changes affecting the health care industry could adversely affect our business.

Political, economic and regulatory influences are subjecting the health care industry to potential fundamental changes that could substantially affect our results of operations. In many countries, the government controls the pricing and profitability of prescription pharmaceuticals. In the United States, we expect that there will continue to be federal and state proposals to implement similar governmental controls. In addition, recent changes in the Medicare program and increasing emphasis on managed care in the United States will continue to put pressure on pharmaceutical product pricing. It is uncertain whether or when any legislative proposals will be adopted or what actions federal, state, or private payers for health care treatment and services may take in response to any health care reform proposal or legislation. We cannot predict the effect health care reforms may have on our business and we can offer no assurances that any of these reforms will not have a material adverse effect on our business. These actual and potential changes are causing the marketplace to put increased emphasis on the delivery of more cost-effective treatments. In addition, uncertainty remains regarding proposed significant reforms to the U.S. health care system.

We may not successfully effect our intended expansion, which would harm our business prospects .

Our success will depend upon the expansion of our operations and the effective management of our growth, which will place a significant strain on our management and on our administrative, operational and financial resources. To manage this growth, we must expand our facilities, augment our operational, financial and management systems and hire and train additional qualified personnel. If we are unable to manage our growth effectively, our business would be harmed.

We may be exposed to liability claims associated with the use of biological and hazardous materials and chemicals .

Our research and development activities may involve the controlled use of biological and hazardous materials and chemicals. Although we believe that our safety procedures for using, storing, handling and disposing of these materials comply with federal, state and local laws and regulations, we cannot completely eliminate the risk of accidental injury or contamination from these materials. In the event of such an accident, we could be held liable for any resulting damages and any liability could materially adversely affect our business, financial condition and results of operations. In addition, the federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of hazardous or radioactive materials and waste products may require us to incur substantial compliance costs that could materially adversely affect our business, financial condition and results of operations.

We rely on key executive officers and scientific and medical advisors, and their knowledge of our business and technical expertise would be difficult to replace .

We are highly dependent on our principal scientific, regulatory and medical advisors and our chief executive officer. Other than a \$2,000,000 insurance policy we hold on the life of Jeffrey Wolf, we do not have “key person” life insurance policies for any of our officers or advisors. The loss of the technical knowledge, management and industry expertise of any of our key personnel could result in delays in product development, loss of customers and sales and diversion of management resources, which could adversely affect our operating results.

If we are unable to hire additional qualified personnel, our ability to grow our business may be harmed .

We will need to hire additional qualified personnel with expertise in preclinical and clinical research, government regulation, formulation and manufacturing, sales and marketing and accounting and financing. In particular, over the next 12 months, we expect to hire additional new employees. We compete for qualified individuals with numerous biopharmaceutical companies, universities and other research institutions. Competition for such individuals is intense, and we cannot be certain that our search for such personnel will be successful. Attracting and retaining qualified personnel will be critical to our success.

We may incur substantial liabilities and may be required to limit commercialization of our products in response to product liability lawsuits.

The testing and marketing of drug and biological product candidates entail an inherent risk of product liability. Product liability claims might be brought against us by consumers, health care providers or others selling or otherwise coming into contact with our products. Clinical trial liability claims may be filed against us for damages suffered by clinical trial subjects or their families. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our products which could impact our ability to continue as a going concern. Our inability to obtain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of pharmaceutical products we develop, alone or with collaborators. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- decreased demand for any approved product candidates;
- impairment of our business reputation;
- withdrawal of clinical trial participants;
- costs of related litigation;
- distraction of management ' s attention;
- substantial monetary awards to patients or other claimants;
- loss of revenues; and
- the inability to successfully commercialize any approved drug candidates.

International expansion of our business exposes us to business, regulatory, political, operational, financial and economic risks associated with doing business outside of the United States.

Our business strategy incorporates international expansion, including establishing and maintaining clinician marketing and education capabilities outside of the United States and expanding our relationships with distributors and manufacturers. Doing business internationally involves a number of risks, including:

- multiple, conflicting and changing laws and regulations such as tax laws, export and import restrictions, employment laws, regulatory requirements and other governmental approvals, permits and licenses;
- failure by us or our distributors to obtain regulatory approvals for the sale or use of our product candidates in various countries;
- difficulties in managing foreign operations;
- complexities associated with managing multiple payor-reimbursement regimes or self-pay systems;
- limits on our ability to penetrate international markets if our product candidates cannot be processed by a manufacturer appropriately qualified in such markets;
- financial risks, such as longer payment cycles, difficulty enforcing contracts and collecting accounts receivable and exposure to foreign currency exchange rate fluctuations;
- reduced protection for intellectual property rights;
- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, boycotts, curtailment of trade and other business restrictions; and
- failure to comply with the Foreign Corrupt Practices Act, including its books and records provisions and its anti-bribery provisions, by maintaining accurate information and control over sales and distributors' activities.

Any of these risks, if encountered, could significantly harm our future international expansion and operations and, consequently, have a material adverse effect on our financial condition, results of operations and cash flows.

We may acquire other businesses or form joint ventures or make investments in other companies or technologies that could harm our operating results, dilute our stockholders' ownership, increase our debt or cause us to incur significant expense.

As part of our business strategy, we may pursue acquisitions of businesses and assets such as we recently did with the Pelican. We also may pursue strategic alliances and joint ventures that leverage our core technology and industry experience to expand our offerings or distribution. Other than our recent acquisition of 80% of the equity of Pelican, we have no experience with acquiring other companies and limited experience with forming strategic alliances and joint ventures. We may not be able to find suitable partners or acquisition candidates, and we may not be able to complete such transactions on favorable terms, if at all. If we make any acquisitions, we may not be able to integrate these acquisitions successfully into our existing business, and we could assume unknown or contingent liabilities. Any future acquisitions also could result in significant write-offs or the incurrence of debt and contingent liabilities, any of which could have a material adverse effect on our financial condition, results of operations and cash flows. Integration of an acquired company also may disrupt ongoing operations and require management resources that would otherwise focus on developing our existing business. We may experience losses related to investments in other companies, which could have a material negative effect on our results of operations. We may not identify or complete these transactions in a timely manner, on a cost-effective basis, or at all, and we may not realize the anticipated benefits of any acquisition, technology license, strategic alliance or joint venture.

To finance any acquisitions or joint ventures, we may choose to issue shares of our common stock as consideration, which would dilute the ownership of our stockholders. If the price of our common stock is low or volatile, we may not be able to acquire other companies or fund a joint venture project using our stock as consideration. Alternatively, it may be necessary for us to raise additional funds for acquisitions through public or private financings. Additional funds may not be available on terms that are favorable to us, or at all.

Uncertainty regarding health care reform and declining general economic or business conditions may have a negative impact on our business.

Continuing concerns over U.S. health care reform legislation and energy costs, geopolitical issues, the availability and cost of credit and government stimulus programs in the United States and other countries have contributed to increased volatility and diminished expectations for the global economy. If the economic climate does not improve or continues to be uncertain, our business, as well as the financial condition of our suppliers and our third-party payors, could be adversely affected, resulting in a negative impact on our business, financial condition and results of operations.

The U.S. government may have "march-in rights" to certain of our intellectual property.

Because federal grant monies were used in support of the research and development activities that resulted in certain of our issued pending U.S. patent applications, the federal government retains what are referred to as "march-in rights" to patents that are granted on these applications.

In particular, the National Institutes of Health, which administered grant monies to the primary inventor of the technology we license, technically retain the right to require us, under certain specific circumstances, to grant the U.S. government either a nonexclusive, partially exclusive or exclusive license to the patented invention in any field of use, upon terms that are reasonable for a particular situation. Circumstances that trigger march-in rights include, for example, failure to take, within a reasonable time, effective steps to achieve practical application of the invention in a field of use, failure to satisfy the health and safety needs of the public and failure to meet requirements of public use specified by federal regulations. The National Institutes of Health can elect to exercise these march-in rights on their own initiative or at the request of a third-party.

Risk Factors Relating to the Pelican Acquisition (the “Acquisition”)

Several of Pelican’s directors have conflicts of interest that may have influenced them to support or approve the Acquisition without regard to your interests.

Jeffrey Wolf and Edward Smith serve on the board of directors of Heat and Pelican and are expected to continue to serve on the board of directors of Heat following the consummation of the Acquisition. Taylor Schreiber, M.D., Ph.D., serves as the Chairman of Heat’s Scientific Advisory Board and serves on Pelican’s board of directors. John Monahan, Ph.D. a director of Heat, is a member of the limited liability company that owns shares of common stock of Pelican. They each have a direct or indirect financial interest in both Pelican and our company.

In order to develop Pelican’s product candidates and receive the grant funding awarded by CPRIT, we will have to devote significant resources to Pelican.

Neither we nor Pelican are expected to derive revenue from any source in the near future until they or their potential partners successfully commercialize products. The CPRIT Grant requires that Pelican provide matching funds for one half of the award amount in order for Pelican to receive the grant funding. In order to receive the full \$15.2 million award over three years, Pelican must raise matching funds in the aggregate amount of \$7,622,611. Pelican has received from us matching funds in the amount of \$910,231 and the grant award in the amount of \$1,820,462 for the first contract fiscal year has been made available to Pelican from CPRIT. For the second fiscal year (June 2017 through May 2018) of the award, Pelican must provide matching funds of \$3,177,507 in order for CPRIT to provide \$6,355,014 of grant funding. For the third fiscal year (June 2018 through May 2019) of the award Pelican must provide matching funds of \$3,534,873 in order for CPRIT to provide \$7,069,746 of grant funding. In addition, we have agreed to loan Pelican approximately \$250,000 to pay Pelican’s legal fees and expenses incurred in connection with the Acquisition. Our financial statements have been prepared under the assumption that we will continue as a going concern; however, we have incurred significant losses from operations to date and we expect our expenses to increase in connection with our ongoing activities, and the addition of Pelican’s activities. There can be no assurance that funding will be available on acceptable terms on a timely basis, or at all. The various ways that we could raise capital carry potential risks. Any additional sources of financing will likely involve the issuance of our equity securities, which will have a dilutive effect on our stockholders. If we raise funds through collaborations and licensing arrangements, we might be required to relinquish significant rights to its technologies or tests or grant licenses on terms that are not favorable to us. If we do not succeed in raising additional funds on acceptable terms or at all, we may be unable to complete planned preclinical and clinical trials, access the CPRIT award or obtain approval of our product candidates from the FDA and other regulatory authorities.

If Pelican is unable to hire additional qualified personnel, its ability to utilize the CPRIT grant will be forfeited .

In order to access the CPRIT grant a majority of Pelican’s employees must reside in Texas as well as its Chief Executive Officer and other executive officers. Pelican has identified qualified individuals and will have to negotiate agreements with each identified individual and will also need to hire such additional qualified personnel with expertise in preclinical testing, clinical research and testing, government regulation, formulation and manufacturing, sales and marketing and accounting and financing. Pelican will compete for qualified individuals with numerous biopharmaceutical companies, universities and other research institutions. Competition for such individuals is intense, and there can be no assurance that the search for such personnel will be successful. Attracting and retaining qualified personnel will be critical to Pelican’s access to the CPRIT grant.

The combined company may not experience the anticipated strategic benefits of the Acquisition.

We believe that the Acquisition will provide certain strategic benefits that may not be realized by each of the companies if Pelican was not acquired by us. Specifically, we believe the Acquisition provides certain strategic benefits which would enable us to accelerate our business plan through an increased access to capital in the public equity markets. The market price of our common stock may decline as a result of the Acquisition if the combined company does not achieve the perceived benefits of the Acquisition as rapidly or to the extent anticipated by us or Pelican or investors, financial or industry analysts. There can be no assurance that these anticipated benefits of the Acquisition will materialize or that if they materialize will result in increased stockholder value or revenue stream to the combined company.

We may be unable to successfully integrate the Pelican businesses with its current management and structure.

Our failure to successfully complete the integration of Pelican could have an adverse effect on our prospects, business activities, cash flow, financial condition, results of operations and stock price. Integration challenges may include the following:

- assimilating Pelican ' s technology and retaining personnel in Texas as required by the CPRIT grant award;
- estimating the capital, personnel and equipment required for Pelican based on the historical experience of management with the businesses they are familiar with;
- minimizing potential adverse effects on existing business relationships;
- successfully developing the new products and services; and
- coordinating our efforts throughout various distant localities such as Texas where Pelican is headquartered and must remain headquartered in order to access the CPRIT grant award.

Pelican has had limited operations to date.

Pelican is a start-up entity and has had limited operations to date. As a start-up entity, Pelican is subject to many of the risks common to such enterprises, including its ability to implement its business plan, market acceptance of its proposed business and products, under-capitalization, cash shortages, limitations with respect to personnel, financing and other resources, competition from better funded and experienced companies, and uncertainty of its ability to generate revenues. There is no assurance that its activities will be successful or will result in any revenues or profit, and the likelihood of its success must be considered in light of the stage of its development. Even if it generates revenue, there can be no assurance that it will be profitable. In addition, no assurance can be given that it will be able to consummate its business strategy and plans, as described herein, or that financial, technological, market, or other limitations may force it to modify, alter, significantly delay, or significantly impede the implementation of such plans. Pelican has insufficient results for investors to use to identify historical trends or even to make quarter to quarter comparisons of its operating results. Pelican's revenue and income potential is unproven and its business model is continually evolving. Pelican is subject to the risks inherent to the operation of a new business enterprise, and there can be no assurance that Pelican will be able to successfully address these risks.

Pelican has a limited operating history upon which to evaluate its ability to commercialize its products .

Pelican is a development-stage company and its success is dependent upon its ability to develop and commercialize its products and it has not demonstrated an ability to perform the functions necessary for the successful development and commercialization of any product candidates. The successful commercialization of any product candidates will require Pelican to perform a variety of functions, including:

- continuing to undertake preclinical development trials and initiating clinical trials;
- participating in regulatory approval processes and obtaining regulatory approvals;
- formulating and manufacturing products; and
- conducting sales and marketing activities.

Pelican ' s operations have been limited to organizing and staffing Pelican, acquiring, developing and securing its proprietary technology and undertaking preclinical studies of its product candidates. Pelican has yet to engage in any clinical trials and therefore the safety of its product candidates is uncertain.

Pelican has generated operating losses and experienced negative cash flows and it is uncertain whether it will achieve profitability.

For the year ended December 31, 2016, Pelican incurred a net loss of (\$703,736). At December 31, 2016, Pelican had an accumulated deficit of (\$3,042,685), a stockholder's deficit of (\$990,299) and a working capital deficiency of (\$553,471). Pelican will continue to incur operating losses until such time, if ever, as it is able to achieve sufficient levels of revenue from operations. Its ability to achieve profitability will depend on the market development and acceptance of its product offerings and its capacity to develop, introduce and sell its products to its targeted markets. There can be no assurance that Pelican will ever generate significant sales or achieve profitability. Accordingly, the extent of future losses and the time required to achieve profitability, if ever, cannot be predicted at this point.

It is expected that Pelican will experience negative cash flows for the foreseeable future as it funds its operating losses and capital expenditures. As a result, we may seek to raise additional funding in the future in order to obtain matching funds under the CPRIT Grant. We may not be able to raise additional funding on favorable terms or at all.

Pelican's consolidated financial statements have been prepared assuming that it will continue as a going concern .

Pelican's consolidated financial statements as of December 31, 2016 have been prepared under the assumption that it will continue as a going concern for the next twelve months. Our management has concluded that substantial doubt exists about our ability to continue as a going concern as a result of anticipated capital needs as well as past recurring losses and an accumulated deficit. Pelican's ability to continue as a going concern is dependent upon its ability to obtain additional equity or debt financing, attain further operating efficiencies, reduce expenditures, and, ultimately, to generate revenue. Pelican's consolidated financial statements as of December 31, 2016 did not include any adjustments that might result from the outcome of this uncertainty. If Pelican cannot continue as a viable entity, we and we other stockholders may lose some or all of their investment in Pelican.

Pelican's product candidates are in early stages of clinical trials .

Because Pelican's product candidates are in early stages of development they will require extensive preclinical and clinical testing. Pelican's lead product has not yet entered clinical trials and cost, speed and ability to advance through clinical trials is uncertain. Pelican cannot predict with any certainty if or when it might submit a Biologics License Application (BLA) for regulatory approval for any of its product candidates or whether any such BLA will be accepted.

Pelican relies on licenses to use various technologies that are material to its business and if the agreements were to be terminated, it would halt its ability to market its products and technology, as well as have an immediate material adverse effect on its business, operating results and financial condition.

Pelican has licensing agreements with the University granting it the right to use certain critical intellectual property. The terms of the licensing agreements continue until the end of the life of the last patent to expire. If Pelican breaches the terms of these licensing agreements, including any failure to make minimum royalty payments required thereunder or failure to reach certain developmental milestones such as use best efforts to introduce a licensed product in certain territories by 2020, the licensor has the right to terminate the license. If Pelican were to lose or otherwise be unable to maintain these licenses on acceptable terms, it would halt its ability to market its products and technology, which would have an immediate material adverse effect on its business, operating results and financial condition.

Pelican may be unable to generate sufficient revenues to meet the minimum royalties or developmental milestones required under its license agreements or to pay outstanding obligations.

For the year ending December 31, 2017 and thereafter Pelican's minimum royalty obligations (exclusive of any milestone payments) under its licensing agreements are \$40,000 annually. No assurance can be given that Pelican will generate sufficient revenue or raise additional financing to make these minimum royalty payments. The license agreements also provide for certain developmental milestones. No assurance can be given that Pelican will meet all of the required developmental milestones. Any failure to make the payments or reach the milestones required by the license agreements would permit the licensor to terminate the license. If Pelican were to lose or otherwise be unable to maintain these licenses, it would halt its ability to market its products and technology, which would have an immediate material adverse effect on its business, operating results and financial condition.

There is uncertainty as to market acceptance of Pelican's technology and products.

Pelican has conducted its own research into the markets for its products; however, because it will be a new entrant into the market, it cannot guarantee market acceptance of its products and have somewhat limited information on which to estimate anticipated level of sales. Pelican's products will require patients and doctors to adopt its technology. Pelican's industry is susceptible to rapid technological developments and there can be no assurance that it will be able to match any new technological advances. If it is unable to match the technological changes in the needs of its customers the demand for its products will be reduced.

Risks Related to Our Common Stock

Our failure to meet the continued listing requirements of the NASDAQ Capital Market could result in a de-listing of our common stock.

Our shares of common stock are currently listed on The NASDAQ Capital Market. If we fail to satisfy the continued listing requirements of The NASDAQ Capital Market, such as the corporate governance requirements, minimum bid price requirement or the minimum stockholder's equity requirement, The NASDAQ Capital Market may take steps to de-list our common stock. Any de-listing would likely have a negative effect on the price of our common stock and would impair stockholders' ability to sell or purchase its common stock when they wish to do so. On March 15, 2017, we received written notice from the Listing Qualifications Department of NASDAQ Stock Market LLC ("NASDAQ") notifying us that for the preceding 30 consecutive business days (January 31, 2017 through March 14, 2017), our common stock did not maintain a minimum closing bid price of \$1.00 ("Minimum Bid Price Requirement") per share as required by NASDAQ Listing Rule 5550(a)(2). The notice has no immediate effect on the listing or trading of our common stock which will continue to trade on The NASDAQ Capital Market under the symbol "HTBX." On September 12, 2017, we received written notice from NASDAQ that we had been granted an additional 180-day extension, or until March 12, 2018, to regain compliance with the Minimum Bid Price Requirement. Compliance can be achieved automatically and without further action if the closing bid price of our common stock is at or above \$1.00 for a minimum of ten consecutive business days at any time prior to March 12, 2018, in which case NASDAQ will notify us of our compliance and the matter will be closed. We can also regain compliance the Company's cure the deficiency on or before March 12, 2018 by effecting a reverse stock split, if necessary.

The March 15, 2017 notice was the third notice we received from NASDAQ notifying us that we were not in compliance with continued listing requirements of The NASDAQ Capital Market. No assurance can be given that we will be able to satisfy its continued listing requirements and maintain the listing of our common stock on The NASDAQ Capital Market. We intend to attempt to take actions to restore its compliance with NASDAQ's listing requirements, but we can provide no assurance that any action taken by us would result in our common stock meeting the NASDAQ listing requirements, or that any such action would stabilize the market price or improve the liquidity of our common stock. Although our stockholders have approved a reverse stock split, there can be no assurance that a reverse stock split if effected will result in an increase in our stock price for the requisite time period.

On May 2, 2016, we received written notice from the Listing Qualifications Department of NASDAQ Stock Market LLC notifying us that for the preceding 30 consecutive business days (March 18, 2016 through April 29, 2016), our common stock did not maintain a minimum closing bid price of \$1.00 (“Minimum Bid Price Requirement”) per share as required by NASDAQ Listing Rule 5550(a)(2). Compliance was achieved automatically and without further action when the closing bid price of our common stock was at or above \$1.00 for a minimum of ten consecutive business days at any time during the 180-day compliance period.

In addition, on February 22, 2016, we received a deficiency letter from the NASDAQ indicating that as of December 31, 2015 our stockholders’ equity of \$2,495,000 did not meet the \$2,500,000 minimum required to maintain continued listing. Although the proceeds of our March 2016 offering satisfied the continued listing requirements of the NASDAQ with respect to stockholders’ equity, there can be no assurance that we will continue to satisfy such requirements.

The possible issuance of common stock subject to options, restricted stock units and warrants may dilute the interests of stockholders.

In 2009, we adopted a 2009 Stock Option and Restricted Stock Plan (the “2009 Plan”). In 2014, we adopted a 2014 Stock Incentive Plan (the “2014 Plan”) and, in 2016 and 2015, we increased the number of shares of common stock that we have authority to grant under the 2014 Plan to a total of 3 million shares. In addition, at the 2017 Annual Meeting, our 2017 Stock Incentive Plan (the “2017 Plan”) was approved by our stockholders, which provides for the issuance of up to 5,000,000 shares of common stock as compensation awards. As of June 30, 2017, awards for 2,520,000 shares of common stock have been granted under the 2009 Plan and the 2014 Plan and there were 614,483 shares of common stock remaining available for grant under these plans. In addition, as of June 30, 2017, we have 17,392 shares issuable upon exercise of warrants granted to third parties in connection with prior private placements of our equity securities and debt, 2,961,571 shares of common stock issuable upon exercise of warrants granted to third parties in connection with our recent public offering, and 125,000 shares of common stock issuable at \$12.50 per share upon exercise of warrants issued to underwriters in connection with our initial public offering. To the extent that outstanding stock options and warrants are exercised, or additional securities are issued, dilution to the interests of our stockholders may occur. Moreover, the terms upon which we will be able to obtain additional equity capital may be adversely affected since the holders of the outstanding options can be expected to exercise them at a time when we would, in all likelihood, be able to obtain any needed capital on terms more favorable to us than those provided in such outstanding options.

We have additional securities available for issuance, which, if issued, could adversely affect the rights of the holders of our common stock.

Our certificate of incorporation authorizes the issuance of 100,000,000 shares of our common stock and 10,000,000 shares of preferred stock. In certain circumstances, the common stock and preferred stock, as well as the awards available for issuance under the 2009, 2014 Plan and 2017 Plan, can be issued by our board of directors, without stockholder approval. Any future issuances of such stock would further dilute the percentage ownership of us held by holders of preferred stock and common stock. In addition, the issuance of preferred stock may be used as an “anti-takeover” device without further action on the part of our stockholders, and may adversely affect the holders of the common stock. Our board of directors is authorized to create and issue from time to time, without stockholder approval, up to an aggregate of 10,000,000 shares of preferred stock of which 8,212,500 have been designated, in one or more series and to establish the number of shares of any series of preferred stock and to fix the designations, powers, preferences and rights of the shares of each series and any qualifications, limitations or restrictions of the shares of each series. The authority to designate preferred stock may be used to issue series of preferred stock, or rights to acquire preferred stock, that could dilute the interest of, or impair the voting power of, holders of the common stock or could also be used as a method of determining, delaying or preventing a change of control.

We have never paid dividends and have no plans to pay dividends in the future.

Holders of shares of our common stock are entitled to receive such dividends as may be declared by our board of directors. To date, we have paid no cash dividends on our shares of our preferred or common stock and we do not expect to pay cash dividends in the foreseeable future. We intend to retain future earnings, if any, to provide funds for operations of our business. Therefore, any return investors in our preferred or common stock may have will be in the form of appreciation, if any, in the market value of their shares of common stock.

We are an “emerging growth company,” and any decision on our part to comply with certain reduced disclosure requirements applicable to emerging growth companies could make our common stock less attractive to investors.

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act enacted in April 2012, and, for as long as we continue to be an emerging growth company, we may choose to take advantage of exemptions from various reporting requirements applicable to other public companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, not being required to comply with any new requirements adopted by the Public Company Accounting Oversight Board, or the PCAOB, requiring mandatory audit firm rotation or a supplement to the auditor’s report in which the auditor would be required to provide additional information about the audit and the financial statements of the issuer, not being required to comply with any new audit rules adopted by the PCAOB after April 5, 2012 unless the SEC determines otherwise, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could remain an emerging growth company until the earliest of: (i) the last day of the fiscal year in which we have total annual gross revenues of \$1 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of our first sale of common equity securities pursuant to an effective registration statement; (iii) the date on which we have issued more than \$1 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer. We cannot predict if investors will find our common stock less attractive if we choose to rely on these exemptions. If some investors find our common stock less attractive as a result of any choices to reduce future disclosure, there may be a less active trading market for our common stock and our stock price may be more volatile. Further, as a result of these scaled regulatory requirements, our disclosure may be more limited than that of other public companies and you may not have the same protections afforded to stockholders of such companies.

Under Section 107(b) of the Jumpstart Our Business Startups Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

Future sales of our common stock by our existing stockholders could cause our stock price to decline.

On September 13, 2017, we had 35,788,912 shares of our common stock outstanding, all of which are currently eligible for sale in the public market, subject, in certain circumstances to the volume, manner of sale and other limitations under Rule 144 promulgated under the Securities Act. It is conceivable that stockholders may wish to sell some or all of their shares. If our stockholders sell substantial amounts of our common stock in the public market at the same time, the market price of our common stock could decrease significantly due to an imbalance in the supply and demand of our common stock. Even if they do not actually sell the stock, the perception in the public market that our stockholders might sell significant shares of our common stock could also depress the market price of our common stock.

A decline in the price of shares of our common stock might impede our ability to raise capital through the issuance of additional shares of our common stock or other equity securities, and may cause stockholders to lose part or all of their investment in our shares of common stock.

Our shares of common stock are from time to time thinly traded, so stockholders may be unable to sell at or near ask prices or at all if they need to sell shares to raise money or otherwise desire to liquidate their shares.

Our common stock has from time to time been “thinly-traded,” meaning that the number of persons interested in purchasing our common stock at or near ask prices at any given time may be relatively small or non-existent. This situation is attributable to a number of factors, including the fact that we are a small company that is relatively unknown to stock analysts, stock brokers, institutional investors and others in the investment community that generate or influence sales volume, and that even if we came to the attention of such persons, they tend to be risk-averse and would be reluctant to follow an unproven company such as ours or purchase or recommend the purchase of our shares until such time as we became more seasoned and viable. As a consequence, there may be periods of several days or more when trading activity in our shares is minimal or non-existent, as compared to a seasoned issuer that has a large and steady volume of trading activity that will generally support continuous sales without an adverse effect on share price. We cannot give stockholders any assurance that a broader or more active public trading market for our common shares will develop or be sustained, or that current trading levels will be sustained.

The trading in our stock has in the past and may continue to be very volatile.

Our stock price and the trading volume of our stock continues to be very volatile. As such, investors may find it difficult to obtain accurate stock price quotations and holders of our stock may be unable to resell their stock at desirable prices. Sales of substantial amounts of our common stock, or the perception that such sales might occur, could adversely affect prevailing market prices of our common stock and our stock price may decline substantially in a short period of time. As a result, our stockholders could suffer losses or be unable to liquidate holdings.

Certain provisions of the General Corporation Law of the State of Delaware may have anti-takeover effects that may make an acquisition of our company by another company more difficult.

We are subject to the provisions of Section 203 of the General Corporation Law of the State of Delaware, which prohibits a Delaware corporation from engaging in any business combination, including mergers and asset sales, with an interested stockholder (generally, a 15% or greater stockholder) for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. The operation of Section 203 may have anti-takeover effects, which could delay, defer or prevent a takeover attempt that a holder of our common stock might consider in its best interest.

The shares of common stock offered under the FBR Sales Agreement may be sold in “at the market” offerings, and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares that are sold under the FBR Sales Agreement at different times will likely pay different prices, and so may experience different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices, and numbers of shares sold, and there is no minimum or maximum sales price. Investors may experience declines in the value of their shares as a result of share sales made at prices lower than the prices they paid.

Reports published by securities or industry analysts, including projections in those reports that exceed our actual results, could adversely affect our common stock price and trading volume.

Securities research analysts, including those affiliated with our underwriters, establish and publish their own periodic projections for our business. These projections may vary widely from one another and may not accurately predict the results we actually achieve. Our stock price may decline if our actual results do not match securities research analysts’ projections. Similarly, if one or more of the analysts who writes reports on us downgrades our stock or publishes inaccurate or unfavorable research about our business or if one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, our stock price or trading volume could decline. While we expect securities research analyst coverage following this offering, if no securities or industry analysts begin to cover us, the trading price for our stock and the trading volume could be adversely affected.

Our management team may invest or spend the proceeds of our prior offering in ways with which stockholders may not agree or in ways that may not yield a significant return.

Our management will have broad discretion over the use of proceeds from this offering. The net proceeds from this offering are to be used for general corporate purposes, which may include, among other things, increasing our working capital, funding research and development, clinical trials, vendor payables, potential regulatory submissions, hiring additional personnel and capital expenditures. Our management has considerable discretion in the application of the net proceeds, and stockholders will not have the opportunity to assess whether the proceeds are being used appropriately. The net proceeds may be used for corporate purposes that do not improve our operating results or enhance the value of our common stock. See “Use of Proceeds.”

Our need for future financing may result in the issuance of additional securities that will cause investors to experience dilution .

Our cash requirements may vary from those now planned depending upon numerous factors, including the result of future research and development activities. We expect our expenses to increase in connection with our ongoing activities, particularly as we continue the research and development and initiate and conduct clinical trials of, and seek marketing approval for, our product candidates. In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. There are no other commitments by any person for future financing. Our securities may be offered to other investors at a price lower than the price per share offered to current stockholders, or upon terms that may be deemed more favorable than those offered to current stockholders. In addition, the issuance of securities in any future financing may dilute an investor's equity ownership and have the effect of depressing the market price for our securities. Moreover, we may issue derivative securities, including options and/or warrants, from time to time, to procure qualified personnel or for other business reasons. The issuance of any such derivative securities, which is at the discretion of our board of directors, may further dilute the equity ownership of our stockholders. No assurance can be given as to our ability to procure additional financing, if required, and on terms deemed favorable to us. To the extent additional capital is required and cannot be raised successfully, we may then have to limit our then current operations and/or may have to curtail certain, if not all, of our business objectives and plans.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein contain forward-looking statements, including statements regarding the progress and timing of our product development, the goals of our development activities, estimates of the potential markets for our product candidates, estimates of the capacity of manufacturing and other facilities to support our products, our expected future revenues, operations and expenditures and projected cash needs. The forward-looking statements are contained principally in the sections entitled “Prospectus Summary,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business.” These statements relate to future events of our financial performance and involve known and unknown risks, uncertainties and other factors that could cause our actual results, levels of activity, performance or achievement to differ materially from those expressed or implied by these forward-looking statements. Those risks and uncertainties include, among others:

- our ability to implement our business plan;
- our ability to raise additional capital to meet our liquidity needs;
- our ability to generate sufficient proceeds from the rights offering ;
- our ability to generate product revenues;
- our ability to achieve profitability;
- our ability to comply with our loan covenants;
- our ability to satisfy U.S. (including FDA) and international regulatory requirements;
- our ability to obtain market acceptance of our technology and products;
- our ability to compete in the market;
- our ability to advance our clinical trials;
- our ability to fund, design and implement clinical trials;
- our ability to demonstrate that our product candidates are safe for human use and effective for indicated uses;
- our ability to gain acceptance of physicians and patients for use of our products;
- our dependency on third-party researchers and manufacturers and licensors;
- our ability to effectively implement cost-cutting measures;
- our ability to establish and maintain strategic partnerships, including for the distribution of products;
- our ability to attract and retain sufficient, qualified personnel;
- our ability to obtain or maintain patents or other appropriate protection for the intellectual property;
- our dependency on the intellectual property licensed to us or possessed by third parties;
- our ability to adequately support future growth;
- Pelican ’ s ability to operate successfully and our ability to integrate our operations with those of Pelican; and
- potential product liability or intellectual property infringement claims.

Forward-looking statements include all statements that are not historical facts. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “could,” “would,” “expects,” “plans,” “anticipates,” “believes,” “estimates,” “projects,” “predicts,” “potential,” or the negative of those terms, and similar expressions and comparable terminology intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. These forward-looking statements represent our estimates and assumptions only as of the date of this prospectus and, except as required by law, we undertake no obligation to update or review publicly any forward-looking statements, whether as a result of new information, future events or otherwise after the date of this prospectus. You should read this prospectus, the documents incorporated by reference in this prospectus, the documents referenced in this prospectus and the documents filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

USE OF PROCEEDS

Assuming the exercise of subscription rights to purchase 12,000,000 shares of common stock at an assumed subscription price of \$0.75 per share (the last reported sale price of our common stock on the NASDAQ Capital Market on October 9, 2017), we estimate that the net proceeds from this rights offering will be approximately \$8.1 million, after deducting expenses related to the rights offering payable by us estimated at approximately \$0.9 million, including dealer-manager fees. If the offering size is increased and subscription rights are exercised to purchase 15,000,000 shares of common stock at an assumed subscription price of \$0.75 per share (the last reported sale price of our common stock on the NASDAQ Capital Market on October 9, 2017) we estimate that the net proceeds from this rights offering will be approximately \$10.1 million, after deducting expenses related to the rights offering payable by us estimated at approximately \$1.1 million, including dealer-manager fees.

A \$0.10 increase (decrease) in the assumed subscription price of \$0.75 per share would increase (decrease) the expected net proceeds of this rights offering by \$1.1 million, assuming the exercise of subscription rights to purchase 12,000,000 shares of common stock.

We are conducting this rights offering to raise capital that we intend to use to fund our and our subsidiaries' preclinical and clinical programs and for working capital and general corporate purposes, including, to acquire, license or invest in complementary businesses, technologies, product candidates or other intellectual property. We have broad discretion in determining how the proceeds of this offering will be used, and our discretion is not limited by the aforementioned possible uses. Our board of directors believes the flexibility in application of the net proceeds is prudent. See "Risk Factors—Risks Related to this Rights Offering—We will have broad discretion in the use of the net proceeds from the rights offering and may not use the proceeds effectively."

As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the net proceeds to be received from this offering. The amounts and timing of our actual expenditures will depend on numerous factors including the progress in, and costs of, our clinical trials and other preclinical development programs and the amount of funding, if any, received from grants. Accordingly, our management will have broad discretion in the application of the net proceeds, and investors will be relying on the judgment of management regarding the application of the net proceeds from the offering. We may find it necessary or advisable to reallocate the net proceeds of this offering; however, any such reallocation would be substantially limited to the categories set forth above as we do not intend to use the net proceeds for other purposes. Pending such uses set forth above, we plan to invest the net proceeds in government securities and other short-term investment grade, marketable securities.

CAPITALIZATION

The following table sets forth our capitalization as of June 30, 2017:

- on an actual basis; and
- on an as adjusted basis to give effect to the exercise in the rights offering of subscription rights for 12,000,000 shares of common stock at an assumed subscription price of \$0.75 per share (the last reported sale price of our common stock on the NASDAQ Capital Market on October 9, 2017) and after deducting expenses related to the rights offering payable by us estimated at approximately \$0.9 million, including dealer-manager fees.

This capitalization table should be read in conjunction with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our historical financial statements and notes to those financial statements that are incorporated by reference in this prospectus.

	As of June 30, 2017	
	Actual	As Adjusted ⁽¹⁾
Cash and cash equivalents	\$ 8,345,769	\$ 16,405,769
Total current and long term liabilities	8,056,001	8,056,001
Common stock, \$0.0002 par value; 50,000,000 shares authorized, 35,769,846 shares issued and outstanding, actual; Preferred Stock, \$0.001 par value, 10,000,000 shares authorized, no shares issued and outstanding	6,839	9,239
Additional paid-in capital	73,726,240	81,783,840
Accumulated deficit	(63,413,508)	(63,413,508)
Accumulated other Comprehensive Loss	(148,266)	(148,266)
Total Stockholders’ Equity—Less Non-Controlling Interest	10,171,305	18,231,305
Non-Controlling Interest	(1,162,603)	(1,162,603)
Total stockholders’ equity	9,008,702	17,068,702
Total capitalization	\$ 17,064,703	\$ 25,124,703

(1) The number of shares of common stock shown above to be outstanding after this rights offering is based on 35,769,846 shares outstanding as of June 30, 2017, and excludes as of that date:

- 2,520,000 shares of our common stock issuable upon exercise of outstanding options under our equity incentive plans at a weighted-average exercise price of \$2.16 per share;
- 3,103,963 shares of our common stock reserved for issuance upon the exercise of outstanding warrants with a weighted-average exercise price of \$1.46 per share; and
- 614,483 shares of our common stock which are reserved for equity awards that may be granted under our equity incentive plans.

Each \$0.10 increase (decrease) in the assumed subscription price of \$0.75 per share (the last reported sale price of our common stock on the NASDAQ Capital Market on October 9, 2017) would increase (decrease) each of cash, additional paid-in capital, total shareholders’ equity (deficit) and total capitalization by approximately \$1,104,000, assuming subscription rights to purchase 12,000,000 shares of common stock, and after deducting estimated offering expenses.

Similarly, each increase (decrease) of 1,000,000 shares of common stock to be purchased upon exercise of subscription rights offered at \$0.75 per share (the last reported sale price of our common stock on the NASDAQ Capital Market on October 9, 2017) would increase (decrease) cash, additional paid-in capital, total shareholders’ equity (deficit) and total capitalization by approximately \$690,000, assuming the assumed subscription price remains at \$0.75 (the last reported sale price of our common stock on the NASDAQ Capital Market on October 9, 2017) and after deducting estimated selling agents’ commissions and estimated offering expenses payable by us.

DILUTION

Purchasers of our common stock in the rights offering will experience an immediate and substantial dilution of the net tangible book value of the shares purchased. At June 30, 2017, we had a net tangible book value of approximately \$953,364 or \$0.03 per share of our common stock. After giving effect to the assumed exercise of subscription rights to purchase 12,000,000 shares of our common stock in the rights offering at an assumed subscription price of \$0.75 (the last reported sale price of our common stock on the NASDAQ Capital Market on October 9, 2017) and after deducting transaction and offering expenses, the pro forma net tangible book value at June 30, 2017, attributable to common stockholders would have been \$9,013,364 or \$0.19 per share of our common stock. This amount represents an immediate dilution to purchasers in the rights offering of \$0.56. The following table illustrates this per-share dilution.

Assumed subscription price	\$ 0.75
Net tangible book value per share prior to the rights offering	\$ 0.03
Increase per share attributable to the rights offering	\$ 0.16
As adjusted net tangible book value per share after the rights offering	\$ 0.19
Dilution in net tangible book value per share to purchasers	\$ 0.56

The foregoing discussion and table do not take into account further dilution to new investors that could occur upon the exercise of outstanding options or warrants having a per share exercise price less than the per share offering price to the public in the rights offering. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

If our board of directors, in its sole discretion, determines to increase the offering size to subscription rights to purchase 15,000,000 shares of our common stock, the as adjusted net tangible book value will increase to \$11,083,364 or approximately \$0.22 per share and would result in an immediate dilution to new investors of \$0.53 per share.

A 20% increase in the assumed subscription price of \$0.75 per share (the last reported sale price of our common stock on the NASDAQ Capital Market on October 9, 2017) would result in an incremental increase to the as adjusted net tangible book value of \$1,656,000 or approximately \$0.22 per share and would result in an incremental increase in dilution to new investors of \$0.12 per share, assuming the exercise of subscription rights to purchase 12,000,000 shares of our common stock in the rights offering and after deducting estimated expenses related to the rights offering payable by us estimated offering expense. A 20% (decrease) in the assumed subscription price of \$0.75 per share (the last reported sale price of our common stock on the NASDAQ Capital Market on October 9, 2017) would result in an incremental decrease to the as adjusted net tangible book value of \$1,656,000 or approximately \$0.12 per share and would result in an incremental decrease in dilution to new investors of \$0.11 per share, assuming the exercise of subscription rights to purchase 12,000,000 shares of our common stock in the rights offering and after deducting estimated expenses related to the rights offering payable by us estimated offering expense.

The table and discussion above are based on 35,769,846 shares of common stock issued and outstanding as of June 30, 2017 and excludes as of that date:

- 2,520,000 shares of our common stock issuable upon the exercise of outstanding stock options with a weighted average exercise price of \$2.16 per share;
- 3,103,963 additional shares of our common stock issuable upon the exercise of outstanding warrants at a weighted average exercise price of \$1.46 per share; and
- 614,483 additional shares of our common stock reserved for future issuance under our equity incentive plans.

THE RIGHTS OFFERING

Please read the following information concerning the subscription rights in conjunction with the statements under “Description of Subscription Rights” in this prospectus, which the following information supplements.

The Subscription Rights

We are distributing, at no charge, to holders of our common stock and holders of our warrants non-transferrable subscription rights to purchase up to an aggregate of 12,000,000 shares of our common stock. Subject to proration, holders of our common stock will receive one subscription right for each share of common stock owned at, and our warrant holders will receive one subscription right for each share of common stock into which the warrants held by them were exercisable at, 5:00 p.m., New York City time, on October 13, 2017. If the aggregate number of shares of common stock for which subscription rights are exercised exceeds 12,000,000 shares, our board of directors, in its sole discretion, will have the right, but no obligation, to increase the size of the offering to subscription rights to purchase up to an aggregate 15,000,000 shares.

Each subscription right will entitle the holder to a basic subscription privilege and an over-subscription privilege, which are described below.

Basic Subscription Privilege

With your basic subscription privilege, subject to proration, you may purchase one share of our common stock per subscription right, upon delivery of the required documents and payment of the subscription price equal to 88%-92% of the volume weighted average price per share of our common stock on the NASDAQ Capital Market for the five trading days immediately preceding and including October 13, 2017, rounded down to the nearest penny. You may exercise all or a portion of your basic subscription privilege. However, if you exercise less than your full basic subscription privilege, you will not be entitled to purchase shares pursuant to your over-subscription privilege.

If the basic subscription rights are exercised for an amount in excess of 12,000,000 shares of common stock (or in excess of 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), the basic subscription rights that have been exercised will be reduced on a *pro rata* basis based on the number of shares each rights holder subscribed for under the basic subscription right, subject to adjustment to eliminate fractional shares, so that the total number of shares issued upon exercise of subscription rights shall equal 12,000,000 shares of common stock (or 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), and any excess subscription amount received by the subscription agent will be promptly returned, without interest, after the rights offering has expired and all prorating calculations and reductions contemplated by the terms of the rights offering have been effected.

Basic subscription rights may only be exercised for whole numbers of shares of our common stock; no fractional shares of common stock will be issued in this rights offering. If the basic subscription rights are exercised for an amount in excess of 12,000,000 shares of common stock (or in excess of 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), the number of shares of common stock each subscription rights holder may acquire will be rounded down to result in delivery of whole shares.

We will deliver certificates (physical, electronic or book-entry form) representing shares of our common stock purchased with the basic subscription privilege as soon as practicable after the rights offering has expired.

Over-Subscription Privilege

If you fully exercise your basic subscription privilege and basic subscription rights are exercised for an amount less than 12,000,000 shares of common stock (or 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), you may also exercise an over-subscription privilege to purchase additional shares of common stock that remain unsubscribed at the expiration of the rights offering, subject to the availability and pro rata allocation of shares among stockholders exercising this over-subscription privilege. To the extent the number of the unsubscribed shares are not sufficient to satisfy all of the properly exercised over-subscription privileges requests, then the available shares will be prorated among those who properly exercised over-subscription privileges based on the number of shares each rights holder subscribed for under the basic subscription right. If this pro rata allocation results in any stockholder receiving a greater number of shares of common stock than the stockholder subscribed for pursuant to the exercise of the over-subscription privilege, then such stockholder will be allocated only that number of shares for which the stockholder oversubscribed, and the remaining shares of common stock will be allocated among all other stockholders exercising the over-subscription privilege on the same pro rata basis described above. The proration process will be repeated until all shares of common stock have been allocated or all over-subscription exercises have been fulfilled, whichever occurs earlier.

In order to properly exercise your over-subscription privilege, you must deliver the subscription payment related to your over-subscription privilege prior to the expiration of the rights offering. Because we will not know the total number of unsubscribed shares prior to the expiration of the rights offering, if you wish to maximize the number of shares you purchase pursuant to your over-subscription privilege, you will need to deliver payment in an amount equal to the aggregate subscription price for the maximum number of shares of our common stock available to you, assuming that no stockholder other than you has purchased any shares of our common stock pursuant to their basic subscription privilege and over-subscription privilege.

We can provide no assurances that you will actually be entitled to purchase the number of shares issuable upon the exercise of your over-subscription privilege in full at the expiration of the rights offering. We will not be able to satisfy your exercise of the over-subscription privilege if all of our stockholders exercise their basic subscription privileges in full, and we will only honor an over-subscription privilege to the extent sufficient shares of our common stock are available following the exercise of subscription rights under the basic subscription privileges.

- To the extent the aggregate subscription price of the maximum number of unsubscribed shares available to you pursuant to the over-subscription privilege is less than the amount you actually paid in connection with the exercise of the over-subscription privilege, you will be allocated only the number of unsubscribed shares available to you, and any excess subscription payments received by the subscription agent will be promptly returned, without interest.
- To the extent holders properly exercise their over-subscription privileges for an aggregate amount of shares that is less than the number of the unsubscribed shares you will be allocated the number of unsubscribed shares for which you actually paid in connection with the over-subscription privilege.

Fractional shares of our common stock resulting from the exercise of the over-subscription privilege will be eliminated by rounding down to the nearest whole share, with the total subscription payment being adjusted accordingly. Any excess subscription payments received by the subscription agent will be promptly returned, without interest.

We will deliver certificates (physical, electronic or book-entry form) representing shares of our common stock purchased with the basic subscription privilege as soon as practicable after the rights offering has expired.

Subscription Price

In determining the subscription price, which is calculated based on 88%-92% of the volume weighted average price per share of our common stock on the NASDAQ Capital Market for the five trading days immediately preceding and including October 13, 2017, rounded down to the nearest penny, our board of directors considered a number of factors, including: the likely cost of capital from other sources, the price at which holders might be willing to participate in the rights offering, historical and current trading prices of our common stock, our need for liquidity and capital and the desire to provide an opportunity to our stockholders and warrant holders to participate in the rights offering on a pro rata basis. In conjunction with its review of these factors, our board of directors also reviewed a range of discounts to market value represented by the subscription prices in various prior rights offerings of public companies. See “Risk Factors—Risks Related to the Rights Offering – The subscription price determined for the rights offering is not necessarily an indication of the value of our common stock.”

Expiration Date

The subscription period during which you may exercise your subscription rights expires at 5:00 p.m., New York City time, on November 8, 2017, which is the expiration of the rights offering. If you do not exercise your subscription rights prior to that time, your subscription rights will expire and will no longer be exercisable. We will not be required to issue shares of our common stock to you if the subscription agent receives your rights certificate or your subscription payment after that time, regardless of when the rights certificate and subscription payment were sent, unless you send the documents in compliance with the guaranteed delivery procedures described below.

Limitation on Exercise of Basic Subscription Privilege and Over-Subscription Privilege

Unless we otherwise agree in writing, a person or entity, together with related persons or entities, may not exercise subscription rights (including over-subscription privileges) to purchase shares of our common stock that, when aggregated with their existing ownership, would result in such person or entity, together with any related persons or entities, owning in excess of twenty percent (20%) of our issued and outstanding shares of common stock following the closing of the transactions contemplated by this rights offering.

In the event that the exercise by a stockholder of the basic subscription privilege or the over-subscription privilege could, as determined by us in our sole discretion, potentially result in a limitation on our ability to use net operating losses, tax credits and other tax attributes, which we refer to as the “Tax Attributes,” under the Internal Revenue Code of 1986, as amended, which we refer to as the “Code”, and rules promulgated by the Internal Revenue Service (the “IRS”), we may, but are under no obligation to, reduce the exercise by such stockholder of the basic subscription privilege or the over-subscription privilege to such number of shares of common stock as we, in our sole discretion, shall determine to be advisable in order to preserve our ability to use the Tax Attributes.

Reasons for the Rights Offering

In authorizing the rights offering, our board of directors carefully evaluated our need for liquidity, financial flexibility and additional capital. Our board of directors also considered several alternative capital raising methods prior to concluding that the rights offering was the appropriate alternative under the circumstances. We are conducting the rights offering to raise capital that we intend to use for general corporate purposes, which may include funding for sales and marketing and general working capital purposes. See “Use of Proceeds.” Although we believe that the rights offering will strengthen our financial condition, our board of directors is making no recommendation regarding your exercise of the subscription rights.

Method of Exercising Subscription Rights

You may exercise your subscription rights as follows:

Subscription by Registered Holders

You may exercise your subscription rights by properly completing and executing the rights certificate together with any required signature guarantees and forwarding it, together with your full subscription payment, to the subscription agent at the address set forth below under “—Subscription Agent,” prior to the expiration of the rights offering.

Subscription by DTC Participants

We expect that the exercise of your subscription rights may be made through the facilities of the Depository Trust Company (“DTC”). If your subscription rights are held of record through DTC, you may exercise your subscription rights by instructing DTC, or having your broker instruct DTC, to transfer your subscription rights from your account to the account of the subscription agent, together with certification as to the aggregate number of subscription rights you are exercising and the number of shares of our common stock you are subscribing for under your basic subscription privilege and your over-subscription privilege, if any, and your full subscription payment.

Subscription by Beneficial Owners

If you are a beneficial owner of shares of our common stock or our warrants that are registered in the name of a broker, custodian bank or other nominee, or if you hold our common stock certificates or certificates representing warrants directly and would prefer to have an institution conduct the transaction relating to the subscription rights on your behalf, you should instruct your broker, custodian bank or other nominee or institution to exercise your subscription rights and deliver all documents and payment on your behalf prior to the expiration date of the rights offering. Your subscription rights will not be considered exercised unless the subscription agent receives from you, your broker, custodian bank, nominee or institution, as the case may be, all of the required documents and your full subscription payment prior to the expiration date of the rights offering.

Payment Method

Payments must be made in full in U.S. currency by:

- check or bank draft payable to Continental Stock Transfer & Trust Company, the subscription agent, drawn upon a U.S. bank;
- postal, telegraphic or express money order payable to the subscription agent; or
- wire transfer of immediately available funds to accounts maintained by the subscription agent.

Payments received after the expiration of the rights offering will not be honored, and the subscription agent will promptly return your subscription payment to you, without interest. The subscription agent will be deemed to receive payment upon:

- clearance of any uncertified check deposited by the subscription agent;
- receipt by the subscription agent of any certified check bank draft drawn upon a U.S. bank;
- receipt by the subscription agent of any postal, telegraphic or express money order; or
- receipt of collected funds in the subscription agent’s account.

If you elect to exercise your subscription rights, we urge you to consider using a certified or cashier’s check, money order or wire transfer of funds to ensure that the subscription agent receives your funds prior to the expiration of the rights offering. If you send an uncertified check, payment will not be deemed to have been received by the subscription agent until the check has cleared, but if you send a certified check bank draft drawn upon a U.S. bank, a postal, telegraphic or express money order or wire or transfer funds directly to the subscription agent’s account, payment will be deemed to have been received by the subscription agent immediately upon receipt of such instruments and wire or transfer.

Any personal check used to pay for shares of our common stock in the rights offering must clear the appropriate financial institutions prior to the expiration date of the rights offering. The clearinghouse may require five or more business days. Accordingly, holders that wish to pay the subscription price by means of an uncertified personal check are urged to make payment sufficiently in advance of the expiration of the rights offering to ensure such payment is received and clears by such date.

You should read the instruction letter accompanying the rights certificate carefully and strictly follow it. **DO NOT SEND RIGHTS CERTIFICATES OR PAYMENTS TO US .**

Except as described below under “—Guaranteed Delivery Procedures,” we will not consider your subscription received until the subscription agent has received delivery of a properly completed and duly executed rights certificate and payment of the full subscription amount. The risk of delivery of all documents and payments is borne by you or your nominee, and not by the subscription agent or us.

The method of delivery of rights certificates and payment of the subscription amount to the subscription agent will be at the risk of the holders of subscription rights. If sent by mail, we recommend that you send those certificates and payments by overnight courier or by registered mail, properly insured, with return receipt requested, and that a sufficient number of days be allowed to ensure delivery to the subscription agent and clearance of payment prior to the expiration of the rights offering.

Unless a rights certificate provides that the shares of our common stock are to be delivered to the record holder of such rights or such certificate is submitted for the account of a bank or a broker, signatures on such rights certificate must be guaranteed by an “eligible guarantor institution,” as such term is defined in Rule 17Ad-15 under the Exchange Act, subject to any standards and procedures adopted by the subscription agent.

Missing or Incomplete Subscription Information

If you do not indicate the number of subscription rights being exercised, or the subscription agent does not receive the full subscription payment for the number of subscription rights that you indicate are being exercised, then you will be deemed to have exercised the maximum number of subscription rights that may be exercised with the aggregate subscription payment you delivered to the subscription agent. If we do not apply your full subscription payment to your purchase of shares of our common stock, any excess subscription payment received by the subscription agent will be promptly returned to you, without interest.

Extension, Cancellation and Amendment

We may extend the expiration of the rights offering for a period not to exceed 30 days by giving oral or written notice to the subscription agent prior to the expiration date of the rights offering, although we do not presently intend to do so. If we elect to extend the expiration of the rights offering, we will issue a press release announcing such extension no later than 9:00 a.m., New York City time, on the next business day after the most recently announced expiration time of the rights offering. We will extend the duration of the rights offering as required by applicable law or regulation and may choose to extend it if we decide to give investors more time to exercise their subscription rights in the rights offering. If we elect to extend the rights offering for a period of more than 30 days, then holders who have subscribed for rights may cancel their subscriptions and receive a refund of all subscription payments advanced. An extension in the offering termination date for up to 30 days will not constitute a fundamental change to the terms of the offering, and will not give persons who have exercised their subscription rights the opportunity to cancel their subscriptions.

Our board of directors may cancel the rights offering at any time prior to the expiration of the rights offering for any reason. In the event the rights offering is cancelled, all subscription payments received by the subscription agent for the rights offering will be promptly returned, without interest.

Our board of directors, in its sole discretion, will have the right, but no obligation, to increase the size of the offering to subscription rights to purchase up to an aggregate 15,000,000 shares if the aggregate number of shares of common stock for which subscription rights are exercised exceeds 12,000,000 shares. An increase in the size of the offering will not constitute a fundamental change to the terms of the offering, and will not give persons who have exercised their subscription rights the opportunity to cancel their subscriptions.

Our board of directors also reserves the right to amend or modify the terms of the rights offering in its sole discretion. If we should make any fundamental changes to the terms of the rights offering set forth in this prospectus, we will file a post-effective amendment to the registration statement in which this prospectus is included, offer potential purchasers who have subscribed for rights the opportunity to cancel such subscriptions and issue a refund of any money advanced by such stockholder and recirculate an updated prospectus after the post-effective amendment is declared effective by the SEC. In addition, upon such event, we may extend the expiration date of the rights offering to allow holders of rights ample time to make new investment decisions and for us to recirculate updated documentation. Promptly following any such occurrence, we will issue a press release announcing any changes with respect to the rights offering and the new expiration date. The terms of the rights offering cannot be modified or amended after the expiration date of the rights offering. Although we do not presently intend to do so, we may choose to amend or modify the terms of the rights offering for any reason, including, without limitation, in order to increase participation in the rights offering. Such amendments or modifications may include a change in the subscription price, although no such change is presently contemplated.

Conditions, Withdrawal and Termination

We reserve the right to withdraw the rights offering prior to the expiration date of the rights offering for any reason. We may terminate the rights offering, in whole or in part, if at any time before completion of the rights offering there is any judgment, order, decree, injunction, statute, law or regulation entered, enacted, amended or held to be applicable to the rights offering that in the sole judgment of our board of directors would or might make the rights offering or its completion, whether in whole or in part, illegal or otherwise restrict or prohibit completion of the rights offering. We may waive any of these conditions and choose to proceed with the rights offering even if one or more of these events occur. If we terminate, cancel or withdraw the rights offering, in whole or in part, we will issue a press release notifying the stockholders of such event, all affected subscription rights will expire without value, and all excess subscription payments received by the subscription agent will be promptly returned, without interest, following such termination, cancellation or withdrawal.

Subscription Agent

The subscription agent for this rights offering is Continental Stock Transfer & Trust Company. The address to which subscription documents, rights certificates, notices of guaranteed delivery and subscription payments other than wire transfers should be mailed or delivered is:

Continental Stock Transfer & Trust Company
Attn: Corporate Actions Department
1 State Street, 30th Floor
New York, New York 10004

If you deliver subscription documents, rights certificates or notices of guaranteed delivery in a manner different than that described in this prospectus, we may not honor the exercise of your subscription rights.

Information Agent

You should direct any questions or requests for assistance concerning the method of subscribing for the shares of our common stock or for additional copies of this prospectus to the information agent, D.F. King & Co., Inc., at (866) 796-1290 (toll free) or htbx@dfking.com.

Fees and Expenses

We will pay all fees charged by the subscription agent and the information agent in connection with the rights offering. We will also pay the fees and expenses charged by RHK Capital as dealer-manager for the rights offering, and placement agent for any unsubscribed shares of common stock, consisting of a 6.0% commission on the gross proceeds of the offering and a 1.8% non-accountable expense fee, as well as an out-of-pocket accountable expense allowance of 0.2% of the gross proceeds of the offering. RHK Capital has informed us that it will re-allow 4.0% of its dealer-manager fee to each broker-dealer whose clients purchase shares of common stock in this offering pursuant to the exercise of their subscription rights. See “Plan of Distribution.” You are responsible for paying any other commissions, fees, taxes or other expenses incurred in connection with the exercise of the subscription rights.

No Fractional Shares

We will not issue fractional shares or cash in lieu of fractional shares. Fractional shares of our common stock resulting from the exercise of the over-subscription privileges will be eliminated by rounding down to the nearest whole share, with the total subscription payment being adjusted accordingly. Any excess subscription payments received by the subscription agent will be promptly returned, without interest. Fractional shares of our common stock will not result from the exercise of the basic-subscription privileges.

Medallion Guarantee May Be Required

Your signature on each subscription rights certificate must be guaranteed by an eligible institution, such as a member firm of a registered national securities exchange or a member of the Financial Industry Regulatory Authority, Inc. (“ FINRA ”), or a commercial bank or trust company having an office or correspondent in the United States, subject to standards and procedures adopted by the subscription agent, unless:

- your subscription rights certificate provides that shares are to be delivered to you as record holder of those subscription rights; or
- you are an eligible institution.

You can obtain a signature guarantee from a financial institution — such as a commercial bank, savings, bank, credit union or broker dealer — that participates in one of the Medallion signature guarantee programs. The three Medallion signature guarantee programs are the following:

- Securities Transfer Agents Medallion Program (STAMP), whose participants include U.S. and Canadian financial institutions;
- Stock Exchanges Medallion Program (SEMP), whose participants include the regional stock exchange member firms and clearing and trust companies; and
- New York Stock Exchange Medallion Signature Program (MSP), whose participants include New York Stock Exchange member firms.

If a financial institution is not a member of a recognized Medallion signature guarantee program, it would not be able to provide signature guarantees. Also, if you are not a customer of a participating financial institution, it is likely the financial institution will not guarantee your signature. Therefore, the best source of a Medallion signature guarantee would be a bank, savings and loan association, brokerage firm or credit union with which you do business. The participating financial institution will use a Medallion imprint or stamp to guarantee your signature, indicating that the financial institution is a member of a Medallion signature guarantee program and is an acceptable signature guarantor.

Notice to Nominees

If you are a broker, custodian bank or other nominee holder that holds shares of our common stock or our warrants for the account of others on the record date, you should notify the beneficial owners of such shares or warrants for whom you are the nominee of the rights offering as soon as possible to learn their intentions with respect to exercising their subscription rights. You should obtain instructions from the beneficial owner, as set forth in the instructions we have provided to you for your distribution to beneficial owners. If the beneficial owner so instructs, you should complete the appropriate rights certificate and submit it to the subscription agent with the proper subscription payment. If you hold shares of our common stock or our warrants for the account(s) of more than one beneficial owner, you may exercise the number of subscription rights to which all beneficial owners in the aggregate otherwise would have been entitled had they been direct holders of our common stock or direct holders of our warrants on the record date, provided that you, as a nominee record holder, make a proper showing to the subscription agent by submitting the form entitled “Nominee Holder Certification” which is provided with your rights offering materials. If you did not receive this form, you should contact the subscription agent to request a copy.

Beneficial Owners

If you are a beneficial owner of shares of our common stock or our warrants or will receive your subscription rights through a broker, custodian bank or other nominee, we will ask your broker, custodian bank or other nominee to notify you of the rights offering. If you wish to exercise your subscription rights, you will need to have your broker, custodian bank or other nominee act for you. If you hold certificates of our common stock or certificates representing warrants directly and would prefer to have your broker, custodian bank or other nominee act for you, you should contact your nominee and request it to effect the transactions for you. To indicate your decision with respect to your subscription rights, you should complete and return to your broker, custodian bank or other nominee the form entitled “Beneficial Owners Election Form.” You should receive this form from your broker, custodian bank or other nominee with the other rights offering materials. If you wish to obtain a separate subscription rights certificate, you should contact the nominee as soon as possible and request that a separate subscription rights certificate be issued to you. You should contact your broker, custodian bank or other nominee if you do not receive this form, but you believe you are entitled to participate in the rights offering. We are not responsible if you do not receive the form from your broker, custodian bank or nominee or if you receive it without sufficient time to respond.

Guaranteed Delivery Procedures

If you wish to exercise subscription rights, but you do not have sufficient time to deliver the rights certificate evidencing your subscription rights to the subscription agent prior to the expiration of the rights offering, you may exercise your subscription rights by the following guaranteed delivery procedures:

- deliver to the subscription agent prior to the expiration of the rights offering the subscription payment for each share you elected to purchase pursuant to the exercise of subscription rights in the manner set forth above under “ — Payment Method ” ;
- deliver to the subscription agent prior to the expiration of the rights offering the form entitled “ Notice of Guaranteed Delivery ” ; and
- deliver the properly completed rights certificate evidencing your subscription rights to be exercised and the related nominee holder certification, if applicable, with any required signatures guaranteed, to the subscription agent within two (2) business days following the date of the Notice of Guaranteed Delivery.

Your Notice of Guaranteed Delivery must be delivered in substantially the same form provided with the “Form of Instructions for Use of Subscription Rights Certificates,” which will be distributed to you with your rights certificate. Your Notice of Guaranteed Delivery must include a signature guarantee from an eligible institution acceptable to the subscription agent. A form of that guarantee is included with the Notice of Guaranteed Delivery.

In your Notice of Guaranteed Delivery, you must provide:

- your name;
- the number of subscription rights represented by your rights certificate, the number of shares of our common stock for which you are subscribing under your basic subscription privilege, and the number of shares of our common stock for which you are subscribing under your over-subscription privilege, if any; and
- your guarantee that you will deliver to the subscription agent a rights certificate evidencing the subscription rights you are exercising within two (2) business days following the date the subscription agent receives your Notice of Guaranteed Delivery.

You may deliver your Notice of Guaranteed Delivery to the subscription agent in the same manner as your rights certificate at the address set forth above under “—Subscription Agent.”

The information agent will send you additional copies of the form of Notice of Guaranteed Delivery if you need them. You should call D.F. King & Co., Inc., at (866) 796-1290 (toll free) to request additional copies of the form of Notice of Guaranteed Delivery.

Transferability of Subscription Rights

The subscription rights granted to you are non-transferable and, therefore, you may not sell, transfer or assign your subscription rights to anyone. The subscription rights will not be listed for trading on the NASDAQ Capital Market or any stock exchange or market.

Validity of Subscriptions

We will resolve all questions regarding the validity and form of the exercise of your subscription rights, including time of receipt and eligibility to participate in the rights offering. In resolving all such questions, we will review the relevant facts, consult with our legal advisors and we may request input from the relevant parties. Our determination will be final and binding. We reserve the absolute right to reject any subscriptions or directions not properly submitted or the acceptance of which would be unlawful. You must resolve any irregularities in connection with your subscriptions before the subscription period expires, unless waived by us in our sole discretion. Neither we nor the subscription agent shall be under any duty to notify you or your representative of defects in your subscriptions. A subscription will be considered accepted, subject to our right to withdraw or terminate the rights offering, only when a properly completed and duly executed rights certificate and any other required documents and the full subscription payment has been received by the subscription agent. Our interpretations of the terms and conditions of the rights offering will be final and binding.

Escrow Arrangements; Return of Funds

The subscription agent will hold funds received in payment for shares of our common stock in a segregated account pending completion of the rights offering. The subscription agent will hold this money in escrow until the rights offering is completed or is withdrawn and canceled. If the rights offering is withdrawn or canceled for any reason, all subscription payments received by the subscription agent will be promptly returned, without interest. In addition, all subscription payments received by the subscription agent will be promptly returned, without interest, if subscribers decide to cancel their subscription rights in the event that we extend the rights offering for a period of more than 30 days after the expiration date or if there is a fundamental change to the terms of the rights offering.

Stockholder Rights

You will have no rights as a holder of the shares of our common stock you purchase in the rights offering, if any, until certificates (physical, electronic or book-entry form) representing the shares of our common stock are issued to you. You will have no right to revoke your subscriptions after you deliver your completed rights certificate, the full subscription payment and any other required documents to the subscription agent. See “—No Revocation or Change.”

Foreign Stockholders

We will not mail this prospectus or the rights certificates to stockholders whose addresses are outside the United States or who have an army post office or foreign post office address. The subscription agent will hold the rights certificates for their account. To exercise subscription rights, our foreign stockholders must notify the subscription agent prior to 11:00 a.m., New York City time, at least two (2) business days prior to the expiration of the rights offering and demonstrate to the satisfaction of the subscription agent that the exercise of such subscription rights does not violate the laws of the jurisdiction of such stockholder.

No Revocation or Change

Once you submit the form of rights certificate to exercise any subscription rights, you are not allowed to revoke or change the exercise or request a refund of monies paid. All exercises of subscription rights are irrevocable, even if you later learn information that you consider to be unfavorable to the exercise of your subscription rights and even if the rights offering is extended by our board of directors. However, if we amend the rights offering to allow for an extension of the rights offering for a period of more than 30 days or make a fundamental change to the terms of the rights offering set forth in this prospectus, you may cancel your subscription and receive a refund of any money you have advanced. You should not exercise your subscription rights unless you are certain that you wish to purchase additional shares of our common stock at the subscription price.

Regulatory Limitation

We will not be required to issue to you shares of our common stock pursuant to the rights offering if, in our opinion, you are required to obtain prior clearance or approval from any state or federal regulatory authorities to own or control such shares and if, at the time the rights offering expires, you have not obtained such clearance or approval.

U.S. Federal Income Tax Treatment of Rights Distribution

For U.S. federal income tax purposes, you generally should not recognize income or loss in connection with the receipt or exercise of subscription rights unless the rights offering is part of a “disproportionate distribution” within the meaning of applicable tax rules (in which case you may recognize taxable income upon receipt of the subscription rights). We believe that the rights offering should not be part of a disproportionate distribution, but certain aspects of that determination are unclear. This position is not binding on the IRS or the courts, however. You are urged to consult your own tax advisor as to your particular tax consequences resulting from the receipt and exercise of subscription rights and the receipt, ownership and disposition of our common stock. For further information, please see “Material U.S. Federal Income Tax Considerations.”

No Recommendation to Rights Holders

Although our directors may invest their own money in the rights offering, our board of directors is making no recommendation regarding your exercise of the subscription rights. You are urged to make your decision based on your own assessment of our business and the rights offering. Please see “Risk Factors” for a discussion of some of the risks involved in investing in our common stock.

Listing

The subscription rights will not be listed for trading on the NASDAQ Capital Market or any stock exchange or market. The shares of our common stock issuable upon exercise of the subscription rights will trade on the NASDAQ Capital Market under the symbol “HTBX.”

Shares of our Common Stock Outstanding After the Rights Offering

Assuming 12,000,000 shares of our common stock are issued in the rights offering through the exercise of subscription rights, we anticipate that 47,788,912 shares of our common stock will be outstanding following the completion of the rights offering. Assuming our board of directors, in its sole discretion, determines to increase the offering size to subscription rights to purchase up to 15,000,000 shares of our common stock are issued in the rights offering through the exercise of subscription rights, we anticipate that 50,788,912 shares of our common stock will be outstanding following the completion of the rights offering.

Other Matters

We are not making the rights offering in any state or other jurisdiction in which it is unlawful to do so, nor are we distributing or accepting any offers to purchase any shares of our common stock from subscription rights holders who are residents of those states or other jurisdictions or who are otherwise prohibited by federal or state laws or regulations from accepting or exercising the subscription rights. We may delay the commencement of the rights offering in those states or other jurisdictions, or change the terms of the rights offering, in whole or in part, in order to comply with the securities laws or other legal requirements of those states or other jurisdictions. Subject to state securities laws and regulations, we also have the discretion to delay allocation and distribution of any shares you may elect to purchase by exercise of your subscription privileges in order to comply with state securities laws. We may decline to make modifications to the terms of the rights offering requested by those states or other jurisdictions, in which case, if you are a resident in those states or jurisdictions or if you are otherwise prohibited by federal or state laws or regulations from accepting or exercising the subscription rights, you will not be eligible to participate in the rights offering. However, we are not currently aware of any states or jurisdictions that would preclude participation in the rights offering.

MARKET FOR COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Market Information

Our common stock has traded on the NASDAQ Capital Market under the symbol “HTBX” since July 29, 2013. Prior to that time, there was no public market for our common stock. The following table states the range of the high and low sales prices of our common stock for the year ended December 31, 2015, the year ended December 31, 2016, the quarters ended March 31, 2017 and June 30, 2017, and the quarter ending September 30, 2017 to date. These quotations represent inter-dealer prices, without retail mark-up, markdown, or commission, and may not represent actual transactions. The last reported sale price of our common stock as reported on the NASDAQ on October 9, 2017 was \$0.75 per share. As of October 9, 2017, there were approximately 30 stockholders of record of our common stock. This number does not include beneficial owners from whom shares are held by nominees in street name.

	High	Low
YEAR ENDED DECEMBER 31, 2015		
First Quarter	\$ 8.30	\$ 3.99
Second Quarter	\$ 8.35	\$ 5.73
Third quarter	\$ 6.58	\$ 3.42
Fourth quarter	\$ 4.50	\$ 1.84
YEAR ENDED DECEMBER 31, 2016		
First Quarter	\$ 4.32	\$ 0.68
Second Quarter	\$ 0.80	\$ 0.46
Third Quarter	\$ 1.81	\$ 0.66
Fourth Quarter	\$ 3.23	\$ 0.70
YEAR ENDED DECEMBER 31, 2017		
First Quarter	\$ 1.25	\$ 0.71
Second Quarter	\$ 0.90	\$ 0.55
Third Quarter	\$ 0.72	\$ 0.48
Fourth Quarter (through October 9, 2017)	\$ 0.76	\$ 0.64

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock and we do not currently intend to pay any cash dividends on our common stock in the foreseeable future. We expect to retain all available funds and future earnings, if any, to fund the development and growth of our business. Any future determination to pay dividends, if any, on our common stock will be at the discretion of our board of directors and will depend on, among other factors, our results of operations, financial condition, capital requirements and contractual restrictions.

DESCRIPTION OF OUR SECURITIES

General

The following is a summary of the rights of our common stock and outstanding warrant and related provisions of our certificate of incorporation, bylaws and warrants. For more detailed information, please see our certificate of incorporation and bylaws.

We are authorized to issue 100,000,000 shares of common stock, par value \$0.0002 per share, of which 35,788,912 shares are outstanding as of September 13, 2017 and 10,000,000 shares of preferred stock, par value \$0.0001 per share, of which 112,500 shares are designated Series 1 Preferred Stock, 2,000,000 shares are designated Series A Preferred Stock, 4,100,000 are designated as Series B-1 Preferred Stock and 2,000,000 are designated Series B-2 Preferred Stock. There are currently no shares of Preferred Stock outstanding.

Common Stock

The holders of our common stock are entitled to one vote per share on all matters to be voted on by the shareholders. Subject to preferences that may be applicable to any outstanding shares of Preferred Stock, holders of common stock are entitled to receive ratably such dividends as may be declared by the Board out of funds legally available therefore. If we liquidate, dissolve or wind up, holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities and the liquidation preferences of any outstanding shares of Preferred Stock. Holders of common stock have no preemptive, conversion or subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are, and all shares of common stock to be outstanding upon completion of this rights offering will be, fully paid and nonassessable. Except as otherwise required by Delaware law, all stockholder action, other than the election of directors, is taken by the vote of a majority of the outstanding shares of common stock voting as a single class present at a meeting of stockholders at which a quorum consisting of a majority of the outstanding shares of common stock is present in person or proxy. The election of directors by our stockholders, is determined by a plurality of the votes cast by the stockholders entitled to vote at any meeting held for such purposes at which a quorum consisting of a majority of the outstanding shares of common stock is present in person or proxy.

Reverse Stock Splits

At our 2017 Annual Meeting of Stockholders, our stockholders approved an amendment to our certificate of incorporation, as amended, to implement a reverse stock split of our common stock with the ratio to be determined by our board of directors, within a range of one (1) share of common stock for every two (2) to ten (10) shares of common stock. If the board of directors continues to believe that a reverse stock split is in the best interests of our Company and our stockholders, the board will determine the ratio, within the range approved by our stockholders, of the reverse stock split and implement such reverse stock split by filing a certificate of amendment to our certificate of incorporation (the "Certificate of Amendment for Reverse Split") with the Secretary of State of the State of Delaware (the "Reverse Stock Split"). The Reverse Stock Split, if any, will become effective after the filing of the Certificate of Amendment for Reverse Split on the effective date set forth in this certificate.

Preferred Stock

We are authorized to issue 10,000,000 shares of Preferred Stock, par value \$.0001 per share, of which 112,500 shares have been designated Series 1 Preferred Stock, 2,000,000 shares have been designated Series A Preferred Stock, 4,100,000 have been designated as Series B-1 Preferred Stock and 2,000,000 have been designated Series B-2 Preferred Stock. None of such shares of Preferred Stock are outstanding. Any authorized and undesignated shares of preferred stock may be issued from time to time in one or more series pursuant to a resolution or resolutions providing for such issue duly adopted by our Board of Directors (authority to do so being hereby expressly vested in the Board of Directors). The Board of Directors is further authorized, subject to limitations prescribed by law, to fix by resolution or resolutions the designations, powers, preferences and rights, and the qualifications, limitations or restrictions thereof, of any wholly unissued series of preferred stock, including without limitation authority to fix by resolution or resolutions the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions), redemption price or prices, and liquidation preferences of any such series, and the number of shares constituting any such series and the designation thereof, or any of the foregoing.

Outstanding Common Stock Warrants

On March 10, 2011, we issued warrants to purchase 32,610 shares of common stock to non-employee placement agents in consideration for a private equity placement transaction, of which 17,392 warrants remain outstanding as of June 30, 2017. The warrants have an exercise price of \$0.48 per share and expire 10 years from the issuance date.

In connection with our initial public offering, we issued warrants to the underwriters for 125,000 shares of common stock issuable at \$12.50 per share upon exercise. The warrants have a five-year life and expire on July 23, 2018. In addition, the warrants provide for registration rights upon request, in certain cases. The holders of the warrants were granted demand registration rights for a period of five years from the effective date of the offering and piggyback registration rights for a period of seven years from the effective date of the offering. The exercise price and number of shares issuable upon exercise of the warrants may be adjusted in certain circumstances including in the event of a stock dividend or our recapitalization, reorganization, merger or consolidation. However, the warrant exercise price or underlying shares will not be adjusted for issuances of shares of common stock at a price below the warrant exercise price.

In connection with our March 2016 public offering, we issued warrants to purchase 6,825,000 shares of our common stock, at an exercise price of \$1.00 per share. The warrants have a five-year life and expire after March 22, 2021.

Stock Option Plans

Under the 2017 Plan we are authorized to grant 5,000,000 awards in the form of options, restricted stock, restricted stock units and other stock based awards. Under the 2014 Plan we are authorized to grant 500,000 awards in the form of options, restricted stock, restricted stock units and other stock based awards. Under the 2009 Plan under which we are authorized to grant 869,565 awards in the form of options, restricted stock, restricted stock units and other stock based awards. As of June 30, 2017: (1) 3,424,836 awards had been granted under the 2014 Plan, of which 143,832 were exercised, and 706,375 were canceled and there were 281,539 shares of common stock available for grant under the 2014 Plan, and (2) 960,176 awards had been granted under the 2009 Plan, of which 288,625 were exercised, and 423,555 were canceled and there were 332,944 shares of common stock available for grant under the 2009 Plan. No awards have been granted under the 2017 Plan.

Potential Anti-Takeover Effects

Certain provisions set forth in our Third Amended and Restated Certificate of Incorporation, as amended, in our bylaws and in Delaware law, which are summarized below, may be deemed to have an anti-takeover effect and may delay, deter or prevent a tender offer or takeover attempt that a stockholder might consider to be in its best interests, including attempts that might result in a premium being paid over the market price for the shares held by stockholders.

Blank Check Preferred Stock . Our certificate of incorporation and bylaws contain provisions that permit us to issue, without any further vote or action by the stockholders, up to 10,000,000 shares of preferred stock in one or more series and, with respect to each such series, to fix the number of shares constituting the series and the designation of the series, the voting powers, if any, of the shares of the series, and the preferences and relative, participating, optional and other special rights, if any, and any qualifications, limitations or restrictions, of the shares of such series.

Special Meetings of Stockholders . Our bylaws provide that special meetings of stockholders may be called only by the chairman or by our board. Stockholders are not permitted to call a special meeting of stockholders, to require that the board call such a special meeting, or to require that our board request the calling of a special meeting of stockholders.

While the foregoing provisions of our certificate of incorporation, bylaws and Delaware law may have an anti-takeover effect, these provisions are intended to enhance the likelihood of continuity and stability in the composition of the Board of directors and in the policies formulated by the Board of directors and to discourage certain types of transactions that may involve an actual or threatened change of control. In that regard, these provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and, as a consequence, they also may inhibit fluctuations in the market price of our common stock that could result from actual or rumored takeover attempts. Such provisions also may have the effect of preventing changes in our management.

Delaware Takeover Statute

In general, Section 203 of the Delaware General Corporation Law prohibits a Delaware corporation that is a public company from engaging in any “business combination” (as defined below) with any “interested stockholder” (defined generally as an entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with such entity or person) for a period of three years following the date that such stockholder became an interested stockholder, unless: (1) prior to such date, the Board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder; (2) on consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding those shares owned (x) by persons who are directors and also officers and (y) by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or (3) on or subsequent to such date, the business combination is approved by the Board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 of the Delaware General Corporation Law defines “business combination” to include: (1) any merger or consolidation involving the corporation and the interested stockholder; (2) any sale, transfer, pledge or other disposition of ten percent or more of the assets of the corporation involving the interested stockholder; (3) subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder; (4) any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or (5) the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

Listing of Common Stock

Our common stock is currently listed on the NASDAQ Capital Market under the trading symbol “HTBX.”

Transfer Agent

The transfer agent and registrar for our common stock is Continental Stock Transfer & Trust Company. They are located at 1 State Street, 30th floor, New York, New York 10004. Their telephone number is (212) 509-4000.

DESCRIPTION OF SUBSCRIPTION RIGHTS

The Subscription Rights

We are distributing, at no charge, to holders of our common stock and holders of our warrants non-transferrable subscription rights to purchase one share of our common stock for each share of common stock owned at, and each share of common stock into which the warrants held by them were exercisable at, 5:00 p.m., New York City time, on October 13, 2017; provided, that, the rights may only be exercised for a maximum of 12,000,000 shares of common stock, subject to proration. If the aggregate number of shares of common stock for which subscription rights are exercised exceeds 12,000,000 shares, our board of directors, in its sole discretion, will have the right, but no obligation, to increase the size of the offering to subscription rights to purchase up to an aggregate 15,000,000 shares.

Each subscription right will entitle the holder to a basic subscription privilege and an over-subscription privilege, which are described below.

Basic Subscription Privilege

With your basic subscription privilege, you may purchase one share of our common stock per subscription right, upon delivery of the required documents and payment of the subscription price of \$ _____ per share, prior to the expiration of the rights offering. You may exercise all or a portion of your basic subscription privilege. However, if you exercise less than your full basic subscription privilege, you will not be entitled to purchase shares pursuant to your over-subscription privilege.

If the basic subscription rights are exercised for an amount in excess of 12,000,000 shares of common stock (or in excess of 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), the basic subscription rights that have been exercised will be reduced on a pro-rata basis, subject to adjustment to eliminate fractional shares, so that the total number of shares issued upon exercise of subscription rights equal 12,000,000 shares (or in excess of 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), and any excess subscription amount received by the subscription agent will be promptly returned, without interest, after the rights offering has expired and all prorating calculations and reductions contemplated by the terms of the rights offering have been effected.

Basic subscription rights may only be exercised for whole numbers of shares of our common stock; no fractional shares of common stock will be issued in this rights offering. If the basic subscription rights are exercised for an amount in excess of 12,000,000 shares of common stock (or 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), the number of shares of common stock each subscription rights holder may acquire will be rounded down to result in delivery of whole shares.

We will deliver certificates (physical, electronic or book-entry form) representing shares of our common stock purchased with the basic subscription privilege as soon as practicable after the rights offering has expired.

Over-Subscription Privilege

If you fully exercise your basic subscription privilege and basic subscription rights are exercised for an amount less than 12,000,000 shares of common stock (or 15,000,000 shares of common stock if our board of directors, in its sole discretion, determines to increase the offering size), you may also exercise an over-subscription privilege to purchase additional shares of common stock that remain unsubscribed at the expiration of the rights offering, subject to the availability and *pro rata* allocation of shares among stockholders exercising this over-subscription privilege. To the extent the number of the unsubscribed shares are not sufficient to satisfy all of the properly exercised over-subscription privileges requests, then the available shares will be prorated among those who properly exercised over-subscription privileges based on the number of shares each rights holder subscribed for under the basic subscription right. If this *pro rata* allocation results in any stockholder receiving a greater number of shares of common stock than the stockholder subscribed for pursuant to the exercise of the over-subscription privilege, then such stockholder will be allocated only that number of shares for which the stockholder oversubscribed, and the remaining shares of common stock will be allocated among all other stockholders exercising the over-subscription privilege on the same *pro rata* basis described above. The proration process will be repeated until all shares of common stock have been allocated or all over-subscription exercises have been fulfilled, whichever occurs earlier.

In order to properly exercise your over-subscription privilege, you must deliver the subscription payment related to your over-subscription privilege prior to the expiration of the rights offering. Because we will not know the total number of unsubscribed shares prior to the expiration of the rights offering, if you wish to maximize the number of shares you purchase pursuant to your over-subscription privilege, you will need to deliver payment in an amount equal to the aggregate subscription price for the maximum number of shares of our common stock available to you, assuming that no stockholder other than you has purchased any shares of our common stock pursuant to their basic subscription privilege and over-subscription privilege.

We can provide no assurances that you will actually be entitled to purchase the number of shares issuable upon the exercise of your over-subscription privilege in full at the expiration of the rights offering. We will not be able to satisfy your exercise of the over-subscription privilege if all of our stockholders exercise their basic subscription privileges in full, and we will only honor an over-subscription privilege to the extent sufficient shares of our common stock are available following the exercise of subscription rights under the basic subscription privileges.

- To the extent the aggregate subscription price of the maximum number of unsubscribed shares available to you pursuant to the over-subscription privilege is less than the amount you actually paid in connection with the exercise of the over-subscription privilege, you will be allocated only the number of unsubscribed shares available to you, and any excess subscription payments received by the subscription agent will be promptly returned, without interest.
- To the extent the stockholders properly exercise their over-subscription privileges for an aggregate amount of shares that is less than the number of the unsubscribed shares, you will be allocated the number of unsubscribed shares for which you actually paid in connection with the over-subscription privilege.

Fractional shares of our common stock resulting from the exercise of the over-subscription privilege will be eliminated by rounding down to the nearest whole share, with the total subscription payment being adjusted accordingly. Any excess subscription payments received by the subscription agent will be promptly returned, without interest.

We will deliver certificates (physical, electronic or book-entry form) representing shares of our common stock purchased with the basic subscription privilege as soon as practicable after the rights offering has expired.

Subscription Price

In determining the subscription price of \$ _____ per share, our board of directors considered a number of factors, including: the likely cost of capital from other sources, the price at which our stockholders might be willing to participate in the rights offering, historical and current trading prices of our common stock, our need for liquidity and capital and the desire to provide an opportunity to our stockholders to participate in the rights offering on a *pro rata* basis. In conjunction with its review of these factors, our board of directors also reviewed a range of discounts to market value represented by the subscription prices in various prior rights offerings of public companies. See “Risk Factors—Risks Related to this Rights Offering—The subscription price determined for the rights offering is not necessarily an indication of the value of our common stock.”

Limitation on Exercise of Basic Subscription Privilege and Over-Subscription Privilege

Unless we otherwise agree in writing, a person or entity, together with related persons or entities, may not exercise subscription rights (including over-subscription privileges) to purchase shares of our common stock that, when aggregated with their existing ownership, would result in such person or entity, together with any related persons or entities, owning in excess of twenty percent (20%) of our issued and outstanding shares of common stock following the closing of the transactions contemplated by this rights offering.

In the event that the exercise by a holder of the basic subscription privilege or the over-subscription privilege could, as determined by us in our sole discretion, potentially result in a limitation on our ability to use net operating losses, tax credits and other tax attributes, which we refer to as the “Tax Attributes,” under the Internal Revenue Code of 1986, as amended, which we refer to as the “Code”, and rules promulgated by the Internal Revenue Service (the “IRS”), we may, but are under no obligation to, reduce the exercise by such stockholder of the basic subscription privilege or the over-subscription privilege to such number of shares of common stock as we, in our sole discretion, shall determine to be advisable in order to preserve our ability to use the Tax Attributes.

Distribution Arrangements

RHK Capital, which is a broker-dealer and member of FINRA, will act as dealer-manager for the rights offering. The principal business address of the dealer-manager is 276 Post Road West, Westport, Connecticut 06880.

Under the terms and subject to the conditions contained in a dealer-manager agreement, RHK Capital will provide marketing assistance and advice to our company in connection with the rights offering and will solicit the exercise of rights and participation in the over-subscription privilege. This rights offering is not contingent upon any number of rights being exercised. In addition, RHK Capital is acting as the placement agent for any unsubscribed shares of our common stock.

Under the terms and subject to the conditions contained in the dealer-manager agreement, we have agreed to pay RHK Capital a cash fee of 6.0% of the gross proceeds of this offering, a non-accountable expense allowance of 1.8% of the gross proceeds of this rights offering, and an out-of-pocket accountable expense allowance of 0.2%. RHK Capital has informed us that it will re-allow 4.0% of its dealer-manager fee to each broker-dealer whose clients purchase shares of common stock in this offering pursuant to the exercise of their subscription rights. We have agreed to indemnify RHK Capital and its affiliates against, or contribute to losses arising out of, certain liabilities arising under the Securities Act. RHK Capital’s participation in this offering is subject to customary conditions contained in the dealer-manager agreement. The dealer-manager agreement also provides that the dealer-manager will not be subject to any liability to us in rendering the services contemplated by the dealer-manager agreement except for any act of bad faith or gross negligence of the dealer-manager. RHK Capital and its affiliates may provide to us from time to time in the future in the ordinary course of their business certain financial advisory, investment banking and other services for which they will be entitled to receive customary fees. RHK Capital does not make any recommendation with respect to whether you should exercise the basic subscription or over subscription rights or to otherwise invest in our company. See “Plan of Distribution.”

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS

This following discussion addresses material U.S. federal income tax considerations relating to (i) the receipt and exercise (or expiration) of the subscription rights as contemplated throughout this rights offering, and (ii), if applicable in connection with the exercise of the basic subscription privilege or, if applicable, the over-subscription privilege, the acquisition, ownership and sale of shares of our stock and, insofar as it relates to matters of U.S. federal income tax law and regulations or legal conclusions with respect thereto, constitutes the opinion of our tax counsel, Seligson & Giannattasio, LLP. This discussion addresses only the treatment to a Shareholder (defined below), that is a U.S. holder (defined below), and who receives subscription rights pursuant to this rights offering, or holds shares of our stock issued upon the exercise of the basic subscription privilege or, if applicable, the over-subscription privilege, in each instance as capital assets within the meaning of Code Section 1221. This discussion does not provide a complete or comprehensive analysis of all potential tax considerations. The information provide herein is based on existing United States federal income tax authorities, including but not limited to, the Code, the Treasury Regulations promulgated thereunder, legislative history, judicial authority and published rulings, any of which may subsequently change, possibly retroactively, or interpreted differently by the IRS, so as to result in U.S. federal income tax consequences different from those discussed throughout this rights offering. This discussion neither binds nor precludes the IRS from adopting a position contrary to, or otherwise challenging, the positions addressed in this prospectus, and we cannot assure you that such a contrary position could not be asserted successfully by the IRS or adopted by a court if the position or matter was litigated. We have not sought, and will not seek a ruling from the IRS regarding the tax considerations discussed herein. Additionally, this discussion does not address any tax consequences under foreign, state, or local tax laws, nor does it address the effects of the U.S. federal estate or gift tax laws.

This discussion does not purport to deal with all aspects of U.S. federal income taxation that may be relevant to a particular beneficial owner in light of such beneficial owner's circumstances. For example, this discussion does not apply to you if you are not a U.S. holder or if you are a member of a special class of holders subject to special rules, including, without limitation, financial institutions, banks, regulated investment companies, real estate investment trusts, dealers in securities or foreign currency, traders in securities that elect to use a mark-to-market method of accounting for securities holdings, tax-exempt organizations or entities, tax-deferred or other retirement accounts, insurance companies, persons liable for alternative minimum tax, holders who hold stock as part of a hedge, straddle, conversion, constructive sale or other integrated security transaction, holders whose functional currency is not the U.S. dollar, certain former citizens or residents of the U.S., and holders who received our stock on which the subscription rights are distributed in satisfaction of our indebtedness.

As used throughout this discussion, a "U.S. holder" means a beneficial owner of subscription rights, or stock acquired pursuant to the exercise of the basic subscription privilege or, if applicable, the over-subscription privilege, that is:

- An individual who is a citizen or resident of the United States, including an alien individual who either is a lawful permanent resident of the United States or meets the substantial presence test under Code Section 7701(b);
- A corporation (or entity treated as a corporation for U.S. federal income tax purposes) created or organized, or treated as created or organized, in or under the laws of the United States, any state thereof or the District of Columbia;
- An estate whose income is subject to U.S. federal income tax regardless of its source; or
- A trust (i) if a U.S. court can exercise primary supervision over the trust's administration and one or more U.S. persons are authorized to control all substantial decisions of the trust, or (ii) that has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

In addition, as used throughout this discussion, the phrase "Securities," means both (i) shares of our common stock, and (ii) rights or warrants to acquire shares of our common stock; and the term "Shareholder," means a U.S. holder who is either (i) a holder of shares of our common stock, or (ii) a holder of rights or warrants to acquire shares of our common stock. As such, this discussion addresses the receipt of the subscription rights contemplated in this offering by current holders of shares of our common stock and current holders of our warrants.

If a partnership (including any entity treated as a partnership for U.S. federal income tax purposes) receives the subscription rights or holds the stock received upon exercise of the basic subscription privilege or, if applicable, the over-subscription privilege, the tax treatment of a partner in such partnership generally will depend upon the status of the partner and the activities of the partnership. Such a partner and the partnership are urged to consult their own tax advisors as to the U.S. federal income tax consequences of receiving the subscription rights, exercising (or allowing to expire) the basic subscription privilege or, if applicable, the over-subscription privilege, and acquiring, holding or disposing of our shares of stock.

EACH U.S. HOLDER OF SUBSCRIPTION RIGHTS AND, IF APPLICABLE, OUR STOCK, IS STRONGLY URGED TO CONSULT SUCH HOLDER'S OWN TAX ADVISOR REGARDING THE SPECIFIC FEDERAL, STATE, LOCAL AND FOREIGN INCOME AND OTHER TAX CONSIDERATIONS OF THE RECEIPT AND EXERCISE OF SUBSCRIPTION RIGHTS AND THE RECEIPT, OWNERSHIP AND DISPOSITION OF OUR STOCK.

Receipt of Subscription Rights Assuming the Rights Offering is Considered Non-Taxable

Receipt of the Subscription Rights

The distribution of subscription rights to a Shareholder with respect to such Shareholder's Securities is generally treated, for U.S. federal income tax purposes, as a non-taxable distribution. The remainder of this section entitled "*— Receipt of Subscription Rights Assuming the Rights Offering is Considered Non-Taxable*" assumes that the receipt by a Shareholder of subscription rights with respect to such Shareholder's Securities pursuant to this rights offering is non-taxable for U.S. federal income tax purposes. However, this conclusion is not free from doubt, and it is possible that the IRS may take a contrary view.

If, by way of example only, receipt by a Shareholder of subscription rights is part of a "disproportionate distribution," then such receipt would be treated as a taxable distribution to such Shareholder in an amount equal to fair market value of the subscription rights received. In such a case, the treatment discussed below under the section entitled "*— Receipt of Subscription Rights if the Rights Offering Is Considered Taxable*" would be applicable.

Tax Basis in the Subscription Rights

If the fair market value of the subscription rights received by a Shareholder is less than 15% of the fair market value of such Shareholder's Securities as of the date the subscription rights are distributed, then such holder's subscription rights will be allocated a zero tax basis for U.S. federal income tax purposes. However, in such a case, such Shareholder may affirmatively elect to allocate a portion of such holder's tax basis in such holder's existing Securities between (i) such holder's Securities and (ii) such holder's subscription rights received pursuant to this offering, in proportion to the relative fair market values of such existing Securities and subscription rights determined as of the date of the receipt of the subscription rights. If a Shareholder chooses to make such an election, then such holder must make this election on a statement included with such holder's tax return for the taxable year in which such holder receives subscription rights pursuant to this offering. Such an election, if made, is irrevocable.

If the fair market value of the subscription rights received by a Shareholder is 15% or more of the fair market value of such holder's Securities as of the date the subscription rights are distributed, then such holder must allocate such holder's tax basis in such holder's existing Securities between (i) such holder's shares of Securities, and (ii) such holder's subscription rights received pursuant to this offering, in proportion to the relative fair market values of such existing Securities and subscription rights determined as of the date of the distribution of the subscription rights.

The fair market value of the subscription rights on the date the subscription rights are received is uncertain, and we have not obtained, and do not intend to obtain, an appraisal of the fair market value of the subscription rights as of that date. Fair market value is defined generally as the price at which property would hypothetically change hands between a willing buyer and a willing seller, where neither is under any compulsion to buy or sell. Fair market value is a factual determination. In determining the fair market value of the subscription rights, you should consider all relevant facts and circumstances, including but not limited to any difference between the subscription price of the subscription rights and the trading price of our common stock on the date that the subscription rights are distributed or received, the length of the time period during which the subscription rights may be exercised, the fact that the subscription rights are non-transferable, and any other relevant facts and circumstances.

Exercise of the Subscription Rights

A Shareholder will not recognize any gain or loss upon the exercise of subscription rights received pursuant to this rights offering. A Shareholder's tax basis of shares of our common stock acquired through the exercise of such subscription rights will equal the sum of (i) the subscription price paid for the shares, *plus* (ii) the tax basis, if any, in the subscription rights immediately prior to such exercise. The holding period for shares of our common stock acquired through the exercise of such subscription rights will begin on the date the subscription rights are exercised.

Expiration of the Subscription Rights

A Shareholder who allows subscription rights received pursuant to this rights offering to expire generally will not recognize any gain or loss upon such expiration. If, in connection with the receipt of subscription rights pursuant to this offering, a Shareholder, by election or otherwise, allocated a portion of the tax basis in such holder's then existing Securities to such holder's subscription rights, then upon the expiration of such subscription rights, the portion of the tax basis previously allocated to the subscription rights will be re-allocated, or re-attributed, to such holder's Securities, and the tax basis of such Securities will be restored to what it was immediately before the receipt of the subscription rights in this offering.

Receipt of Subscription Rights if the Rights Offering is Considered Taxable

Receipt of Subscription Rights

In general, receipt by a Shareholder of subscription rights to acquire shares of our common stock generally will be taxable if the distribution or issuance (alone or as part of a series of distributions or issuances, including deemed distributions and issuances) either (i) has the result of the receipt of cash or property by some Shareholders, and an increase in the proportionate interests, of other Shareholders, in the assets or earnings and profits of the Company (*i.e.*, a disproportionate distribution, as contemplated in Code Section 305(b)(2)), or (ii) is, at the election of any of the Shareholders, payable either in cash or property in lieu of the rights to acquire additional shares (*i.e.*, a distribution in lieu of money, as contemplated in Code Section 305(b)(1)). As previously indicated, for these purposes, the term "Securities," means shares of our common stock and rights or warrants to acquire shares of our common stock.

With respect Shareholders who are holders of our warrants, depending on the circumstances, adjustments and changes respecting subscription rights, or the receipt of additional subscription rights pursuant to this offering, may be treated as a constructive distribution if, and to the extent that, such adjustment, change or receipt has the effect of increasing such Shareholder's proportionate interest in our earnings and profits or assets. However, in general, any such adjustment, change or receipt respecting currently outstanding warrants, which adjustment, change or receipt is made or occurs pursuant to a bona fide reasonable adjustment formula that has the effect of preventing dilution of the interest of the holders of currently outstanding warrants should generally not result in a constructive distribution. The application of these rules to Shareholders, and, in particular, to Shareholders who hold warrants to acquire shares of our common stock, are complex and subject to uncertainty.

During the last 36 months, we have not made any distributions of cash or other property with respect to our stock, nor do we have any current intention of making any distributions with respect to our stock. Currently, our common stock is our sole outstanding class of stock, and we have no current intention of issuing another class of stock or convertible debt. However, the fact that we have outstanding options, warrants and similar equity-based awards could cause, under certain circumstances that cannot currently be predicted, the receipt of subscription rights pursuant to this offering to be part of a disproportionate distribution, as contemplated in Code Section 305(b)(2). The Company intends to take the position that the outstanding options, warrants and similar equity-based awards do not cause the subscription rights issued pursuant to this rights offering to be part of a disproportionate distribution, in which case the Company believes the discussion set forth in “— *Receipt of Subscription Rights Assuming the Rights Offering is Considered Non-Taxable*, ” is applicable to all Shareholders.

If, contrary to the Company’s position, the distribution or issuance to a Shareholder pursuant to this offering of subscription rights is considered part of a disproportionate distribution (or part of a distribution in lieu of money), then such distribution would generally be treated as taxable. With respect to U.S. holders of shares of our common stock, in general, a taxable distribution is treated as a dividend to the extent that the fair market value of the subscription rights distributed is allocable to our current and accumulated earnings and profits for the taxable year in which the subscription rights are distributed. Dividends received by corporate U.S. holders are taxable at ordinary corporate income tax rates, subject to any applicable dividends-received deduction. Subject to the discussion below respecting the additional Medicare tax (see, “— *Net Investment Income Tax* ”), qualified dividends received by non-corporate U.S. holders are taxable at a maximum rate of 20%, provided the holder meets applicable holding requirements. Assuming, for these purposes, the distribution pursuant to this offering of subscription rights is treated as a taxable distribution, we expect, but cannot determine with certainty prior to the consummation of the rights offering, that the Company will not have current and accumulative earnings and profits so as to cause the distribution contemplated in this rights offering to be treated as a taxable dividend to a U.S. holder of shares of our common stock. Any distributions to a U.S. holder of shares of our common stock in excess of the Company’s current and accumulated earnings and profits will be treated as a tax-free return of such holder’s basis in our common stock, and any further distributions in excess of such holder’s basis in our common stock will be treated as gain from the sale or exchange of such common stock. With respect to U.S. holders of rights or warrants to acquire shares of our common stock, in general, the receipt of subscription rights which receipt is considered part of disproportionate distribution (or part of a distribution in lieu of money), would be taxable to such holder, and may be taxable to such holder at graduated ordinary income tax rates.

The remainder of the discussion in this section entitled, “— *Receipt of Subscription Rights Assuming the Rights Offering is Considered Taxable* ,” assumes that the receipt of subscription rights pursuant to this offering is considered part of a disproportionate distribution, and generally taxable to the receiving Shareholder.

Tax Basis in the Subscription Rights

If the receipt of subscription rights pursuant to this offering is taxable to the receiving Shareholder, then regardless of whether the receipt of subscription rights is treated as a dividend, as a tax-free return of basis, as gain from the sale or exchange of our common stock, or otherwise, a Shareholder’s tax basis in the subscription rights received will be equal to the fair market value of such subscription rights.

Exercise of the Subscription Rights

If, the receipt of subscription rights pursuant to this offering is treated as taxable to the receiving Shareholder, then such Shareholder will not recognize any gain or loss upon the exercise of such subscription rights. In such a case, a Shareholder’s tax basis of shares of our common stock acquired through the exercise of such subscription rights will equal the sum of (i) the subscription price paid for the shares of our common stock, *plus* (ii) the tax basis, if any, in the subscription rights immediately prior to such exercise. The holding period for shares of our common stock acquired through the exercise of the subscription rights will begin on the date the subscription rights are exercised.

Expiration of the Subscription Rights

If the receipt of subscription rights pursuant to this offering is taxable, and a Shareholder allows the subscription rights received in this offering to expire, then such Shareholder should recognize a short-term capital loss equal to such Shareholder's tax basis in the expired subscription rights. A Shareholder's ability to use any capital loss may be subject to limitations.

Net Investment Income Tax

In addition to the United States federal income tax, discussed above, certain Shareholders are subject to an additional 3.8% Medicare tax (the "net investment income tax") on their "net investment income" to the extent that their net investment income, when added to their other modified adjusted gross income, exceeds certain thresholds (e.g., \$250,000 for married individuals filing jointly). For these purposes, "net investment income" generally equals the taxpayer's gross investment income (e.g., interest income, dividends and gain from the sale or other disposition of stock) reduced by deductions that are allocable to such income. The net investment income tax is determined in a manner which is different than the manner in which the U.S. federal income tax is determined. Shareholders are urged to consult their own tax advisors regarding the implications of the net investment income tax.

Ownership and Disposition of Shares of Our Common Stock

Distributions and Dividends

Distributions, if any, of cash or property on shares of our common stock acquired through the exercise of subscription rights will be taxable to a U.S. holder as a dividend to the extent such distribution is paid from our current and accumulated earnings and profits, as determined under U.S. federal income tax principles for the year in which the distribution is made. Dividends received by corporate U.S. holders are taxable at ordinary corporate income tax rates, subject to any applicable dividends-received deduction. Subject to the discussion below respecting the additional Medicare tax (see, "*— Net Investment Income Tax*"), qualified dividends received by non-corporate U.S. holders are taxable at a maximum rate of 20%, provided the holder meets applicable holding requirements. Any distributions in excess of the Company's current and accumulated earnings and profits will be treated as a tax-free return of a U.S. holder's basis in our common stock, and any further distributions in excess of a U.S. holder's basis in our common stock will be treated as gain from the sale or exchange of such common stock.

Sale or Other Taxable Disposition

Upon the sale or other taxable disposition of shares of our common stock, a U.S. holder will generally recognize capital gain or loss equal to the difference between (i) the amount realized by such U.S. holder in connection with such sale or other taxable disposition, and (ii) such U.S. holder's adjusted tax basis in such stock. Such capital gain or loss will generally be long-term capital gain or loss if the U.S. holder's holding period respecting such stock is more than twelve months. U.S. holders who are individuals are eligible for preferential rates of taxation respecting their long-term capital gains. For example, long-term capital gains recognized by individuals are taxable at a maximum rate of twenty percent (20%), in addition to the additional Medicare tax (see , "*—Net Investment Income Tax*), if applicable. A U.S. holder's ability to use a capital loss may be subject to limitations.

Net Investment Income Tax

In addition to the United States federal income tax, discussed above, certain U.S. holders are subject to an additional 3.8% Medicare tax (the "net investment income tax") on their "net investment income" to the extent that their net investment income, when added to their other modified adjusted gross income, exceeds certain thresholds (e.g., \$250,000 for married individuals filing jointly). For these purposes, "net investment income" generally equals a U.S. Holder's gross investment income (e.g., interest income, dividends and gain from the sale or other disposition of stock) reduced by deductions that are allocable to such income. The net investment income tax is determined in a manner which is different than the manner in which the U.S. federal income tax is determined. U.S. holders are urged to consult their own tax advisors regarding the implications of the net investment income tax.

Information Reporting and Backup Withholding

U.S. backup withholding (currently at a rate of 28%) is imposed upon certain distributions (or deemed distributions or similar transactions such as the issuance of subscription rights to a holder of warrants) to persons who fail (or are unable) to furnish the information required pursuant to U.S. information reporting requirements. Distributions (or deemed distributions or similar transactions) to a Shareholder will generally be exempt from backup withholding, provided the Shareholder meets applicable certification requirements, including (i) providing the Company with such holder's U.S. taxpayer identification number (*e.g.*, an individual's social security number or individual taxpayer identification number, or an entity's employer identification number, each a "TIN") or (ii) otherwise establishing an exemption (*e.g.*, an exemption from backup withholding as a corporate payee), in each instance on a properly filled out IRS Form W-9, certifying under penalties of perjury that, among others, such TIN or exemption is correct, together with such other certifications as may be required by law.

Backup withholding does not represent an additional tax. Any amounts withheld from a payment to a U.S. holder under the backup withholding rules will generally be allowed as a credit against such U.S. holder's U.S. federal income tax liability, and may entitle such U.S. holder to a refund, provided the required information and returns are timely furnished by such U.S. holder to the IRS.

AS INDICATED ABOVE, THE FOREGOING DISCUSSION IS FOR GENERAL INFORMATION PURPOSES ONLY AND SHOULD NOT BE VIEWED AS COMPLETE OR COMPREHENSIVE TAX ADVICE. BOTH (I) U.S. HOLDERS RECEIVING A DISTRIBUTION OF STOCK RIGHTS CONTEMPLATED IN THIS OFFERING, AND (II) U.S. HOLDERS CONSIDERING THE PURCHASE OF OUR COMMON STOCK BY EXERCISING SUCH STOCK RIGHTS, ARE URGED TO CONSULT THEIR OWN TAX ADVISORS REGARDING THE APPLICATION OF THE U.S. FEDERAL TAX LAWS TO THEIR PARTICULAR SITUATIONS AND THE APPLICABILITY AND EFFECT OF STATE, LOCAL AND FOREIGN LAWS TO THEM.

PLAN OF DISTRIBUTION

Introduction

As soon as practicable after the record date for the rights offering, we will distribute the subscription rights and rights certificates to individuals who owned shares of our common stock and warrants to purchase shares of common stock at 5:00 p.m., New York City time, on October 13, 2017. If you wish to exercise your subscription rights and purchase shares of our common stock, you should complete the rights certificate and return it with payment for the shares to the subscription agent, Continental Stock Transfer & Trust Company at the following address:

Continental Stock Transfer & Trust Company
Attn: Corporate Actions Department
1 State Street, 30th Floor
New York, New York 10004

See “The Rights Offering—Method of Exercising Subscription Rights.” If you have any questions, you should contact the information agent, D.F. King & Co., Inc. at (866) 796-1290 (toll free) or htbx@dfking.com.

Dealer-Manager

RHK Capital, which is a broker-dealer and member of the Financial Industry Regulatory Authority, will act as the dealer-manager for the rights offering. RHK Capital’s principal business address is 276 Post Road West, Westport, Connecticut 06880. Under the terms and subject to the conditions contained in a dealer-manager agreement, RHK Capital will provide marketing assistance and advice to our company in connection with the rights offering and will solicit the exercise of rights and participation in the over-subscription privilege. This rights offering is not contingent upon any number of rights being exercised. In addition, RHK Capital is acting as placement agent for any unsubscribed shares of our common stock.

Under the terms and subject to the conditions contained in the dealer-manager agreement, we have agreed to pay RHK Capital a cash fee of 6.0% of the gross proceeds of this offering in cash, a non-accountable expense allowance up to 1.8% of the gross proceeds of this offering, and an out-of-pocket accountable expense allowance of 0.2% of the gross proceeds of this offering. We have also agreed to indemnify RHK Capital and its affiliates against, or contribute to losses arising out of, certain liabilities arising under the Securities Act. For any unsubscribed shares of our common stock placed by RHK Capital after the expiration of the rights offering, we have agreed to pay RHK Capital a placement fee equal to 6.0% of such sales, in lieu of the dealer-manager fee, together with a continuing 1.8% non-accountable expense fee and an out-of-pocket accountable expense allowance of 0.2%, with such placement fee and expenses to be calculated in respect of the total gross proceeds paid to and received by us for subscriptions accepted by us from investors in connection with such placement and such placement fee and expenses not to exceed the aggregate amounts that would have been otherwise received by RHK Capital if the rights offering were to have been fully subscribed. Neither the placement fee nor expense allowance in connection with the placement will be payable with respect to any shares of our common stock purchased as result of the exercise of any basic subscription privilege or over-subscription privilege in the rights offering. The dealer-manager agreement also provides that the dealer-manager will not be subject to any liability to us in rendering the services contemplated by the dealer-manager agreement except for any act of bad faith or gross negligence of the dealer-manager.

The dealer-manager and its affiliates may provide to us from time to time in the future in the ordinary course of their business certain financial advisory, investment banking and other services for which they will be entitled to receive customary fees. The dealer-manager does not make any recommendation with respect to whether you should exercise the basic subscription or over subscription rights or to otherwise invest in our company.

The dealer-manager has informed us that it has entered into or intends to enter into Selected Dealer Agreements with other broker-dealers pursuant to which (i) such other broker-dealers have agreed or will agree to use their commercially reasonable efforts to procure subscriptions for the shares of common stock, and (ii) the dealer-manager has agreed or will agree to re-allow 4.0% of its dealer-manager fee to each such broker-dealer whose clients purchase shares of common stock in this offering pursuant to their subscription rights.

The maximum commission to be received by any independent broker-dealer or any member of FINRA will not be greater than 8% of the proceeds from the sale of shares of common stock offered pursuant to this prospectus.

Other than as described herein, we do not know of any existing agreements between or among any stockholder, broker, dealer, underwriter or agent relating to the sale or distribution of the underlying shares of common stock.

Electronic Distribution

This prospectus may be made available in electronic format on websites or via email or through other online services maintained by the dealer-manager. Other than this prospectus in electronic format, the information on the dealer-manager's websites and any information contained in any other websites maintained by the dealer-manager is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or the dealer-manager, and should not be relied upon by investors.

The foregoing does not purport to be a complete statement of the terms and conditions of the dealer-manager agreement. A copy of the dealer-manager agreement is included as an exhibit to the registration statement of which this prospectus forms a part. See "Where You Can Find Additional Information."

Regulation M Restrictions

The dealer-manager may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any fees received by it might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, the dealer-manager would be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of any purchases and sales of securities by the dealer-manager acting as a principal. Under these rules and regulations, the dealer-manager must not engage in any stabilization activity in connection with our securities, and must not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act.

Price Stabilization, Short Positions

No person has been authorized by our company to engage in any form of price stabilization in connection with this rights offering.

Management Purchases

We expect one or more of our directors and executive officers to purchase shares of common stock in the offering at the public offering price, although none have any commitment to do so. Any such purchases could result in one or more of them owning a significant interest in the shares of our common stock.

LEGAL MATTERS

The validity of the rights and the shares of common stock offered by this prospectus is being passed upon for us by Gracin & Marlow, LLP, New York, New York. Certain tax matters were passed upon for us by Seligson & Giannattasio, LLP. Certain legal matters were passed upon for the dealer-manager by Olshan Frome Wolosky LLP, New York, New York.

EXPERTS

The consolidated financial statements as of December 31, 2016 and December 31, 2015 and for each of the two years in the period ended December 31, 2016 incorporated by reference in this Prospectus and the Registration Statement have been so incorporated in reliance on the report of BDO USA, LLP, an independent registered public accounting firm, given on authority of said firm as experts in auditing and accounting. The report contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

The financial statements of Pelican Therapeutics, Inc. as of December 31, 2016 and 2015 and for the years then ended, included in our current report on Form 8-K/A filed on July 11, 2017, incorporated by reference in this Prospectus and the Registration Statement have been so incorporated in reliance on the report of BDO USA, LLP, an independent auditor, given on the authority of said firm as experts in accounting and auditing. The report contains an explanatory paragraph regarding Pelican's ability to continue as a going concern.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the securities offered by this prospectus. This prospectus, which is part of the registration statement, omits certain information, exhibits, schedules and undertakings set forth in the registration statement. For further information pertaining to us and the securities offered hereby, reference is made to the registration statement and the exhibits and schedules to the registration statement and the documents incorporated by reference in the registration statement. Statements contained in this prospectus as to the contents or provisions of any documents referred to in this prospectus are not necessarily complete, and in each instance where a copy of the document has been filed as an exhibit to the registration statement, reference is made to the exhibit for a more complete description of the matters involved.

You may read and copy all or any portion of the registration statement and the documents incorporated by reference in the registration statement without charge at the public reference room of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Copies of the registration statement and the documents incorporated by reference in the registration statement may be obtained from the SEC at prescribed rates from the public reference room of the SEC at such address. You may obtain information regarding the operation of the public reference room by calling 1-800-SEC-0330. In addition, registration statements and certain other filings made with the SEC electronically are publicly available through the SEC's website at www.sec.gov. The registration statement, including all exhibits and any amendments to the registration statement and the documents incorporated by reference in the registration statement, have been filed electronically with the SEC. You may also read all or any portion of the registration statement and the documents incorporated by reference in the registration statement on our website at www.heatbio.com. The information contained in, and that can be accessed through, our website is not incorporated into and is not part of this prospectus.

We are subject to the information and periodic reporting requirements of the Exchange Act and, accordingly, are required to file annual reports containing financial statements audited by an independent public accounting firm, quarterly reports containing unaudited financial data, current reports, proxy statements and other information with the SEC. You will be able to inspect and copy such periodic reports, proxy statements and other information at the SEC's public reference room, the website of the SEC referred to above, and our website referred to above.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” certain information that we will file with it which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus. The later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after (i) the date of Amendment No. 1 to this registration statement and prior to effectiveness of this registration statement and (ii) the date of this prospectus and before the completion of the offering of the shares of our common stock included in this prospectus, however, we will not incorporate by reference any documents or portions thereof that are not deemed “filed” with the SEC, or any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K:

- Our Annual Report on Form 10-K for the year ended December 31, 2016 (File No. 001-35994) filed with the SEC on March 31, 2017;
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2017 and June 30, 2017 (File No. 001-35994) filed with the SEC on May 11, 2017 and August 14, 2017, respectively, and our Quarterly Report on Form 10-Q/A (Amendment No. 1) for the quarter ended June 30, 2017 (File No. 001-35994) filed with the SEC on September 15, 2017;
- Our Current Reports on Form 8-K (File No. 001-35994) filed with the SEC on January 4, 2017, February 3, 2017, March 8, 2017, March 13, 2017, March 16, 2017, March 21, 2017, March 24, 2017, April 7, 2017, May 3, 2017, May 31, 2017, June 30, 2017, Form 8-K/A filed on July 11, 2017, Form 8 K/A filed July 17, 2017, September 12, 2017; September 14, 2017; September 15, 2017; September 27, 2017; and September 28, 2017;
- Our Definitive Proxy Statement on Schedule 14A filed with the SEC on May 11, 2017; and
- The description of our common stock set forth in our registration statement on Form 8-A, filed with the SEC on July 8, 2013 (File No. 001-35994).

You may obtain, free of charge, a copy of any of these documents (other than exhibits to these documents unless the exhibits are specifically incorporated by reference into these documents or referred to in this prospectus) by writing or calling us at the following address and telephone number:

Heat Biologics, Inc.
801 Capitola Drive, Suite 12
Durham, North Carolina 27713
(919) 240-7133

Any statement contained in this registration statement or in a document incorporated or deemed to be incorporated by reference in this registration statement shall be deemed to be modified or superseded for purposes of this registration statement to the extent that a statement contained in this registration statement or in any other subsequently filed document which also is or is deemed to be incorporated by reference in this registration statement modifies or supersedes that statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.



Subscription Rights to purchase up to 12,000,000 shares of common stock

Prospectus



Dealer-Manager

, 2017

PART II - INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

We estimate that expenses in connection with the distribution described in this registration statement (other than fees and commissions charged by the dealer-manager, upon the completion of the rights offering) will be as set forth below. We will pay all of the expenses with respect to the distribution, and such amounts, with the exception of the SEC registration fee and the Financial Industry Regulatory Authority, Inc. (“FINRA”) filing fee, are estimates.

SEC registration fee	\$	1,340
FINRA filing fee		1,500
Accounting fees and expenses		45,000
Printing Fees		15,000
Legal fees and expenses		75,000
Dealer-Manager out-of-pocket expenses		180,000
Other (including subscription and information agent fees)		82,160
Total	\$	400,000

ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS

Subsection (a) of Section 145 of the General Corporation Law of the State of Delaware (the “DGCL”) empowers a corporation to indemnify any person who was or is a party or who is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person’s conduct was unlawful.

Subsection (b) of Section 145 empowers a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person acted in any of the capacities set forth above, against expenses (including attorneys’ fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Section 145 further provides that to the extent a director or officer of a corporation has been successful on the merits or otherwise in the defense of any action, suit or proceeding referred to in subsections (a) and (b) of Section 145, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys’ fees) actually and reasonably incurred by such person in connection therewith; that indemnification provided for by Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and the indemnification provided for by Section 145 shall, unless otherwise provided when authorized or ratified, continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of such person’s heirs, executors and administrators. Section 145 also empowers the corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of his status as such, whether or not the corporation would have the power to indemnify such person against such liabilities under Section 145.

Section 102(b)(7) of the DGCL provides that a corporation’s certificate of incorporation may contain a provision eliminating or limiting the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, provided that such provision shall not eliminate or limit the liability of a director (i) for any breach of the director’s duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL, or (iv) for any transaction from which the director derived an improper personal benefit.

Our certificate of incorporation and our bylaws provide that we will indemnify our directors and officers to the fullest extent permitted by the Delaware General Corporation Law, which prohibits our certificate of incorporation from limiting the liability of our directors for the following:

- any breach of the director's duty of loyalty to us or our stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- unlawful payment of dividends or unlawful stock repurchases or redemptions; or
- any transaction from which the director derived an improper benefit.

Our third amended and restated certificate of incorporation provides for indemnification of our directors and executive officers to the maximum extent permitted by the DGCL, and our amended and restated bylaws provide for indemnification of our directors and executive officers to the maximum extent permitted by the DGCL.

We have entered into indemnification agreements with each of our current directors. These agreements will require us to indemnify these individuals to the fullest extent permitted under Delaware law against liabilities that may arise by reason of their service to us and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified. We also intend to enter into indemnification agreements with our future directors and executive officers.

In any dealer-manager agreement we may enter into in connection with the offer of subscription rights to purchase shares of our common stock being registered hereby as well as the shares of common stock issuable upon the exercise of such subscription rights being registered hereby, the dealer-manager will agree to indemnify, under certain conditions, us, our directors, our officers and persons who control us, within the meaning of the Securities Act, against certain liabilities .

ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES

The following information sets forth certain information with respect to all securities which we have sold during the last three years.

On March 3, 2015, we issued 10,000 shares of our common stock to an investor relations firm as partial consideration for services rendered pursuant to the terms of an agreement that we entered into with such firm. These shares were issued upon the exemption from the registration provisions of the Securities Act provided for by Section 4(a)(2) thereof for transactions not involving a public offering.

On April 30, 2015, we issued 10,000 shares of our common stock to an investor relations firm, as partial consideration for services rendered pursuant to the terms of an agreement that we entered into with such firm. These shares were issued upon the exemption from the registration provisions of the Securities Act provided for by Section 4(a)(2) thereof for transactions not involving a public offering.

On August 30, 2015, we issued 10,000 shares of our common stock to an investor relations firm, as partial consideration for services rendered pursuant to the terms of an agreement that we entered into with such firm. These shares were issued upon the exemption from the registration provisions of the Securities Act provided for by Section 4(a)(2) thereof for transactions not involving a public offering.

On September 30, 2016, we issued 7,664 shares of our common stock to an investor relations firm, as partial consideration for services rendered pursuant to the terms of an agreement that we entered into with such firm. These shares were issued upon the exemption from the registration provisions of the Securities Act provided for by Section 4(a)(2) thereof for transactions not involving a public offering.

On December 30, 2016, we issued 12,281 shares of our common stock to an investor relations firm, as partial consideration for services rendered pursuant to the terms of an agreement that we entered into with such firm. These shares were issued upon the exemption from the registration provisions of the Securities Act provided for by Section 4(a)(2) thereof for transactions not involving a public offering.

On March 31, 2017, we issued 11,798 shares of our common stock to an investor relations firm, as partial consideration for services rendered pursuant to the terms of an agreement that we entered into with such firm. These shares were issued upon the exemption from the registration provisions of the Securities Act provided for by Section 4(a)(2) thereof for transactions not involving a public offering.

On April 28, 2017, we consummated the acquisition of 80% of the outstanding equity of Pelican, a related party, and Pelican became a majority owned subsidiary of ours. In exchange for 80% of the outstanding capital stock of Pelican on a fully diluted basis, we paid to the Pelican Stockholders 1,331,056 shares of our restricted common stock representing 4.99% of the outstanding shares of our common stock on the date of the initial execution of the Purchase Agreement. These shares were issued upon the exemption from the registration provisions of the Securities Act provided for by Section 4(a)(2) thereof and Regulation D promulgated thereunder for transactions not involving a public offering.

On June 30, 2017, we issued 17,213 shares of our common stock to an investor relations firm, as partial consideration for services rendered pursuant to the terms of an agreement that we entered into with such firm. These shares were issued upon the exemption from the registration provisions of the Securities Act provided for by Section 4(a)(2) thereof for transactions not involving a public offering.

ITEM 16. EXHIBITS

<u>Exhibit No.</u>	<u>Description</u>
1.1	At Market Issuance Sales Agreement, by and between Heat Biologics, Inc. and FBR Capital Markets & Co. dated August 15, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on August 15, 2016 (File No. 001-35994)
1.2	Form of Dealer-Manager Agreement by and between Heat Biologics, Inc. and RHK Capital Inc. *
3.1	Third Amended and Restated Certificate of Incorporation, as currently in effect Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
3.2	Certificate of Amendment to the Third Amended and Restated Certificate of Incorporation filed on May 29, 2013 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 30, 2013 (File No. 333-188365).
3.3	Amended and Restated Bylaws dated January 11, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 15, 2016 (File No. 001-35994)
3.4	Certificate of Amendment to the Third Amended and Restated Certificate of Incorporation for Increase previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on July 17, 2017 (File No. 001-35994)
4.1	2009 Stock Incentive Plan## Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
4.2	First Amendment of the 2009 Stock Incentive Plan## Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
4.3	Second Amendment of the 2009 Stock Incentive Plan## Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
4.4	Third Amendment of the 2009 Stock Incentive Plan## Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
4.5	Fourth Amendment of the 2009 Stock Incentive Plan## Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
4.6	Warrant issued to Square 1 Bank Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
4.7	Warrant issued to North Carolina Biotechnology Center Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 30, 2013 (File No. 333-188365)
4.8	Specimen Common Stock Certificate of Heat Biologics, Inc. Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
4.9	Form of Stock Purchase Agreement by and among Heat Biologics, Inc. and the Series B investors (Portions of the exhibit have been omitted pursuant to a request for confidential treatment. The omitted portions have been filed with the Commission)## Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
4.10	Form of Representative's Warrant Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 30, 2013 (File No. 333-188365)
4.11	Amendment to Stock Warrant with North Carolina Biotechnology Center Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 30, 2013 (File No. 333-188365)
4.12	2014 Stock Incentive Plan## Previously filed as an exhibit to the Registration Statement on Form S-8 with the Securities and Exchange Commission on June 13, 2014 (File No. 333-196763)
4.13	Warrant issued to Square 1 Bank Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on August 25, 2014 (File No. 001-35994)

4.14	First Amendment to Loan and Security Agreement Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on June 24, 2015 (File No. 001-35994)
4.15	Form of Warrant Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on March 3, 2016 (File No. 001-35994)
4.16	2017 Stock Incentive Plan## Previously filed as an exhibit to the Registration Statement on Form S-8 with the Securities and Exchange Commission on July 11, 2017 (File No. 333-219238)
4.17	Form of Subscription Rights Certificate **
5.1	Legal Opinion of Gracin & Marlow, LLP *
8.1	Opinion of Seligson & Giannattasio, LLP **
10.1	License Agreement (UMJ110) between the University of Miami and Heat Biologics, Inc. effective February 18, 2011*** Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.2	License Agreement (97-14) between the University of Miami and its School of Medicine and Heat Biologics, Inc. effective July 11, 2008**Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.3	License Agreement (143) between the University of Miami and its School of Medicine and Heat Biologics I, Inc. effective February 11, 2011*** Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.4	License Agreement (D-107) between the University of Miami and its School of Medicine and Heat Biologics I, Inc. effective February 18, 2011***Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.5	License Agreement (SS114A) between the University of Miami and its School of Medicine and Heat Biologics I, Inc. effective February 18, 2011***Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.6	Common Stock Subscription Agreement between the University of Miami and Heat Biologics I, Inc. dated July 7, 2009 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.7	Employment Agreement with Jeffrey Wolf dated December 18, 2009## Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.8	Amendment to Employment Agreement with Jeffrey Wolf dated as of January 1, 2011## Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.9	Non-Exclusive Evaluation and Biological Material License Agreement with American Type Culture Collection effective April 12, 2011*** Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.10	Manufacturing Services Agreement with Lonza Walkersville, Inc. dated as of October 20, 2011 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.11	Assignment and Assumption Agreement dated June 26, 2009 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.12	Termination Agreement UM97-114 dated June 26, 2009 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.13	Loan and Security Agreement with Square 1 Bank dated August 7, 2012 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.14	Amendment to License Agreement (UM97-14) dated April 29, 2009 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.15	First Amendment to Loan and Security Agreement with Square 1 Bank dated November 30, 2012 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.16	Second Amendment to License Agreement (UMSS-114) dated August 11, 2009 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.17	Exclusive License between Heat Biologics, Inc. and the University of Michigan dated July 22, 2011 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
10.18	Second Amendment to Loan and Security Agreement with Square 1 Bank dated January 14, 2013 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)

- [10.19](#) Third Amendment to Loan and Security Agreement with Square 1 Bank dated February 28, 2013 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
- [10.20](#) Fourth Amendment to Loan and Security Agreement with Square 1 Bank dated March 19, 2013 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
- [10.21](#) Option Contract for Exclusive License between Heat Biologics, Inc. and the University of Miami dated April 1, 2013 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
- [10.22](#) Fifth Amendment to the Loan and Security Agreement with Square 1 Bank dated April 18, 2013 Previously filed as an exhibit to the Registration Statement on Form S-1 with the Securities and Exchange Commission on May 6, 2013 (File No. 333-188365)
- [10.23](#) Employment Agreement, dated as of October 1, 2013, by and between Melissa Price and the Company## Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on October 1, 2013
- [10.24](#) Employment Agreement, dated as of December 16, 2013, by and between Anil K. Goyal and the Company## Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on December 19, 2013 (File No. 001-35994)
- [10.25](#) Amendment to Employment Agreement, dated as of January 20, 2014 between the Company and Jeffrey Wolf## Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 21, 2014 (File No. 001-35994)
- [10.26](#) Amendment to Employment Agreement, dated as of January 20, 2014 between the Company and Melissa Price## Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 21, 2014 (File No. 001-35994)
- [10.27](#) Employment Agreement, dated as of March 3, 2014 between the Company and Taylor Schreiber ## Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on March 5, 2014 (File No. 001-35994)
- [10.28](#) Lease Agreement dated January 24, 2014 Previously filed as an exhibit to the Annual Report on Form 10-K with the Securities and Exchange Commission on March 31, 2014 (File No. 001-35994)
- [10.29](#) License Agreement (UMK-161) between the University of Miami and its School of Medicine and Heat Biologics I, Inc. effective March 4, 2014*** Previously filed as an exhibit to the Annual Report on Form 10-K with the Securities and Exchange Commission on March 31, 2014 (File No. 001-35994)
- [10.30](#) Loan and Security Agreement dated August 22, 2014 by and between Square 1 Bank, the Company and Heat Biologics I, Inc., Heat Biologics III, Inc. and Heat Biologics IV, Inc. Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on August 25, 2014 (File No. 001-35994)
- [10.31](#) Amendment to Employment Agreement dated January 12, 2015 between the Company and Melissa Price## Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 16, 2015 (File No. 001-35994)
- [10.32](#) Amendment to Employment Agreement dated January 12, 2015 between the Company and Anil Goyal## Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 16, 2015 (File No. 001-35994).
- [10.33](#) Amendment to Employment Agreement dated January 12, 2015 between the Company and Taylor Schreiber## Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 16, 2015 (File No. 001-35994)
- [10.34](#) Severance Agreement, dated as of March 9, 2015 with Matthew Czajkowski Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on March 10, 2015 (File No. 001-35994)
- [10.35](#) First Amendment to Lease Previously filed as an exhibit to the Annual Report on Form 10-K with the Securities and Exchange Commission on March 27, 2015 (File No. 001-35994)
- [10.36](#) Second Amendment to Lease Previously filed as an exhibit to the Annual Report on Form 10-K with the Securities and Exchange Commission on March 27, 2015 (File No. 001-35994)
- [10.37](#) Amendment to Employment Agreement between the Company and Taylor Schreiber, M.D., Ph.D., dated July 23, 2015 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on July 27, 2015 (File No. 001-35994)
- [10.38](#) Amendment to Employment Agreement between the Company and Melissa Price, Ph.D., dated July 23, 2015 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on July 27, 2015 (File No. 001-35994)
- [10.39](#) Amended and Restated Heat Biologics, Inc. 2014 Stock Incentive Plan Previously filed as Appendix A to the Definitive Proxy Statement on Schedule 14A filed with the Securities and Exchange Commission on June 22, 2015)

- [10.40](#) Form of Incentive Stock Option Agreement under the 2014 Stock Incentive Plan, as amended Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on July 27, 2015 (File No. 001-35994)
- [10.41](#) Form of Non-Statutory Stock Option Agreement under the 2014 Stock Incentive Plan, as amended Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on July 27, 2015 (File No. 001-35994)
- [10.42](#) Employment Agreement, dated as of November 30, 2015 between the Company and Timothy Creech Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on December 1, 2015 (File No. 001-35994)
- [10.43](#) Amendment to Employment Agreement between the Company and Jeffrey Wolf, dated January 11, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 15, 2016 (File No. 001-35994)
- [10.44](#) Amendment to Employment Agreement between the Company and Melissa Price, dated January 11, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 15, 2016 (File No. 001-35994)
- [10.45](#) Amendment to Employment Agreement between the Company and Taylor Schreiber, dated January 11, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 15, 2016 (File No. 001-35994)
- [10.46](#) Amendment to Employment Agreement between the Company and Anil Goyal dated January 11, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 15, 2016 (File No. 001-35994)
- [10.47](#) Amendment to Employment Agreement between the Company and Timothy Creech dated January 11, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 15, 2016 (File No. 001-35994)
- [10.48](#) Second Amendment to Loan And Security Agreement between the Company and Pacific Western Bank and Heat Biologics, Inc., Heat Biologics I, Inc., Heat Biologics III, Inc., and Heat Biologics IV, Inc. dated February 29, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on March 3, 2016 (File No. 001-35994)
- [10.49](#) Amendment to Employment Agreement between the Company and Jeffrey Wolf, dated April 1, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on April 7, 2016 (File No. 001-35994)
- [10.50](#) Amendment to Employment Agreement between the Company and Melissa Price, dated April 1, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on April 7, 2016 (File No. 001-35994)
- [10.51](#) Amendment to Employment Agreement between the Company and Taylor Schreiber, dated April 1, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on April 7, 2016 (File No. 001-35994)
- [10.52](#) Employment Agreement between the Company and Ann Rosar, dated April 1, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on April 7, 2016 (File No. 001-35994)
- [10.53](#) Severance Agreement between the Company and Timothy Creech, dated April 5, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on April 7, 2016 (File No. 001-35994)
- [10.54](#) Severance Agreement between the Company and Anil Goyal, dated April 5, 2016 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on April 7, 2016 (File No. 001-35994)
- [10.55](#) Amendment to License Agreement (UM97-14) between the University of Miami and Heat Biologics, Inc. effective July 26, 2016 Previously filed as an exhibit to the Quarterly Report on Form 10-Q with the Securities and Exchange Commission on August 15, 2016 (File No. 001-35994)
- [10.56](#) Form of Indemnification Agreement by and between Heat Biologics, Inc. and its directors and officers Previously filed as an exhibit to the Quarterly Report on Form 10-Q with the Securities and Exchange Commission on August 15, 2016 (File No. 001-35994)
- [10.57](#) Exclusive License Agreement (UMIP-114/Strbo) between the University of Miami and Zolovax, Inc., a wholly-owned subsidiary of Heat Biologics effective October 24, 2016 Previously filed as an exhibit to the Quarterly Report on Form 10-Q with the Securities and Exchange Commission on November 10, 2016 (File No. 001-35994)
- [10.58](#) Amendment to Employment Agreement between the Company and Jeffrey Wolf, dated January 1, 2017 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 4, 2017 (File No. 001-35994)
- [10.59](#) Amendment to Employment Agreement between the Company and Ann Rosar, dated January 1, 2017 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 4, 2017 (File No. 001-35994)

10.60	Employment Agreement between the Company and Jeff T. Hutchins, dated January 1, 2017 Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 4, 2017 (File No. 001-35994)
10.61	Form of Restricted Stock Unit Award Agreement Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on January 4, 2017 (File No. 001-35994)
10.62	Stock Purchase Agreement by and among Heat Biologics, Inc., with Pelican Therapeutics, Inc. (“Pelican”), and certain stockholders in Pelican Previously filed as an exhibit to the Current Report on Form 8-K with the Securities and Exchange Commission on March 8, 2017 (File No. 001-35994)
10.63	First Amendment to Exclusive License Agreement between The Regents of The University of Michigan and Heat Biologics, Inc. (UM File Number 3680) dated December 1, 2016 Previously filed as an exhibit to the Annual Report on Form 10-K with the Securities and Exchange Commission on March 31, 2017 (File No. 001-35994)
10.64	First Amendment to Stock Purchase Agreement to Stock Purchase Agreement dated March 29, 2017 by and among Heat Biologics, Inc., Pelican Therapeutics, Inc. and Josiah Hornblower as representative of the Stockholders Previously filed as an exhibit to the Annual Report on Form 10-K with the Securities and Exchange Commission on March 31, 2017 (File No. 001-35994)
10.65	Funding Commitment issued by Heat Biologics, Inc. dated April 6, 2017 (filed as Exhibit 10.1 to Heat Biologics, Inc.’s Current Report on Form 8-K filed with the Securities and Exchange Commission on April 7, 2017)
10.66	License Agreement by and between University of Miami and Pelican Therapeutics, Inc. (f/k/a Heat Biologics II, Inc.) dated July 11, 2008 (UM03-31, UM05-39) (filed as Exhibit 10.2 to Heat Biologics, Inc.’s Current Report on Form 8-K filed with the Securities and Exchange Commission on May 3, 2017)
10.67	License Agreement by and between University of Miami and Pelican Therapeutics, Inc. (f/k/a Heat Biologics II, Inc.) dated December 12, 2010 (UM1176) (filed as Exhibit 10.3 to Heat Biologics, Inc.’s Current Report on Form 8-K filed with the Securities and Exchange Commission on May 3, 2017)
10.68	License Agreement by and between University of Miami and Pelican Therapeutics, Inc. (f/k/a Heat Biologics II, Inc.) dated November 19, 2013 (UM-143 and UMN-106) (filed as Exhibit 10.4 to Heat Biologics, Inc.’s Current Report on Form 8-K filed with the Securities and Exchange Commission on May 3, 2017)
10.69	Amendment to License Agreement between Heat Biologics, Inc. and University of Miami dated April 20, 2009 (filed as Exhibit 10.5 to Heat Biologics, Inc.’s Current Report on Form 8-K filed with the Securities and Exchange Commission on May 3, 2017)
10.70	Assignment and Assumption Agreement between Heat Biologics, Inc. and Pelican Therapeutics, Inc. (f/k/a Heat Biologics II, Inc.) dated June 26, 2009 (UM03-31, UM05-39) (filed as Exhibit 10.6 to Heat Biologics, Inc.’s Current Report on Form 8-K filed with the Securities and Exchange Commission on May 3, 2017)
10.71	Second Amendment to License Agreement between Pelican Therapeutics, Inc. (f/k/a Heat Biologics II, Inc.) and University of Miami dated August 11, 2009 (UM03-31, UM05-39) (filed as Exhibit 10.7 to Heat Biologics, Inc.’s Current Report on Form 8-K filed with the Securities and Exchange Commission on May 3, 2017)
10.72	Payment Agreement between Pelican Therapeutics, Inc. (f/k/a Heat Biologics II, Inc.) dated December 19, 2012 (UM1176) (filed as Exhibit 10.8 to Heat Biologics, Inc.’s Current Report on Form 8-K (File No. 001-35994) filed with the Securities and Exchange Commission on May 3, 2017)
10.73	CPRIT Grant (filed as Exhibit 10.9 to Heat Biologics, Inc.’s Current Report on Form 8-K (File No. 001-35994) filed with the Securities and Exchange Commission on May 3, 2017)
10.74	Amendment to Employment Agreement with Jeff T. Hutchins dated as of June 29, 2017 (filed as Exhibit 10.1 to Heat Biologics, Inc.’s Current Report on Form 8-K (File No. 001-35994) filed with the Securities and Exchange Commission on June 30, 2017)
10.75	Amendment to Employment Agreement with Ann Rosar dated as of June 29, 2017 (previously filed as Exhibit 10.2 to Heat Biologics, Inc.’s Current Report on Form 8-K (File No. 001-35994) filed with the Securities and Exchange Commission on June 30, 2017)
21.1	List of Subsidiaries **
23.1	Consent of BDO USA, LLP, Independent Registered Public Accounting Firm *
23.2	Consent of Gracin & Marlow, LLP (contained in Exhibit 5.1) *
23.3	Consent of BDO USA, LLP, Independent Auditor *
99.1	Form of Instructions for Use of Subscription Rights Certificates **
99.2	Form of Notice of Guaranteed Delivery **
99.3	Form of Letter to Stockholders who are Record Holders and to Warrantholders of Record **
99.4	Form of Letter to Brokers and Other Nominee Holders **
99.5	Form of Letter to Clients of Brokers and other Nominee Holders **
99.6	Form of Beneficial Owner Election Form **
99.7	Form of Nominee Holder Certification **

* Filed herewith.

** Previously filed.

Management contract or compensatory plan or arrangement required to be identified pursuant to Item 15(a)(3) of this report.

*** Confidential treatment has been requested as to certain portions of this exhibit pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

ITEM 17. UNDERTAKINGS

(a) The undersigned registrant hereby undertakes:

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

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933 (the "Securities Act");

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

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

Provided, however, that Paragraphs (a)(1)(i), (ii), and (iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

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

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

(4) That, for the purpose of determining liability under the Securities Act to any purchaser: If the registrant is subject to Rule 430C (§230.430C of this chapter), each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A (§230.430A of this chapter), shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424 (§230.424 of this chapter);

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) The undersigned registrant hereby undertakes to supplement the prospectus, after the expiration of the subscription period, to set forth the results of the subscription offer, the transactions by the underwriters during the subscription period, the amount of unsubscribed securities to be purchased by the underwriters, and the terms of any subsequent reoffering thereof. If any public offering by the underwriters is to be made on terms differing from those set forth on the cover page of the prospectus, a post-effective amendment will be filed to set forth the terms of such offering.

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

(e) For the purpose of determining any liability under the Securities Act, the registrant will treat the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant under Rule 424(b)(1), or (4), or 497(h) under the Securities Act as part of this registration statement as of the time the Commission declared it effective.

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

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this Amendment No. 1 to Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Durham, State of North Carolina, October 10, 2017.

HEAT BIOLOGICS, INC.

By: /s/ Jeffrey Wolf
Name: Jeffrey Wolf
Title: Chairman and Chief Executive Officer

Pursuant to the requirements of the Securities Act 1933, this report has been signed by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Jeffrey Wolf</u> Jeffrey Wolf	Chief Executive Officer, President and Chairman (Principal Executive Officer)	October 10, 2017
<u>/s/ Ann Rosar</u> Ann Rosar	Vice President of Finance and Secretary (Principal Financial and Accounting Officer)	October 10, 2017
<u>*</u> John Monahan, Ph.D.	Director	October 10, 2017
<u>*</u> John K. A. Prendergast, Ph.D.	Director	October 10, 2017
<u>*</u> Edward B. Smith	Director	October 10, 2017

By: /s/ Jeffrey Wolf
Jeffrey Wolf
Attorney-in-Fact

DEALER-MANAGER AGREEMENT

October __, 2017

Advisory Group Equity Services, Ltd.
doing business as RHK Capital

As Dealer-Manager
276 Post Road West
Westport, CT 06880

Ladies and Gentlemen:

The following will confirm our agreement relating to the proposed subscription rights offering (the “Rights Offering”) to be undertaken by Heat Biologics, Inc., a Delaware corporation (the “Company”), pursuant to which the Company will distribute to holders of record of its common stock, par value \$0.0002 per share (the “Common Stock”), subscription rights to purchase up to 15,000,000 shares of its Common Stock (the “Rights”) as set forth in the Company’s registration statement on Form S-1 (File No. 333-220470) filed with the U.S. Securities and Exchange Commission (the “Commission”) on September 15, 2017, as amended, to subscribe for and purchase shares of Common Stock (the “Rights Shares”) at a subscription price to be determined by mutual agreement of the Company and the Dealer-Manager prior to the completion of the Rights Offering (the “Subscription Price”).

1. The Rights Offering.

(a) The Company proposes to undertake the Rights Offering pursuant to which each holder of Common Stock and each warrant holder shall receive one Right for each share of Common Stock held of record, and each share of Common Stock into which warrants held by such warrant holders were exercisable, at the close of business on October 13, 2017 (the “Record Date”). Holders of Rights (each a “Holder”) will be entitled to subscribe for and purchase, at the Subscription Price, one share of Common Stock for every Right granted to Holders on the Record Date (the “Basic Subscription Right”).

The Company will initially distribute, at no charge, Rights to purchase up to an aggregate of 12,000,000 shares of Common Stock. If, however, the aggregate number of shares of Common Stock for which Rights are exercised exceeds 12,000,000 shares, the Company’s Board of Directors, in its sole discretion, will have the right, but not the obligation, to increase the size of the Rights Offering by Rights to purchase up to an additional 3,000,000 shares of Common Stock (or Rights to purchase up to a maximum of 15,000,000 shares of Common Stock in the Rights Offering).

(b) The Rights shall be non-transferable. The Rights Shares are expected to be traded on the Nasdaq Capital Market and shall be transferable in accordance with applicable state “blue sky” laws, rules and regulations.

(c) Any holder of Rights who fully exercises all Basic Subscription Rights issued to such holder is entitled to subscribe for Rights Shares which were not otherwise subscribed for by others pursuant to their Basic Subscription Rights (the “Over-Subscription Privilege”). The Over-Subscription Privilege shall allow a holder of a Right to subscribe for an additional amount equal to any and all of the Rights Shares which were not otherwise subscribed for as of the Expiration Date (as defined below). Rights Shares acquired pursuant to the Over-Subscription

Privilege are subject to allotment and pro rata allocation, as more fully discussed in the Prospectus (as defined herein).

(d) The Rights will expire at 5:00 p.m., New York City time, on November 8, 2017, (the “Expiration Date”). The Company shall have the right to extend the Expiration Date for up to an additional 30 days in its sole discretion.

(e) All funds from the exercise of Basic Subscription Rights and Over-Subscription Privilege will be deposited with Continental Stock Transfer & Trust Company, as the subscription agent (the “Subscription Agent”), and held in a segregated account with the Subscription Agent pending a final determination of the number of Rights Shares to be issued pursuant to the exercise of Basic Subscription Rights and Over-Subscription Privilege. As soon as is practicable after the Expiration Date, the Company shall conduct a closing of the Rights Offering (a “Closing”).

2. Appointment as Dealer-Manager; Role of Dealer-Manager. The Company hereby engages Advisory Group Equity Services, Ltd. doing business as RHK Capital (“RHK Capital”) as the exclusive dealer-manager (the “Dealer-Manager”) in connection with the Rights Offering, and authorizes the Dealer-Manager to act as such on its behalf in connection with the Rights Offering, in accordance with this Dealer-Manager Agreement (this “Agreement”). During the Engagement Period, as defined in the engagement letter entered into by and between the Company and the Dealer-Manager, dated September 11, 2017, as amended (the “Engagement Letter”), the Company will not solicit, negotiate with or enter into any agreement with any placement agent, financial advisor, dealer-manager, brokers, dealers or underwriters or any other person or entity in connection with the Rights Offering. On the basis of the representations and warranties and agreements of the Company contained in this Agreement and subject to and in accordance with the terms and conditions hereof, the Dealer-Manager agrees that as Dealer-Manager it will, in accordance with its customary practice and to the extent requested by the Company, use its commercially reasonable efforts to (i) advise on pricing, structuring and other terms and conditions of the Rights Offering, including whether to provide for transferability, tradability and oversubscription rights and limits (it being acknowledged that such services have been previously provided pursuant to the Engagement Letter without compensation therefor), (ii) provide guidance on general market conditions and their impact on the Rights Offering, (iii) assist the Company in drafting a presentation that may be used to market the Rights Offering to existing and potential investors, describing the proposed capital raising, the Company’s history and performance to date, track records of key executives, highlights of the Company’s business plan and the intended use of proceeds from the Rights Offering, (iv) advise on the selection of the Information Agent and Subscription Agent (it being acknowledged that such advice has been previously rendered pursuant to the Engagement Letter), (v) assist the Company with its understanding of state blue sky laws, (vi) solicit the holders of the Rights to encourage them to exercise such Rights and (vii) use its best efforts to place any unsubscribed Rights Shares at the Subscription Price for an additional period of up to 45 days. For the avoidance of doubt and notwithstanding anything that may be to the contrary in this Agreement, the Company and the Dealer-Manager hereby agree that the Dealer-Manager will not underwrite the Rights Offering, the Dealer-Manager has no obligation to act, and will not act, in any capacity as an underwriter

in connection with the Rights Offering and the Dealer-Manager has no obligation to purchase or procure purchases of the Rights Shares offered in connection with the Rights Offering. Except as set forth herein, the Company agrees that it will not hold the Dealer-Manager liable or responsible for the failure of the Rights Offering in the event that the Rights Offering is not successfully consummated for any reason.

3. No Liability for Acts of Brokers, Dealers, Banks and Trust Companies. The Dealer-Manager shall not be subject to any liability to the Company or any of the Company's Subsidiaries (as defined below) or "affiliates" ("Affiliates," as such term is defined in Rule 144 under the Securities Act of 1933, as amended (the "Securities Act")) for any act or omission on the part of any broker or dealer in securities (other than the Dealer-Manager) or any other natural person, partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, unincorporated association, joint venture, or other entity or organization (each, a "Person"), and the Dealer-Manager shall not be liable for its own acts or omissions in performing its obligations as advisor or Dealer-Manager hereunder or otherwise in connection with the Rights Offering or the related transactions, except for any losses, claims, damages, liabilities and expenses resulting from any such acts or omissions undertaken or omitted to be taken by the Dealer-Manager through its bad faith, gross negligence or willful misconduct. In soliciting or obtaining exercises of Rights, the Dealer-Manager shall not be deemed to be acting as the agent of the Company or as the agent of any broker, dealer, bank or trust company, and no broker, dealer, bank or trust company shall be deemed to be acting as the Dealer-Manager's agent or as the agent of the Company. As used herein, the term "Subsidiary" means a Subsidiary of the Company as defined in Rule 405 of the Securities Act. Unless the context specifically requires otherwise, the term "Company" as used in this Agreement means the Company and its Subsidiaries collectively on a consolidated basis.

4. The Offer Documents.

(a) There will be used in connection with the Rights Offering certain materials in addition to the Registration Statement, Preliminary Prospectus and any Prospectus Supplement as filed (each as defined herein), including: (i) all exhibits to the Registration Statement which pertain to the conduct of the Rights Offering and all documents incorporated by reference in the Registration Statement, (ii) any soliciting materials relating to the Rights Offering approved by the Company and (iii) any free writing prospectus with respect to the Rights Offering filed by the Company (collectively with the Registration Statement and the Prospectus, the "Offer Documents"). The Dealer-Manager shall be given an opportunity to review and comment upon the Offer Documents.

(b) The Company agrees to furnish the Dealer-Manager with as many copies as it may reasonably request of the final forms of the Offer Documents and the Dealer-Manager is authorized to use copies of the Offer Documents in connection with its acting as Dealer-Manager. The Dealer-Manager hereby agrees that it will not disseminate any written material for or in connection with the solicitation of exercises of Rights pursuant to the Rights Offering other than the Offer Documents.

(c) The Company represents and agrees that no solicitation material, other than the Offer Documents and the documents to be filed therewith as exhibits thereto (each in the form of which has been approved by the Dealer-Manager), will be used in connection with the Rights Offering by or on behalf of the Company without the prior approval of the Dealer-Manager, which approval will not be unreasonably withheld. In the event that the Company uses or permits the use of any such other solicitation material in connection with the Rights Offering, then the Dealer-Manager shall be entitled to withdraw as Dealer-Manager in connection with the Rights Offering and the related transactions without any liability or penalty to the Dealer-Manager or any other Person identified in Section 11 hereof as an “indemnified party,” and the Dealer-Manager shall be entitled to receive the payment of all fees and expenses payable under this Agreement or the Engagement Letter which have accrued to the date of such withdrawal or which otherwise thereafter become payable.

(d) As of the date hereof and at all times prior to and following the effectiveness of the Registration statement, the Company and its officers, directors and Affiliates shall abide by all rules and regulations of the Commission relating to public offerings, including, without limitation, those relating to public statements and disclosures of material non-public information.

5. Representations and Warranties. The Company represents and warrants to the Dealer-Manager that:

(a) The Company has prepared and filed with the Commission a registration statement on Form S-1, and an amendment or amendments thereto (File No. 333-220470), including a Preliminary Prospectus (as defined below) for the registration of the Rights and Rights Shares under the Securities Act, which Registration Statement, as so amended prior to the Effective Time (including post-effective amendments, if any), has been declared effective by the Commission and copies of which have heretofore been delivered to the Dealer-Manager. At the time of such filing, the Company met the requirements of Form S-1 under the Securities Act. Promptly after execution and delivery of this Agreement, the Company will prepare and file a prospectus in accordance with the provisions of Rule 430A (“Rule 430A”) of the rules and regulations of the Commission under the Securities Act (the “Securities Act Regulations”) and paragraph (b) of Rule 424 (“Rule 424(b)”) of the Securities Act Regulations. The information included in such prospectus that was omitted from such Registration Statement at the time it became effective but that is deemed to be part of such Registration Statement at the time it became effective pursuant to paragraph (b) of Rule 430A is referred to as “Rule 430A Information.” The Preliminary Prospectus and each prospectus used before such Registration Statement became effective, and any prospectus that omitted the Rule 430A Information that was used after such effectiveness and prior to the execution and delivery of this Agreement, is referred to herein as a “Preliminary Prospectus.” For purposes of this Agreement, “Effective Time” means the date and the time as of which such registration statement, or the most recent post-effective amendment thereto, if any, was declared effective by the Commission; “Effective Date” means the date of the Effective Time; “Registration Statement” means such Registration Statement, as amended at the Effective Time, including any documents which are exhibits thereto; and “Prospectus” means such final prospectus, as first filed with the Commission pursuant to paragraph (1) or (4) of Rule 424(b) of the Securities Act, including the Preliminary Prospectus all information or reports under the Securities Exchange Act of 1934, as amended,

incorporated in the Prospectus by reference. The Commission has not issued any order preventing or suspending the use of any Preliminary Prospectus or the Prospectus. All references in this Agreement to the Registration Statement, a Preliminary Prospectus, and the Prospectus, or any amendments or supplements to any of the foregoing shall be deemed to include any copy thereof filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval System (“EDGAR”). The Prospectus delivered to the Dealer-Manager for use in connection with the Rights Offering will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T promulgated by the Commission.

(b) The Registration Statement (together with all exhibits filed as part of the Registration Statement) conforms, and any Preliminary Prospectus and the Prospectus and any further amendments or supplements to the Registration Statement conforms or will conform, when they are filed with or become effective by the Commission, as the case may be, in each case, in all material respects to the requirements of the Securities Act and collectively do not and will not, as of the applicable Effective Date (as to the Registration Statement and any amendment thereto) and as of the applicable filing date (as to the Prospectus and any amendment or supplement thereto) contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein (with respect to the Prospectus, in the light of the circumstances under which they were made) not misleading; provided that no representation or warranty is made by the Company as to information contained in or omitted from the Registration Statement or the Prospectus in reliance upon and in conformity with written information furnished to the Company by or on behalf of the Dealer-Manager specifically for inclusion therein, it being acknowledged and agreed that such information provided by or on behalf of the Dealer-Manager consists solely and exclusively of the following disclosure contained in the Prospectus (collectively, the “Dealer-Manager Information”): (i) the name of the Dealer-Manager acting in its capacity as dealer-manager for the Rights Offering; (ii) “Summary of the Rights Offering — Distribution Arrangements”; (iii) “The Rights Offering — Distribution Arrangements”; and (iv) “Plan of Distribution—Dealer Manager.”

(c) There are no contracts, agreements, plans or other documents which are required to be described in the Prospectus or filed as exhibits to the Registration Statement by the Securities Act which have not been described in the Prospectus or filed as exhibits to the Registration Statement or referred to in, or incorporated by reference into, the exhibit table of the Registration Statement as permitted by the Securities Act.

(d) The Company and each of its Subsidiaries have been duly incorporated and are validly existing as corporations in good standing under the laws of their respective jurisdictions of incorporation, are duly qualified to do business and are in good standing as foreign corporations in each jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such qualification, and have all power and authority necessary to own or hold their respective properties and to conduct the businesses in which they are engaged, except where the absence of such power or authority (either individually and in the aggregate) could not reasonably be expected to have a material adverse effect on: (i) the business, condition (financial or otherwise), results of operations, shareholders’ equity,

properties or prospects (as such prospects are disclosed or described in the Prospectus) of the Company or its Subsidiaries; (ii) the long-term debt or capital stock of the Company or its Subsidiaries; or (iii) the Rights Offering or consummation of any of the other transactions contemplated by this Agreement, the Registration Statement or the Prospectus (any such effect being a “ Material Adverse Effect ”).

(e) This Agreement has been duly authorized, executed and delivered by the Company and, assuming the due authorization, execution and delivery by the Dealer-Manager, constitutes the valid and legally binding agreement of the Company, enforceable against the Company in accordance with its terms, except as the enforceability thereof may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws relating to or affecting creditors’ rights generally and by general principles of equity.

(f) Neither the Company nor any of its Subsidiaries: (i) is in violation of its charter or by-laws, (ii) in default under or in breach of, and no event has occurred which, with notice or lapse of time or both, would constitute a default or breach under or result in the creation or imposition of any lien, charge, mortgage, pledge, security interest, claim, equity, trust or other encumbrance, preferential arrangement, defect or restriction of any kind whatsoever (each, a “ Lien ”) upon any of their property or assets pursuant to, any material contract, agreement, indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which it is a party or by which it is bound or to which any of its properties or assets is subject, or (iii) is in violation in any respect of any law, rule, regulation, ordinance, directive, judgment, decree or order, foreign and domestic, to which it or its properties or assets may be subject or has failed to obtain any material license, permit, certificate, franchise or other governmental authorization or permit necessary to the ownership of its properties or assets or to the conduct of its business, except, in the case of clauses (ii) and (iii) above, any violation, default or failure to possess the same that would not have a Material Adverse Effect.

(g) Prior to or on the date hereof: (i) the Company and the Subscription Agent have or will have entered into a subscription agency agreement (the “ Subscription Agency Agreement ”) if required by the Subscription Agent and (ii) the Company and D.F. King & Co., Inc. (the “ Information Agent ”) have or will have entered into an information agency agreement (the “ Information Agency Agreement ”) if required by the Information Agent. When executed by the Company, if applicable, each of the Subscription Agency Agreement and the Information Agency Agreement will have been duly authorized, executed and delivered by the Company and, assuming due authorization, execution and delivery by Subscription Agent or the Information Agent, as the case may be, will constitute a valid and legally binding agreement of the Company enforceable in accordance with its terms, except as the enforceability thereof may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws relating to or affecting creditors’ rights generally and by general principles of equity.

(h) The Rights and Rights Shares to be issued and distributed by the Company have been duly and validly authorized and, when issued and delivered in accordance with the terms of the Offer Documents, will be duly and validly issued, and will constitute valid and legally binding obligations of the Company enforceable against the Company in accordance with their terms, no holder of the Rights and Rights Shares is or will be subject to personal liability by

reason of being such a holder, and the Rights and Rights Shares conform to the description thereof contained in the Prospectus. The shares of Common Stock issuable upon exercise of any Rights have been duly and validly authorized and, when issued and delivered in accordance with the terms of the Rights, will be duly and validly issued, fully paid and non-assessable and will constitute valid and legally binding obligations of the Company enforceable against the Company in accordance with their terms, no holder of the Common Stock is or will be subject to personal liability by reason of being such a holder, and the Common Stock conforms to the description thereof contained in the Prospectus.

(i) Except as disclosed in the Prospectus with respect to the Company's authorized capitalization, the Rights Shares have been duly and validly authorized and reserved for issuance upon exercise of the Rights and are free of statutory and contractual preemptive rights and are sufficient in number to meet the exercise requirements of the Rights Offering; and the Rights Shares, when so issued and delivered against payment therefore in accordance with the terms of the Rights Offering, will be duly and validly issued, fully paid and non-assessable, with no personal liability attaching to the ownership thereof, and will conform to the description thereof contained in the Prospectus.

(j) Except as disclosed in the Registration Statement and the documents incorporated by reference therein, the Common Stock is traded on the Nasdaq Capital Market. The Company has not received an oral or written notification from the Nasdaq Capital Market or any court or any other federal, state, local or foreign governmental or regulatory authority having jurisdiction over the Company or any of its Subsidiaries or any of their properties or assets ("Governmental Authority") of any inquiry or investigation or other action that would cause the Common Stock or the Rights Shares to not be traded on the Nasdaq Capital Market.

(k) The Company has an authorized capitalization as set forth under the caption "Capitalization" in the Prospectus, and all of the issued shares of capital stock of the Company have been duly and validly authorized and issued, are fully paid and non-assessable and have been issued in compliance with federal and state securities laws. None of the outstanding shares of Company capital stock were issued in violation of any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase securities of the Company. There are no authorized or outstanding options, warrants, preemptive rights, rights of first refusal or other rights to purchase, or equity or debt securities convertible into or exchangeable or exercisable for, any capital stock of the Company or any of its subsidiaries other than those accurately described in the Registration Statement. The description of the Company's stock option, stock bonus and other stock plans or arrangements, and the options or other rights granted thereunder, set forth in the Registration Statement accurately and fairly presents in all material respects the information required to be shown with respect to such plans, arrangements, options and rights.

(l) The Company and its Subsidiaries own or lease all such assets or properties as are necessary to the conduct of its business as presently operated and as proposed to be operated as described in the Registration Statement and the Prospectus. Except to the extent leased by the Company or its Subsidiaries, the Company and its Subsidiaries have good and marketable title in fee simple to all assets or real property and good and marketable title to all personal property owned by them, in each case free and clear of any Lien, except for such Liens as are described in

the Registration Statement and the Prospectus. Any assets or real property and buildings held under lease or sublease by the Company or any Subsidiary is held under valid, subsisting and enforceable leases with such exceptions as are not material to, and do not interfere with, the use made and proposed to be made as described in the Registration Statement and Prospectus of such property and buildings by the Company or such Subsidiary. Neither the Company nor any Subsidiary has received any notice of any material claim adverse to its ownership of any real or personal property or of any material claim against the continued possession of any real property, whether owned or held under lease or sublease by the Company or any Subsidiary.

(m) The Company and its Subsidiaries have all material consents, approvals, authorizations, orders, registrations, qualifications, licenses, filings and permits of, with and from all judicial, regulatory and other Governmental Authorities and all third parties, foreign and domestic (collectively, with the Licensing Requirements described below, the “Consents”), to own, lease and operate their properties and conduct their businesses as presently being conducted and as disclosed in the Registration Statement and the Prospectus, and each such Consent is valid and in full force and effect. The Company has not received notice of any investigation or proceedings which results in or, if decided adversely to the Company, could reasonably be expected to result in, the revocation of any Consent or reasonably be expected to have a Material Adverse Effect. No Consent contains a materially burdensome restriction not adequately disclosed in the Registration Statement and the Prospectus.

(n) The execution, delivery and performance of this Agreement by the Company, the issuance of the Rights in accordance with the terms of the Offer Documents, the issuance of the Rights Shares in accordance with the terms of the Rights Offering, and the consummation by the Company of the transactions contemplated hereby, the Subscription Agency Agreement and the Information Agency Agreement, will not conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its Subsidiaries or any of its Affiliates is a party or by which the Company or any of its Subsidiaries or its Affiliates is bound or to which any of the properties or assets of the Company or any of its Subsidiaries or its Affiliates is subject, nor will such actions result in any violation of the provisions of the charter or by-laws of the Company or any of its Subsidiaries or any statute or any order, rule or regulation of any Governmental Authority; and except for the registration of the Rights and the Rights Shares under the Securities Act and such consents, approvals, authorizations, registrations or qualifications as may be required under the Exchange Act and applicable state securities laws in connection with the distribution of the Rights and the sale of the Rights Shares by the Company, no consent, approval, authorization or order of, or filing or registration with, any such court or Governmental Authority is required for the execution, delivery and performance of this Agreement by the Company and the consummation by it of the transactions contemplated hereby.

(o) Except as otherwise set forth in the Prospectus, there are no contracts, agreements or understandings between the Company and any Person granting such Person the right to require the Company to include such securities in the securities registered pursuant to the Registration Statement. No holder of any security of the Company has any rights of rescission or similar rights with respect to such securities held by them.

(p) Neither the Company nor any of its Subsidiaries has sustained, since the date of the latest balance sheet included in the Prospectus or after such date and as disclosed in the Prospectus, any material loss or interference with its business from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor dispute or court or governmental action, order or decree; and, since such date or after such date and as disclosed in the Prospectus, there has not been any change in the capital stock or long-term debt of the Company or any of its Subsidiaries or any material adverse change, or any development involving a prospective material adverse change, in or affecting the general affairs, management, financial position, stockholders' equity, results of operations or prospects (as such prospects are disclosed or described in the Prospectus) of the Company and its Subsidiaries (a "Material Adverse Change"). Since the date of the latest balance sheet presented in the Prospectus, the Company has not incurred or undertaken any liabilities or obligations, whether direct or indirect, liquidated or contingent, matured or unmatured, or entered into any transactions, including any acquisition or disposition of any business or asset, which are material to the Company, except for liabilities, obligations and transactions which are disclosed in the Registration Statement, any Preliminary Prospectus and the Prospectus.

(q) BDO USA, LLP ("BDO"), whose reports relating to the Company are included in the Registration Statement, are independent registered public accountants as required by the Securities Act, the Exchange Act and the rules and regulations promulgated by the Public Company Accounting Oversight Board (the "PCAOB"). BDO, to the best of the Company's knowledge, is duly registered and in good standing with the PCAOB. BDO has not, during the periods covered by the financial statements included in the Registration Statement, the Preliminary Prospectus and the Prospectus, provided to the Company any non-audit services, as such term is used in Section 10A(g) of the Exchange Act.

(r) The financial statements, including the notes thereto, and any supporting schedules included in the Registration Statement, any Preliminary Prospectus and the Prospectus present fairly, in all material respects, the financial position as of the dates indicated and the cash flows and results of operations for the periods specified of the Company. Except as otherwise stated in the Registration Statement, any Preliminary Prospectus and the Prospectus, said financial statements have been prepared in conformity with United States generally accepted accounting principles applied on a consistent basis throughout the periods involved. Any supporting schedules included in the Registration Statement, any Preliminary Prospectus and the Prospectus present fairly, in all material respects, the information required to be stated therein. No other financial statements or supporting schedules are required to be included or incorporated by reference in the Registration Statement. The other financial and statistical information included in the Registration Statement, any Preliminary Prospectus and the Prospectus present fairly, in all material respects, the information included therein and have been prepared on a basis consistent with that of the financial statements that are included in the Registration Statement, such Preliminary Prospectus and the Prospectus and the books and records of the respective entities presented therein.

(s) There are no pro forma or as adjusted financial statements which are required to be included in the Registration Statement, any Preliminary Prospectus and the Prospectus in

accordance with Regulation S-X under the Securities Act which have not been included as so required. The pro forma and/or as adjusted financial information included in the Registration Statement, any Preliminary Prospectus and the Prospectus has been properly compiled and prepared in accordance with the applicable requirements of the Securities Act and include all adjustments necessary to present fairly, in all material respects, in accordance with generally accepted accounting principles the pro forma and as adjusted financial position of the respective entity or entities presented therein at the respective dates indicated and their cash flows and the results of operations for the respective periods specified. The assumptions used in preparing the pro forma and as adjusted financial information included in the Registration Statement, any Preliminary Prospectus and the Prospectus provide a reasonable basis for presenting the significant effects directly attributable to the transactions or events described therein. The related pro forma and pro forma as adjusted adjustments give appropriate effect to those assumptions; and the pro forma and pro forma as adjusted financial information reflect the proper application of those adjustments to the corresponding historical financial statement amounts.

(t) The statistical, industry-related and market-related data included in the Registration Statement, any Preliminary Prospectus and the Prospectus are based on or derived from sources which the Company reasonably believes are reliable and accurate, and such data agree with the sources from which they are derived. All applicable third party consents have been obtained in order for such data to be included in the Registration Statement, any Preliminary Prospectus and the Prospectus.

(u) Except as disclosed in the Registration Statement and the Prospectus, the Company maintains a system of internal accounting and other controls sufficient to provide reasonable assurances that: (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with United States generally accepted accounting principles and to maintain accountability for assets, (iii) access to assets is permitted only in accordance with management's general or specific authorization, and (iv) the recorded accounting for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

(v) The Company's Board of Directors has validly appointed an audit committee, compensation committee and nominating and corporate governance committee whose composition satisfies the requirements of the rules and regulations of the Commission and the Company's Board of Directors and/or audit committee, compensation committee and the nominating corporate governance committee has each adopted a charter as described in the Registration Statement, and such charters are in full force and effect as of the date hereof. Neither the Company's Board of Directors nor the audit committee thereof has been informed, nor is any director of the Company aware, of: (i) except as disclosed in the Registration Statement and the Prospectus, any significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; or (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

(w) The Company is in material compliance with the provisions of the Sarbanes-Oxley Act of 2002, as amended (“Sarbanes-Oxley”) applicable to the Company, and the rules and regulations promulgated thereunder and related or similar rules and regulations promulgated by any other Governmental Authority or self-regulatory entity or agency, except for violations which, singly or in the aggregate, are disclosed in the Prospectus or would not have a Material Adverse Effect.

(x) No relationship, direct or indirect, exists between or among any of the Company or any Affiliate of the Company, on the one hand, and any director, officer, shareholder, customer or supplier of the Company or any Affiliate of the Company, on the other hand, which is required by the Securities Act or the Exchange Act to be described in the Registration Statement or the Prospectus which is not so described as required. Except as disclosed in the Registration Statement and the Prospectus, there are no outstanding loans, advances (except normal advances for business expenses in the ordinary course of business) or guarantees of indebtedness by the Company to or for the benefit of any of the officers or directors of the Company or any of their respective family members. The Company has not, in violation of Sarbanes-Oxley, directly or indirectly, including through any Affiliate of the Company (other than as permitted under Sarbanes-Oxley for depository institutions), extended or maintained credit, arranged for the extension of credit, or renewed an extension of credit, in the form of a personal loan to or for any director or executive officer of the Company.

(y) Except as described in the Prospectus, there are no legal or governmental proceedings pending to which the Company or any of its Subsidiaries is a party or of which any property or asset of the Company or any of its Subsidiaries is the subject which, if determined adversely to the Company or any of its Subsidiaries, are reasonably likely to have a Material Adverse Effect; and to the best of the Company’s knowledge, except as disclosed in the Prospectus, no such proceedings are threatened or contemplated by Governmental Authorities or threatened by others.

(z) The Company and its Subsidiaries have filed all necessary federal, state and foreign income and franchise tax returns and have paid all taxes required to be paid by any of them and, if due and payable, any related or similar assessment, fine or penalty levied against any of them, except where the failure to make such filings or make such payments, either individually or in the aggregate, could not reasonably be expected to have, a Material Adverse Effect. The Company has made adequate charges, accruals and reserves in its financial statements above in respect of all federal, state and foreign income and franchise taxes for all periods as to which the tax liability of the Company or any of its Subsidiaries has not been finally determined.

(aa) Each of the Company and its Subsidiaries maintains insurance of the types and in the amounts which the Company believes to be reasonable and sufficient for a company of its size operating in the Company’s industry, including, but not limited to: (i) directors’ and officers’ insurance (including insurance covering the Company, its directors and officers for liabilities or losses arising in connection with the Rights Offering, including, without limitation, liabilities or losses arising under the Securities Act, the Exchange Act and applicable foreign securities laws), (ii) insurance covering real and personal property owned or leased against theft,

damage, destruction, acts of vandalism and all other risks customarily insured against and (iii) business interruption insurance. There are no claims by the Company or any of its Subsidiaries under any policy or instrument described in this paragraph as to which any insurance company is denying liability or defending under a reservation of rights clause. All of the insurance policies described in this paragraph are in full force and effect. Neither the Company nor any of its Subsidiaries has been refused any insurance coverage sought or applied for, and the Company has no 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 have a Material Adverse Effect.

(bb) The Company and its Subsidiaries own or possess or have the right to use on reasonable terms all patents, patent rights, patent applications, licenses, inventions, copyrights, know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures), trademarks, service marks, trade names, service names and other intellectual property (collectively, “Intellectual Property”) necessary to carry on their respective businesses as described in the Prospectus and as proposed to be conducted; and neither the Company nor any of its Subsidiaries has received any notice or is otherwise aware of any infringement of or conflict with asserted rights of others with respect to any Intellectual Property or of any facts or circumstances which would render any Intellectual Property invalid or inadequate to protect the interests of the Company or any of its Subsidiaries therein, and which infringement or conflict (if the subject of any unfavorable decision, ruling or finding) or invalidity or inadequacy, individually or in the aggregate, might result in a Material Adverse Effect. All former and current employees of the Company or any of its Subsidiaries (and, to the Company’s knowledge, all other agents, consultants and contractors of the Company or any of its subsidiaries who contributed to or participated in the conception or development of any Intellectual Property for the Company or any of its Subsidiaries) have executed written contracts or agreements that assign to the Company all rights to any inventions, improvements, discoveries or information relating to the business of the Company and its subsidiaries, including without limitation all Intellectual Property owned, controlled by or in the possession of the Company or any of its subsidiaries. To the knowledge of the Company, there is no unauthorized use, infringement or misappropriation of any of the Intellectual Property by any third party, employee or former employee. Each agreement and instrument (each, a “License Agreement”) pursuant to which any Intellectual Property is licensed to the Company or any of its subsidiaries is in full force and effect, has been duly authorized, executed and delivered by, and is a valid and binding agreement of, the Company or the applicable subsidiary, as the case may be, enforceable against the Company or such subsidiary in accordance with its terms, except as enforcement thereof may be subject to bankruptcy, insolvency or other similar laws relating to or affecting creditors’ rights generally or by general equitable principles; the Company and its subsidiaries are in compliance with their respective obligations under all License Agreements and, to the knowledge of the Company, all other parties to any of the License Agreements are in compliance with all of their respective obligations thereunder; no event or condition has occurred or exists that gives or would give any party to any License Agreement the right, either immediately or with notice or passage of time or both, to terminate or limit (in whole or in part) any such License Agreement or any rights of the Company or any of its subsidiaries thereunder, to exercise any of such party’s remedies thereunder, or to take any action that would adversely affect any rights of the Company or any of its subsidiaries thereunder or that might have a

Material Adverse Effect and the Company is not aware of any facts or circumstances that would result in any of the foregoing or give any party to any License Agreement any such right; and neither the Company nor any of its subsidiaries has received any notice of default, breach or non-compliance under any License Agreement.

(cc) Except as described in any Preliminary Prospectus, the Prospectus and the Registration Statement, the Company: (i) is and at all times has been in full compliance with all statutes, rules, regulations or guidance applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product manufactured, distributed or sold by the Company or any component thereof (such statutes, rules, regulations or guidance, collectively, “Applicable Laws”); (ii) has not received any notice of adverse finding, warning letter, untitled letter or other correspondence or notice from any Governmental Authority alleging or asserting noncompliance with any Applicable Laws or any licenses, certificates, approvals, clearances, authorizations, permits and supplements or amendments thereto required by any such Applicable Laws (“Authorizations”); (iii) possesses all Authorizations and such Authorizations are valid and in full force and effect and are not in violation of any term of any such Authorizations; (iv) has not received notice of any claim, suit, proceeding, hearing, enforcement, audit, investigation, arbitration or other action from any Governmental Authority or third party alleging that any product operation or activity is in violation of any Applicable Laws or Authorizations and has no knowledge that any such Governmental Authority or third party is considering any such claim, suit, proceeding, hearing, enforcement, audit, investigation, arbitration or other action; (v) has not received notice that any Governmental Authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any Authorizations and has no knowledge that any such Governmental Authority is considering such action; (vi) has filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and correct in all material respects on the date filed (or were corrected or supplemented by a subsequent submission), except, in the case of each of clauses (i), (ii) and (iii), for any default, violation or event that would not, individually or in the aggregate, have or reasonably be expected to have a Material Adverse Effect.

(dd) Neither the Company nor, to the Company’s knowledge, any of the Company’s directors, officers or employees has violated: (i) the Bank Secrecy Act, as amended, (ii) the Money Laundering Control Act of 1986, as amended, (iii) the Foreign Corrupt Practices Act, or (iv) the Uniting and Strengthening of America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT ACT) Act of 2001, and/or the rules and regulations promulgated under any such law, or any successor law, except for such violations which, singly or in the aggregate, would not have a Material Adverse Effect.

(ee) Neither the Company nor any of its Affiliates has, prior to the date hereof, made any offer or sale of any securities which are required to be “integrated” pursuant to the Securities Act with the offer and sale of the Rights Shares pursuant to the Registration Statement.

(ff) Except as described in the Registration Statement and the Prospectus, there are no claims, payments, arrangements, agreements or understandings relating to the payment of a finder's, consulting or origination fee or other compensation by the Company with respect to the issuance or exercise of the Rights or the sale of the Rights Shares or any other arrangements, agreements or understandings of the Company or, to the Company's knowledge, the Company's officers, directors and employees or Affiliates that may affect the Dealer-Manager's compensation, as determined by the Financial Industry Regulatory Authority, Inc. ("FINRA"). Except as previously disclosed by the Company to the Dealer-Manager in writing, no officer, director, or beneficial owner of 5% or more of any class of the Company's securities (whether debt or equity, registered or unregistered, regardless of the time acquired or the source from which derived) or any other Affiliate is a member or a Person associated, or affiliated with a member of FINRA. No proceeds from the exercise of the Rights will be paid to any FINRA member, or any Persons associated or affiliated with a member of FINRA, except as specifically contemplated herein. Except as previously disclosed by the Company to the Dealer-Manager, to the Company's knowledge, no Person to whom securities of the Company have been privately issued within the 180-day period prior to the initial filing date of the Registration Statement has any relationship or affiliation or association with any member of FINRA.

(gg) There are no contracts, agreements or understandings between the Company and any Person that would give rise to a valid claim against the Company or the Dealer-Manager for a brokerage commission, finder's fee or other like payment in connection with the transactions contemplated by this Agreement. Other than the Dealer-Manager, the Company has not employed any brokers, dealers or underwriters in connection with solicitation of exercise of Rights in the Rights Offering, and except provided for in Sections 6 and 7 hereof, no other commissions, fees or discounts will be paid by the Company in connection with solicitation of the exercise of Rights in the Rights Offering.

(hh) Neither the Company nor, to the Company's knowledge, any of the Company's officers, directors, employees or agents has at any time during the last five (5) years: (i) made any unlawful contribution to any candidate for foreign office, or failed to disclose fully any contribution in violation of law, or (ii) made any payment to any federal or state governmental officer or official, or other Person charged with similar public or quasi-public duties, other than payments that are not prohibited by the laws of the United States of any jurisdiction thereof.

(ii) The Company has not and will not, directly or indirectly through any officer, director or Affiliate of the Company or through any other Person: (i) taken any action designed to cause or to result in, or that has constituted or which might reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the issuance of the Rights or the sale or resale of the Rights Shares, (ii) since the filing of the Registration Statement sold, bid for or purchased, or paid any Person (other than the Dealer-Manager) any compensation for soliciting exercises or purchases of, the Rights or the Rights Shares and (iii) until the later of the expiration of the Rights or the completion or termination of the distribution (within the meaning of Regulation M under the Exchange Act) of the Rights Shares, sell, bid for or purchase, apply or agree to pay to any Person (other than the Dealer-Manager) any compensation for soliciting another to purchase any other securities of the Company (except for the solicitation of the exercises of Rights pursuant to this Agreement). The

foregoing shall not apply to the offer, sale, agreement to sell or delivery with respect to: (i) Rights Shares offered and sold upon exercise of the Rights, as described in the Prospectus, or (ii) any shares of Common Stock sold pursuant to the Company's employee benefit plans.

(jj) Each "forward-looking statement" (within the meaning of Section 27A of the Securities Act or Section 21E of the Exchange Act) included in the Registration Statement and the Prospectus has been made or reaffirmed with a reasonable basis and has been disclosed in good faith.

As used in this Agreement, references to matters being "material" with respect to the Company or any matter relating to the Company shall mean a material item, event, change, condition, status or effect related to the condition (financial or otherwise), properties, assets (including intangible assets), liabilities, business, prospects (as such prospects are disclosed or described in any Preliminary Prospectus or the Prospectus), operations or results of operations of the Company and its Subsidiaries, taken as a whole.

As used in this Agreement, the term "knowledge of the Company" (or similar language) shall mean the knowledge of the officers of the Company who are named in the Prospectus, with the assumption that such officers shall have made reasonable and diligent inquiry of the matters presented (with reference to what is customary and prudent for the applicable individuals in connection with the discharge by the applicable individuals of their duties as officers or directors of the Company).

6. Compensation. In consideration for its services in the Rights Offering, the Dealer-Manager shall receive a cash fee equal to 8% of the dollar amount received by the Company from any cash exercise of the Rights issued to investors in the Rights Offering, of which a 6.0% shall be a commission, which commission shall not exceed \$420,000 in the aggregate, and 1.8% shall be a non-accountable expense fee, which non-accountable expense fee shall not exceed \$126,000 in the aggregate, as well as an out-of-pocket accountable expense allowance of 0.2%, which accountable expense allowance shall not exceed \$14,000 in the aggregate, provided that, the Company has previously paid the Dealer-Manager a \$5,000 advance against such out-of-pocket accountable expense allowance (the "Advance"). If the Rights Offering is not consummated, the portion of the Advance not used for the Dealer-Manager's actual out-of-pocket expenses shall be promptly reimbursed to the Company as required under FINRA Rule 5110(f)(2) (D). For any unsubscribed Rights Shares placed by the Dealer-Manager after the conclusion of the Rights Offering, the Dealer-Manager shall receive a placement fee equal to 6.0%, in lieu of the dealer-manager fee, along with continuing non-accountable and accountable expense allowances of 1.8% and 0.2%, respectively, with such placement fee and expenses to be calculated in respect of the total gross proceeds paid to and received by the Company for subscriptions accepted by the Company from investors in connection with such placement and such placement fee and expenses not to exceed the aggregate amounts that would have been otherwise received by the Dealer-Manager if the Rights Offering were fully subscribed. Neither the placement fee or expense allowances in connection with the placement of shares by the Dealer-Manager shall be payable with respect to any securities purchased as result of the exercise of any Basic Subscription Right or Over-Subscription Privilege. All payments to be made by the Company pursuant to this Section 6 shall be made, with respect to the Rights

Offering, on the date of the consummation of the subscriptions for Rights Shares pursuant to the exercise of Rights (the “Closing Date”) or, with respect to the post-Rights Offering placement of Rights Shares by the Dealer-Manager, at the conclusion of such placement, by wire transfer of immediately available funds.

7. Expenses. In addition to the Dealer-Manager’s compensation for services hereunder pursuant to Section 6 hereof, the Company shall pay or cause to be paid:

(a) all expenses (including any taxes) incurred by the Company in connection with the Rights Offering and the preparation, issuance, execution, authentication and delivery of the Rights and the Rights Shares;

(b) all fees, expenses and disbursements of the Company’s accountants, legal counsel and other third party advisors;

(c) all reasonable and documented costs and expenses of the Dealer-Manager as set forth in Section 2 of the Engagement Letter and Section 6 above and reimbursable upon any termination of this Agreement only as permitted by FINRA Rule 5110(f)(2) (D);

(d) all fees and expenses of the Subscription Agent and the Information Agent;

(e) all fees, expenses and disbursements (including, without limitation, fees and expenses of the Company’s accountants and counsel) in connection with the preparation, printing, filing, delivery and shipping of the Registration Statement (including the financial statements therein and all amendments and exhibits thereto), each Preliminary Prospectus, the Prospectus, the other Offer Documents and any amendments or supplements of the foregoing and any printing, delivery and shipping of this Agreement, the costs of distributing the terms of any agreement relating to any organization of soliciting dealers, if any, to the members thereof by mail, fax or other means of communications;

(f) [Intentionally omitted];

(g) all filing fees of the Commission;

(h) all filing fees relating to the review of the Rights Offering by FINRA;

(i) any applicable listing or other fees;

(j) the cost of printing certificates representing the Rights and Rights Shares;

(k) all advertising charges pertaining to the Rights Offering that have been pre-approved by the Company in writing;

(l) the cost and charges of the Company’s transfer agent(s) or registrar(s); and

(m) all other costs and expenses incident to the performance of the Company's obligations hereunder for which provision is not otherwise made in this Section.

(n) All payments to be made by the Company pursuant to this Section 7 shall be made promptly after the termination or expiration of the Rights Offering or, if later, promptly after the related fees, expenses or charges accrue and an invoice therefor is sent by the Dealer-Manager. The Company shall perform its obligations set forth in this Section 7 whether or not the Rights Offering commences or any Rights are exercised pursuant to the Rights Offering, except that the Dealer-Manager's non-accountable expenses may only be reimbursed upon Closing. For the avoidance of doubt, except as reimbursed pursuant to the non-accountable expense fee, the Dealer-Manager shall be responsible for expenses it incurs with respect to the performance of its obligations under this Agreement, including without limitation expenses it incurs with respect to travel and lodging expenses in connection with "road show" trips and legal counsel and other third parties engaged by the Dealer-Manager.

8. Shareholder Lists; Subscription Agent; Information Agent.

(a) The Company will cause the Dealer-Manager to be provided with any cards or lists showing the names and addresses of, and the number of shares of Common Stock held by, the holders of shares of Common Stock as of a recent date and will use its best efforts to cause the Dealer-Manager to be advised from time to time during the period, as the Dealer-Manager shall request, of the Rights Offering as to any transfers of record of shares of Common Stock.

(b) The Company (i) has arranged for the Subscription Agent to serve as subscription agent in connection with the Rights Offering, (ii) will arrange for the Subscription Agent to advise the Dealer-Manager regularly as to such matters as the Dealer-Manager may reasonably request, including the number of Rights that have been exercised, and (iii) will arrange for the Subscription Agent to be responsible for receiving subscription funds paid.

(c) The Company has arranged for D.F. King & Co., Inc. to serve as information agent in connection with the Rights Offering (the "Information Agent" and, together with the Subscription Agent, the "Agents") and to perform services in connection with the Rights Offering that are customary for an information agent.

9. Covenants of the Company. The Company covenants and agrees with the Dealer-Manager:

(a) To use its best efforts to cause the Registration Statement and any amendments thereto to become effective; to advise the Dealer-Manager, promptly after it receives notice thereof, of the time when the Registration Statement, or any amendment thereto, becomes effective or any supplement to the Prospectus or any amended Prospectus has been filed and to furnish the Dealer-Manager with copies thereof; to prepare a Prospectus in a form approved by the Dealer-Manager (such approval not to be unreasonably withheld or delayed) and to file such Prospectus pursuant to Rule 424(b) under the Securities Act within the time prescribed by such rule; to advise the Dealer-Manager, promptly after it receives notice thereof, of the issuance by the Commission of any stop order or of any order preventing or suspending the use of any

Preliminary Prospectus or the Prospectus, of the suspension of the qualification of the Rights for offering or sale in any jurisdiction, of the initiation or threatening of any proceeding for any such purpose, or of any request by the Commission for the amending or supplementing of the Registration Statement or the Prospectus or for additional information; and, in the event of the issuance of any stop order or of any order preventing or suspending the use of any Preliminary Prospectus or the Prospectus or suspending any such qualification, to use promptly its reasonable best efforts to obtain its withdrawal.

(b) To deliver promptly to the Dealer-Manager, at any such location as requested by the Dealer-Manager, such number of the following documents as the Dealer-Manager shall reasonably request: (i) conformed copies of the Registration Statement as originally filed with the Commission and each amendment thereto (in each case excluding exhibits other than this Agreement, any other Offer Documents filed as exhibits, the computation of the ratio of earnings to fixed charges and the computation of per share earnings), (ii) each Preliminary Prospectus, the Prospectus and any amended or supplemented Prospectus and (iii) any document incorporated by reference in the Prospectus (excluding exhibits thereto); and, if the delivery of a prospectus is required at any time during which the Prospectus relating to the Rights or Rights Shares is required to be delivered under the Securities Act and if at such time any events shall have occurred as a result of which the Prospectus as then amended or supplemented would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made when such Prospectus is delivered, not misleading, or, if for any other reason it shall be necessary during such period to amend or supplement the Prospectus or to file under the Exchange Act any document incorporated by reference in the Prospectus in order to comply with the Securities Act or the Exchange Act, to notify the Dealer-Manager and, upon its request, to file such document and to prepare and furnish without charge to the Dealer-Manager as many copies as the Dealer-Manager may from time to time reasonably request of an amended or supplemented Prospectus which will correct such statement or omission or effect such compliance.

(c) To file promptly with the Commission any amendment to the Registration Statement or the Prospectus or any supplement to the Prospectus that may, in the judgment of the Company or the Dealer-Manager, be necessary or advisable in connection with the distribution of the Rights or the sale of the Rights Shares or be requested by the Commission.

(d) Prior to filing with the Commission any: (i) Preliminary Prospectus, (ii) amendment to the Registration Statement, any document incorporated by reference in the Prospectus or (iii) any Prospectus pursuant to Rule 424 of the Securities Act, to furnish a copy thereof to the Dealer-Manager and counsel for the Dealer-Manager and obtain the consent of the Dealer-Manager to the filing (which consent shall not be unreasonably withheld).

(e) To furnish to the Dealer-Manager copies of all materials not available via EDGAR furnished by the Company to its shareholders and all public reports and all reports and financial statements furnished by the Company to the principal national securities exchange upon which any of the Company's securities may be listed pursuant to requirements of or agreements with such exchange or to the Commission pursuant to the Exchange Act or any rule or regulation of the Commission thereunder.

(f) To qualify or register the Rights and Rights Shares for sale under (or obtain exemptions from the application of) the state securities or blue sky laws of those jurisdictions designated by the Dealer-Manager, shall comply with such laws and shall continue such qualifications, registrations and exemptions in effect so long as required for the distribution of the Rights and Rights Shares. The Company shall not be required to qualify as a foreign corporation or to take any action that would subject it to general service of process in any such jurisdiction where it is not presently qualified or where it would be subject to taxation as a foreign corporation. The Company will advise the Dealer-Manager promptly of the suspension of the qualification or registration of (or any such exemption relating to) the Rights and Rights Shares for offering, sale or trading in any jurisdiction or any initiation or threat of any proceeding for any such purpose, and in the event of the issuance of any order suspending such qualification, registration or exemption, the Company shall use its best efforts to obtain the withdrawal thereof at the earliest possible moment.

(g) To apply the net proceeds from the exercise of the Rights in the manner described under the caption "Use of Proceeds" in the Prospectus.

(h) Prior to the effective date of the Registration Statement, to notify FINRA and the Nasdaq Capital Market regarding the Rights Offering.

(i) To take such steps as shall be necessary to ensure that neither the Company nor any Subsidiary shall become an "investment company" within the meaning of such term under the Investment Company Act of 1940 and the rules and regulations of the Commission thereunder.

(j) To advise the Dealer-Manager, directly or through the Subscription Agent, from time to time, as the Dealer-Manager shall request, of the number of Rights Shares subscribed for, and arrange for the Subscription Agent to furnish the Dealer-Manager with copies of written reports it furnishes to the Company concerning the Rights Offering.

(k) To commence mailing the Offer Documents to record holders of the Common Stock not later than the second business day following the record date for the Rights Offering, and complete such mailing as soon as practicable.

(l) To reserve and keep available for issue upon the exercise of the Rights such number of authorized but unissued shares of Rights Shares as will be sufficient to permit the exercise in full of all Rights, except as otherwise contemplated by the Prospectus.

(m) To not take, directly or indirectly, any action designed to cause or to result in, or that has constituted or which might reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the issuance of the Rights or the sale or resale of the Rights Shares.

10. Conditions of Dealer-Manager's Obligations. The obligations of the Dealer-Manager hereunder are subject to (and the occurrence of any Closing shall be conditioned upon) the

accuracy, as of the date hereof and at all times during the Rights Offering, of the representations and warranties of the Company contained herein, to the performance by the Company of its obligations hereunder and to the following additional conditions:

(a) (i) The Registration Statement shall have become effective and the Prospectus shall have been timely filed with the Commission in accordance with the Securities Act; (ii) all post-effective amendments to the Registration Statement shall have become effective; (iii) no stop order suspending the effectiveness of the Registration Statement or any amendment or supplement thereto shall have been issued and no proceedings for the issuance of any such order shall have been initiated or threatened, and (iv) any request of the Commission for additional information (to be included in the Registration Statement or the Prospectus or otherwise) shall have been disclosed to the Dealer-Manager and complied with to the Dealer-Manager's reasonable satisfaction.

(b) The Dealer-Manager shall not have been advised by the Company or shall have discovered and disclosed to the Company that the Registration Statement or the Prospectus or any amendment or supplement thereto, contains an untrue statement of fact which in the Dealer-Manager's opinion, or in the opinion of counsel to the Dealer-Manager, is material, or omits to state a fact which, in the Dealer-Manager's opinion, or in the opinion of counsel to the Dealer-Manager, is material and is required to be stated therein or is necessary to make the statements therein not misleading.

(c) All corporate proceedings and other legal matters incident to the authorization, form and validity of this Agreement, the Rights, the Rights Shares the Registration Statement and the Prospectus, and all other legal matters relating to this Agreement and the transactions contemplated hereby shall be reasonably satisfactory in all material respects to counsel for the Dealer-Manager, and the Company shall have furnished to such counsel all documents and information that they may reasonably request to enable them to pass upon such matters.

(d) On the Closing Date, there shall have been furnished to the Dealer-Manager the signed opinion (addressed to the Dealer-Manager) of Gracin & Marlow, LLP, counsel for the Company, dated as of the Closing Date and in form and substance satisfactory to counsel for the Dealer-Manager, to the effect of the opinions set forth on Exhibit A hereto.

(e) The Company shall have furnished to the Dealer-Manager a certificate, dated as of the Closing Date, of its Chief Executive Officer or President and its Chief Financial Officer stating that:

- i. To the best of their knowledge after reasonable investigation, the representations, warranties, covenants and agreements of the Company hereof are true and correct in all material respects;
- ii. The conditions set forth in this Agreement have been fulfilled;

- iii. Neither the Company nor any of its Subsidiaries has sustained any material loss or interference with its business, whether or not covered by insurance, or from any labor dispute or any legal or governmental proceeding;
- iv. Subsequent to the respective dates as of which information is given in the Registration Statement and the Prospectus, there has not been any Material Adverse Change or any development involving a prospective Material Adverse Change; and
- v. They have carefully examined the Registration Statement and the Prospectus and, in their opinion (A) the Registration Statement and the Prospectus, as of the Effective Date, did not include any untrue statement of a material fact and did not omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading, and (B) since the Effective Date no event has occurred which should have been set forth in a supplement or amendment to the Registration Statement or the Prospectus.

(f) Neither the Company nor any of its Subsidiaries shall have sustained since the date of the latest audited financial statements included in the Prospectus any Material Adverse Change, the effect of which is, in the judgment of the Dealer-Manager, so material and adverse as to make it impracticable or inadvisable to proceed with the Rights Offering.

(g) Neither FINRA nor the Nasdaq Capital Market shall have objected to the Rights Offering.

(h) All opinions, letters, evidence and certificates mentioned above or elsewhere in this Agreement shall be deemed to be in compliance with the provisions hereof only if they are in form and substance reasonably satisfactory to counsel for the Dealer-Manager. If any of the conditions specified in this Section 10 shall not have been fulfilled when and as required by this Agreement, this Agreement and all obligations of the Dealer-Manager hereunder may be canceled at, or at any time during the Rights Offering, by the Dealer-Manager. Any such cancellation shall be without liability of the Dealer-Manager to the Company. Notice of such cancellation shall be given the Company in writing, or by telegraph or telephone and confirmed in writing.

11. Indemnification and Contribution.

(a) The Company agrees to indemnify and hold harmless the Dealer-Manager and its affiliates and any officer, director, employee or agent of RHK Capital or any such affiliates and any Person controlling (within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act) the Dealer-Manager or any of such affiliates (collectively, the “Indemnified Parties”) from and against any and all losses, claims, damages, liabilities and expenses whatsoever, under the Securities Act or otherwise (as incurred or suffered and including, but not limited to, any and all legal or other expenses reasonably incurred in connection with investigating, preparing to defend or defending any lawsuit, claim or other proceeding, commenced or threatened, whether or not resulting in any liability, which legal or other expenses

shall be reimbursed by the Company promptly after receipt of any invoices therefore from the Dealer-Manager), (A) arising out of or based upon: (i) any untrue statement or alleged untrue statement of a material fact contained in the Offer Documents or any amendment or supplement thereto, in any other solicitation material used by the Company or authorized by it for use in connection with the Rights Offering, or in any blue sky application or other document prepared or executed by the Company (or based on any written information furnished by the Company) specifically for the purpose of qualifying any or all of the Rights or the Rights Shares under the securities laws of any state or other jurisdiction (any such application, document or information being hereinafter called a “ Blue Sky Application ”) or arising out of or based upon the omission or alleged omission to state in any such document 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 (other than statements or omissions made in reliance upon and in conformity with the Dealer-Manager Information), (ii) except in accordance with Section 12(b) of this Agreement, any withdrawal or termination by the Company of, or failure by the Company to make or consummate, the Rights Offering, (iii) any actions taken or omitted to be taken by an Indemnified Party with the consent of the Company or in conformity with actions taken or omitted to be taken by the Company or (iv) any material failure by the Company to comply with any agreement or covenant, contained in this Agreement or (B) arising out of, relating to or in connection with or alleged to arise out of, relate to or be in connection with, the Rights Offering, any of the other transactions contemplated thereby or the performance of RHK Capital’s services to the Company with respect to the Rights Offering; provided, however, that in the case of clause (B) only, the Company shall not be responsible for any liabilities or expenses of any Indemnified Party that have resulted primarily from such Indemnified Party’s (x) gross negligence, bad faith or willful misconduct in connection with any of the advice, actions, inactions or services referred to herein or (y) use of any Offering materials or information concerning the Company in connection with the Offer that were not authorized for such use by the Company and which use constitutes negligence, bad faith or willful misconduct. Notwithstanding the foregoing, the Company will not be obligated to indemnify an indemnified party for any loss, claim, damage, liability or expense pursuant to this Section 11(a), if such loss, claim, damage, liability or expense has been determined by a court of competent jurisdiction to have resulted from the willful misconduct or gross negligence on the part of any indemnified party.

(b) The Dealer-Manager shall indemnify and hold harmless the Company, its officers, directors and employees, each of its directors and each person, if any, who controls the Company (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), from and against any loss, claim, damage or liability, joint or several, or any action in respect thereof, to which the Company or any such director, officer or controlling person may become subject, under the Securities Act or otherwise, insofar as such loss, claim, damage, liability or action arises out of, or is based upon: (i) any untrue statement or alleged untrue statement of a material fact contained (A) in any Offer Documents, or in any such amendment or supplement, in any other solicitation material used by the Company or authorized by it for use in connection with the Rights Offering or (B) in any Blue Sky Application; or (ii) the omission or alleged omission to state in any Offer Documents, or in any such amendment or supplement, in any other solicitation material used by the Company or authorized by it for use in connection with the Rights Offering, or in any Blue Sky Application, any material fact required to be stated therein or necessary to make the statements therein not misleading, but in each case solely and exclusively

to the extent that the untrue statement or alleged untrue statement or omission or alleged omission was made in reliance upon and in conformity with the Dealer-Manager Information, and shall reimburse the Company and any such director, officer or controlling person for any legal or other expenses reasonably incurred by the Company or any such director, officer or controlling Person in connection with investigating or defending or preparing to defend against any such loss, claim, damage, liability or action as such expenses are incurred.

(c) If the indemnification provided for in the foregoing paragraph is judicially determined to be unavailable (other than in accordance with the terms hereof) to any Indemnified Party otherwise entitled to indemnity in respect of any losses, claims, damages or liabilities referred to herein, then, in lieu of indemnifying such person hereunder, whether or not the Dealer-Manager is the person entitled to indemnification or reimbursement, the Company shall contribute to the amount paid or payable by the Indemnified Party as a result of such losses, claims, damages or liabilities (and expenses relating thereto) (i) in such proportion as is appropriate to reflect the relative benefits to the Company, on the one hand, and the Dealer-Manager, on the other hand, of the Rights Offering or (ii) if the allocation provided for in clause (i) above is not available, in such proportion as is appropriate to reflect not only the relative benefits referred to in such clause (i) but also the relative fault of each of the Company and the Dealer-Manager, as well as any other relevant equitable considerations; provided, however, in no event shall the Dealer-Manager's aggregate contribution to the amount paid or payable exceed the aggregate amount of fees actually received by the Dealer-Manager under this Agreement. For the purposes of this Agreement, the relative benefits to the Company and to the Dealer-Manager of the engagement shall be deemed to be in the same proportion as (a) the total value paid or contemplated to be paid or received or contemplated to be received by the Company in the Rights Offering, whether or not the Rights Offering is consummated, bears to (b) the fees paid or to be paid to the Dealer-Manager under this Agreement.

(d) For the sole purpose of enforcing and otherwise giving effect to the provisions of this Agreement, the Company hereby consents to personal jurisdiction and service and venue in any court in which any claim which is subject to this agreement is brought against the Dealer-Manager or any other indemnified party.

(e) The Company agrees that it will not, without the prior written consent of the Dealer-Manager, settle or compromise or consent to the entry of any judgment with respect to any pending or threatened claim, action, suit or proceeding in respect of which indemnification or contribution may be sought hereunder (whether or not the Dealer-Manager is an actual or potential party to such claim, action, suit or proceeding) unless such settlement, compromise or consent includes an unconditional release, reasonably satisfactory in form and substance to the Dealer-Manager, releasing the Dealer-Manager from all liability arising out of such claim, action, suit or proceeding.

(f) The indemnifying party agrees to reimburse each indemnified party for all expenses as they are incurred in connection with enforcing such indemnified party's rights hereunder.

(g) Each indemnified party shall give notice as promptly as reasonably practicable to each indemnifying party of any action commenced against it in respect of which indemnity may be sought hereunder, but failure to so notify an indemnifying party shall not relieve such indemnifying party from any liability hereunder to the extent it is not materially prejudiced (through the forfeiture of substantive rights or defenses) as a result thereof and in any event shall not relieve it from any liability which it may have otherwise than on account of this indemnity agreement. In the case of parties indemnified pursuant to Section 11(a) above, counsel to the Indemnified Parties shall be selected by the Dealer-Manager and be reasonably satisfactory to the Company, provided that the Company shall be entitled to participate in any action set forth in Section 11(a) above and, to the extent that it shall wish, to assume the defense thereof, with counsel reasonably satisfactory to the Dealer-Manager provided, however, that if the defendants in any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that a conflict may arise between the positions of the indemnifying party and the indemnified party in conducting the defense of any such action or that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, the indemnified party or parties shall have the right to select separate counsel to assume such legal defenses and to otherwise participate in the defense of such action on behalf of such indemnified party or parties. Upon receipt of notice from the Company to the Dealer-Manager of its election so to assume the defense thereof and approval by the Dealer-Manager of counsel, the Company shall not be liable to such indemnified parties under this section for any legal expenses of other counsel or any other expenses, in each case subsequently incurred by such indemnified parties, in connection with the defense thereof, unless (i) the indemnified party shall have employed separate counsel in accordance with the proviso to the preceding sentence (it being understood, however, that the indemnifying party shall not be liable for the fees and expenses of more than one separate counsel (together with local counsel), representing the indemnified parties who are parties to such action), which counsel (together with any local counsel) for the indemnified parties shall be selected by the Dealer-Manager or (ii) the indemnifying party shall not have employed counsel satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of commencement of the action or (iii) the indemnifying party has authorized in writing the employment of counsel for the indemnified party at the expense of the indemnifying party, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying party and shall be paid as they are incurred. In the case of parties indemnified pursuant to Section 11(b) above, counsel to the indemnified parties shall be selected by the Company and be reasonably acceptable to the Dealer-Manager. An indemnifying party may participate at its own expense in the defense of any such action; provided, however, that counsel to the indemnifying party shall not (except with the consent of the indemnified party) also be counsel to the indemnified party. Except as set forth above, in no event shall the indemnifying parties be liable for fees and expenses of more than one counsel (in addition to any local counsel) separate from their own counsel for all indemnified parties in connection with any one action or separate but similar or related actions in the same jurisdiction arising out of the same general allegations or circumstances. No indemnifying party shall, without the prior written consent of the indemnified parties, settle or compromise or consent to the entry of any judgment with respect to any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever in respect of which indemnification or contribution could be sought under this Section 11 (whether or not the indemnified parties are

actual or potential parties thereto), unless such settlement, compromise or consent (i) includes an unconditional release of each indemnified party from all liability arising out of such litigation, investigation, proceeding or claim and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

12. Effective Date of Agreement; Termination.

(a) This Agreement shall become effective upon the later of the time on which the Dealer-Manager shall have received notification of the effectiveness of the Registration Statement and the time which this Agreement shall have been executed by all of the parties hereto.

(b) This Agreement shall terminate upon the earliest to occur of (a) the consummation, termination or withdrawal of the Rights Offering, and (b) the withdrawal by the Dealer-Manager pursuant to Section 4. The Company may decide, in its discretion and for any reason, to cancel, terminate or withdraw the Rights Offering at any time prior to the Expiration Date.

13. Survival of Certain Provisions. The agreements contained in Sections 3, 6, 7 and 13 through 21 hereof and the representations, warranties and agreements of the Company contained in Section 5 hereof shall survive the consummation of or failure to commence the Rights Offering and shall remain in full force and effect, regardless of any termination or cancellation of this Agreement or any investigation made by or on behalf of any indemnified party; provided, that the Company's obligations under Section 7 to reimburse the Dealer-Manager for accountable expenses are subject to FINRA Rule 5110 (f)(2)(D) in that such expenses are only reimbursable to the extent actually incurred and only if the Offering actually closes.

14. Notices. All notices and other communications required or permitted to be given under this Agreement shall be in writing and shall be deemed to have been duly given if (a) delivered personally, (b) sent by facsimile with immediate telephonic confirmation or (c) sent by registered or certified mail, return receipt requested, postage prepaid, to the parties hereto as follows

If to the Dealer-Manager:

Advisory Group Equity Services, Ltd.
doing business as RHK Capital
276 Post Road West
Westport, CT 06880
Attn.: Mr. Richard H. Kreger, Senior Managing Director, Investment Banking
Email: rkreger@rhk.capital

With a copy to:

Olshan Frome Wolosky LLP
1325 Avenue of the Americas
New York, NY 10019

Attn.: Spencer G. Feldman, Esq.
Email: sfeldman@olshanlaw.com
Facsimile: (212) 451-2222

If to the Company:

Heat Biologics, Inc.
801 Capitola Drive
Durham, NC 27713
Attn.: Mr. Jeffrey Wolf, Chairman & Chief Executive Officer
Email: jwolf@heatbio.com
Facsimile: (919) 240-7133

With a copy to:

Gracin & Marlow, LLP
The Chrysler Building
405 Lexington Avenue, 26th Floor
New York, NY 10174
Attn.: Leslie Marlow, Esq.
Email: lmarlow@gracinmarlow.com
Facsimile: (212) 208-4657

15. Parties. This Agreement shall inure to the benefit of and be binding upon the Dealer-Manager, the Company and their respective successors. This Agreement and the terms and provisions hereof are for the sole benefit of only those Persons, except that the representations, warranties, indemnities and agreements of the Company contained in this Agreement shall also be deemed to be for the benefit of the Person or Persons, if any, who control the Dealer-Manager within the meaning of Section 15 of the Act. Nothing in this Agreement shall be construed to give any Person, other than the Persons referred to in this Section, any legal or equitable right, remedy or claim under or in respect of this Agreement or any provision contained herein.

16. Amendment. This Agreement may not be amended or modified except in writing signed by each of the parties hereto.

17. Governing Law; Venue. This Agreement shall be deemed to have been executed and delivered in New York and both this Agreement and the transactions contemplated hereby shall be governed as to validity, interpretation, construction, effect, and in all other respects by the laws of the State of New York, without regard to the conflicts of laws principals thereof (other than Section 5-1401 of The New York General Obligations Law). Each of the Dealer-Manager and the Company: (a) agrees that any legal suit, action or proceeding arising out of or relating to this Agreement and/or the transactions contemplated hereby shall be instituted exclusively in the Supreme Court of the State of New York, New York County, or in the United States District Court for the Southern District of New York, (b) waives any objection which it may have or hereafter to the venue of any such suit, action or proceeding, and (c) irrevocably consents to the jurisdiction of Supreme Court of the State of New York, New York County, or in the United

States District Court for the Southern District of New York in any such suit, action or proceeding. Each of the Dealer-Manager and the Company further agrees to accept and acknowledge service of any and all process which may be served in any such suit, action or proceeding in the Supreme Court of the State of New York, New York County, or in the United States District Court for the Southern District of New York and agrees that service of process upon the Company mailed by certified mail to the Company's address or delivered by Federal Express via overnight delivery shall be deemed in every respect effective service of process upon the Company, in any such suit, action or proceeding, and service of process upon the underwriters mailed by certified mail to the Dealer-Manager's address or delivered by Federal Express via overnight delivery shall be deemed in every respect effective service process upon the Dealer-Manager, in any such suit, action or proceeding. THE COMPANY (ON BEHALF OF ITSELF AND, TO THE FULLEST EXTENT PERMITTED BY LAW, ON BEHALF OF ITS RESPECTIVE EQUITY HOLDERS AND CREDITORS) HEREBY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY CLAIM BASED UPON, ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT AND THE TRANSACTIONS CONTEMPLATED BY THIS AGREEMENT, THE REGISTRATION STATEMENT, ANY PRELIMINARY PROSPECTUS AND THE PROSPECTUS.

18. Entire Agreement. This Agreement, together with the exhibit attached hereto and as the same may be amended from time to time in accordance with the terms hereof, contains the entire agreement among the parties hereto relating to the subject matter hereof and there are no other or further agreements outstanding not specifically mentioned herein. Notwithstanding anything herein to the contrary, the Engagement Letter shall continue to be effective and the term therein shall continue to survive and be enforceable by the parties thereto, in accordance with its terms.

19. Assignment. Neither this Agreement nor any right or interest hereunder shall be assignable by the Company or the Dealer-Manager without the prior written consent of the other party hereto.

20. Severability. If any term or provision of this Agreement or the performance thereof shall be invalid or unenforceable to any extent, such invalidity or unenforceability shall not affect or render invalid or unenforceable any other provision of this Agreement and this Agreement shall be valid and enforced to the fullest extent permitted by law.

21. Headings. The headings herein are inserted for convenience of reference only and are not intended to be part of, or to affect the meaning or interpretation of, this Agreement.

22. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, but all such counterparts shall together constitute one and the same instrument. Delivery of a signed counterpart of this Agreement by facsimile or other electronic transmission shall constitute valid and sufficient delivery thereof. If the foregoing correctly sets forth your understanding, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement among us.

Very truly yours,

HEAT BIOLOGICS, INC.

By: _____
Name: Jeffrey Wolf
Title: Chairman & Chief Executive Officer

Accepted and agreed as of the date first written above:

ADVISORY GROUP EQUITY SERVICES, LTD.
doing business as RHK Capital

By: _____
Name: Richard H. Kreger
Title: Senior Managing Director, Investment Banking

[Signature Page to Dealer-Manager Agreement]

EXHIBIT A

1. The Company is incorporated and is validly existing as a corporation in good standing under the laws of the State of Delaware, with corporate power and authority to own, lease and operate its properties and conduct its business as described in the Registration Statement, the Offer Documents and the Prospectus and to enter into and perform its obligations under the Dealer-Manager Agreement and the Rights.
2. The Company's authorized capital consists of 100,000,000 shares of common stock, \$0.0002 par value per share, and 10,000,000 shares of preferred stock, \$0.0001 par value per share.
3. The Rights and Rights Shares to be issued and sold by the Company pursuant to the Registration Statement have been duly and validly authorized and, when issued and delivered to and paid for, will be duly and validly issued and fully paid and nonassessable and will conform to the descriptions thereof contained in the Registration Statement, the Offer Documents and the Prospectus; and the issuance of such Rights and Rights Shares is not subject to any preemptive or similar rights.
4. The Dealer-Manager Agreement has been duly authorized, executed and delivered by the Company and the Company has all the requisite corporate power and authority to enter into the Dealer-Manager Agreement and to perform their obligations thereunder.
5. The issue and sale of the Rights and Rights Shares to be sold by the Company pursuant to the Registration Statement, the execution of the Dealer-Manager Agreement by the Company and the compliance by the Company with all of the provisions of the Dealer-Manager Agreement and the consummation of the transactions therein contemplated will not conflict with or result in a breach or violation of any of the material terms or provisions of, or constitute a default under, any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument, included as an exhibit to the Registration Statement or as an exhibit to any other registration statement or report filed by the Company with the Commission, to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any of the property or assets of the Company or any of the Subsidiaries is subject, nor will such action result in any violation of the provisions of the certificate or articles of incorporation or by-laws (or other organizational documents) of the Company or any of its subsidiaries or, to our knowledge, result in any violation of any statute or any order, rule or regulation of any court or governmental agency or body having jurisdiction over the Company or any of its subsidiaries or any of their properties; and, to our knowledge, no consent, approval, authorization, order, registration or qualification of or with any such court or governmental agency or body is required for the issue and sale of the Rights and Rights Shares to be sold by the Company pursuant to the Registration Statement or the consummation by the Company of the transactions contemplated by the Dealer-Manager Agreement, except the registration under the Securities Act of the Rights and Rights Shares and such consents, approvals, authorizations, registrations or qualifications

as may be required under state securities or blue sky laws or NASDAQ rules, as to which we express no opinion.

6. Other than as set forth in the Registration Statement, the Offer Documents and the Prospectus, to our knowledge, there are no legal or governmental proceedings pending to which the Company or any of its subsidiaries is a party or of which any property of the Company or any of its subsidiaries is the subject which, if determined adversely to the Company or any of its subsidiaries, individually or in the aggregate, would have or may reasonably be expected to have a material adverse effect on the general affairs, business, prospects, management, financial position, shareholders' equity or results of operations of the Company and its subsidiaries, considered as one enterprise, or would prevent or impair the consummation of the transactions contemplated by the Dealer-Manager Agreement, or which are required to be described in the Registration Statement, the Offer Documents and the Prospectus; and, to our knowledge, no such proceedings are threatened or contemplated by governmental authorities or others.
7. The Company is not and, after giving effect to the offering and sale of the Rights and Rights Shares as contemplated herein and the application of the net proceeds therefrom as described in the Registration Statement, the Offer Documents and the Prospectus, will not be an "investment company," as such term is defined in the Investment Company Act of 1940.
8. The Registration Statement, including any Rule 462(b) Registration Statement, has been declared effective under the Securities Act; any required filing of the Prospectus pursuant to Rule 424(b) under the Securities Act has been made in the manner and within the time period required by Rule 424(b); all material required to be filed by the Company pursuant to Rule 433(d) under the Securities Act shall have been filed with the Commission within the applicable time period prescribed for such filing by Rule 433 under the Securities Act; and no stop order suspending the effectiveness or use of the Registration Statement, the Offer Documents and the Prospectus has been issued under the Securities Act and no proceedings for that purpose have been instituted or are pending or, to our knowledge, threatened by the Commission.
9. To our knowledge, there are no statutes or regulations that are required to be described in the Registration Statement, the Offer Documents and the Prospectus that are not described as required.
10. The Company has duly notified the Nasdaq Capital Market regarding the Rights Offering and no objection was raised by FINRA or the Nasdaq Capital Market.
11. The Registration Statement, the Offer Documents and the Prospectus and any further amendments and supplements thereto made by the Company (other than the financial statements, related schedules and other financial data therein, as to which we do not express an opinion), comply as to form in all material respects with the requirements of the Securities Act and the rules and regulations thereunder; and we do not know of any amendment to the Registration Statement, the Offer Documents and the Prospectus

required to be filed or of any contracts or other documents of a character required to be filed as an exhibit to the Registration Statement or required to be described in the Registration Statement, the Offer Documents and the Prospectus which are not filed or described as required.

12. The documents incorporated by reference in the Registration Statement, the Offer Documents and the Prospectus, or any further amendment or supplement thereto made by the Company (other than the financial statements and related schedules therein, as to which we express no opinion), when they became effective or were filed with the Commission, as the case may be, complied as to form in all material respects with the requirements of the Securities Act or the Exchange Act, as applicable, and the rules and regulations of the Commission thereunder.
13. To our knowledge, except as disclosed in the Prospectus, there are no contracts, agreements or understandings between the Company and any person granting such person the right to require the Company to file a registration statement under the Securities Act with respect to shares of Common Stock or other securities to include such shares of Common Stock or other securities as part of the offering contemplated hereby.

In addition, although we are not passing upon and do not assume any responsibility for nor have we independently verified, the accuracy, completeness or fairness of the statements contained in the Registration Statement, the Offer Documents and the Prospectus, in connection with the preparation of the Registration Statement, the Offer Documents and the Prospectus, we have participated in conferences with representatives and counsel of the Dealer-Manager and with certain officers and employees of, and counsel and independent registered public accountants for, the Company, at which conferences the contents of the Registration Statement, the Offer Documents and the Prospectus and related matters were discussed, and we advise the Dealer-Manager that nothing has come to our attention that would lead us to believe that:

- as of its effective date, the Registration Statement (other than the financial statements, related schedules and other financial data therein, as to which we do express no opinion), contained an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading,
- as of the Effective Time, the Offer Documents (other than the financial statements, related schedules and other financial data therein, as to which express no opinion) contain an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, or
- as of its date or as of the applicable time of delivery, the Prospectus (other than the financial statements, related schedules and other financial data therein, as to which we express no opinion) contained an untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

provided, however, that we do not assume any responsibility for the accuracy, completeness or fairness of the statements made or the information contained in, incorporated by reference in, or omitted from, the Registration Statement, the Offer Documents or the Prospectus, and we do not express any view or belief with respect to the financial statements and the related notes thereto or financial schedules or other financial, statistical or accounting data or information or assessments of or reports on the effectiveness of internal control over financial reporting included in, incorporated by reference in, or omitted from, the Registration Statement, the Offer Documents or the Prospectus.

The purpose of our engagement was not to establish or confirm factual matters set forth in the Registration Statement, the Offer Documents or the Prospectus, and we have not undertaken any obligation to verify independently any of the factual matters set forth in the Registration Statement, the Offer Documents or the Prospectus.



The Chrysler Building
405 Lexington Avenue, 26th Floor
New York, New York 10174
Telephone: (212) 907-6457
Facsimile: (212) 208-4657

October 10, 2017

The Board of Directors
Heat Biologics, Inc.
801 Capitola Drive
Durham, NC 27713

Re: Registration Statement on Form S-1 (File No. 333-220470)

Gentlemen:

We have acted as counsel to Heat Biologics, Inc., a Delaware corporation (the “Company”), in connection with the Company’s preparation and filing with the Securities and Exchange Commission (the “Commission”) of a registration statement on Form S-1 (File No. 333-220470) (the “Registration Statement”) under the Securities Act of 1933, as amended (the “Securities Act”). The Registration Statement relates to the issuance by the Company of (i) non-transferable subscription rights (the “Rights”) entitling the holders thereof to purchase shares of common stock, par value \$0.0002 per share, of the Company (the “Common Stock”) to be distributed by the Company without consideration in connection with the Company’s rights offering to holders of record of Common Stock and holders of the Company’s warrants (“Warrants”), in each case as owned on the record date, as more fully set forth within the Registration Statement, including amendments thereto, and (ii) up to 15,000,000 shares of Common Stock issuable upon exercise of the Rights (the “Rights Shares”).

This opinion is being furnished in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act in connection with the filing of the Registration Statement.

In connection with rendering this opinion, we have examined or are familiar with the charter documents of the Company, the corporate proceedings with respect to the authorization of the Registration Statement and the rights offering described therein, and such other certificates, instruments and documents as we have considered necessary or appropriate for purposes of this opinion. In such examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, conformity to the original documents of all documents submitted to us as copies and the authenticity of the originals of such latter documents. As to any facts material to our opinion, we have, when relevant facts were not independently established, relied upon the Registration Statement and the aforesaid records, certificates and documents. We have made such examination as we have deemed necessary for the purpose of this opinion.

The Board of Directors
Heat Biologics, Inc.
October 10, 2017
Page 2

On the basis of, and in reliance on, the foregoing examination and subject to the assumptions, exceptions, qualifications, and limitations contained herein, we are of the opinion that:

(1) The issuance of the Rights has been duly authorized and, when the Rights are issued to holders of Common Stock and Warrants as contemplated in the Registration Statement, such Rights will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms, except to the extent that enforcement thereof may be limited by (a) bankruptcy, insolvency, reorganization, fraudulent conveyance, moratorium or other similar laws now or hereafter in effect relating to creditors' rights generally, and (b) general principles of equity (regardless of whether enforceability is considered in a proceeding at law or in equity).

(2) The issuance and sale of the Rights Shares upon exercise of the Rights have been duly authorized and, when issued upon exercise of the Rights in the manner and on the terms described in the Registration Statement, including receipt of the requisite consideration set forth therein, will be validly issued, fully paid and non-assessable.

We are members of the bar of the State of New York, and do not express any opinion herein concerning any law other than the Delaware General Corporation Law and applicable reported judicial decisions. This opinion letter has been prepared for use in connection with the Registration Statement. We assume no obligations to advise you of any change in the foregoing subsequent to the delivery of this opinion letter.

We hereby consent to the filing of this opinion with the Commission as Exhibit 5.1 to the Registration Statement and to the reference to us under the heading "Legal Matters" in the prospectus included in the Registration Statement. In giving such consent, we do not admit that we come within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules or regulations of the Commission thereunder.

Very truly yours,

/s/ Gracin & Marlow, LLP

Gracin & Marlow, LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Amendment No. 1 to the Registration Statement (File No. 333-220470) of our report dated March 31, 2017, relating to the consolidated financial statements of Heat Biologics, Inc. (the “Company”), which is incorporated by reference in that Prospectus. Our report contains an explanatory paragraph regarding the Company’s ability to continue as a going concern.

We also consent to the reference to us under the caption “Experts” in the Prospectus.

/s/ BDO USA, LLP

Raleigh, North Carolina
October 10, 2017

Consent of Independent Auditor

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Amendment No. 1 to the Registration Statement (File No. 333-220470) of our report, dated July 10, 2017, relating to the financial statements of Pelican Therapeutics, Inc., which is incorporated by reference in that Prospectus. Our report contains an explanatory paragraph regarding Pelican Therapeutics, Inc.'s ability to continue as a going concern.

We also consent to the reference to us under the caption "Experts" in the Prospectus.

/s/ BDO USA, LLP

Raleigh, North Carolina
October 10, 2017