

As filed with the Securities and Exchange Commission on December 21, 2016

Registration No. 333-214868

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

Amendment No. 1 to
FORM S-3
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)*

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 President
Heat Biologics, Inc.
801 Capitola Drive
Durham, North Carolina 27713
(919) 240-7133**
(Name, Address, Including Zip Code, and Telephone Number, Including Area Code of Agent for Service)

With copies to:

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

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

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

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

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

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

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

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/> (Do not check if a smaller reporting company)	Smaller reporting company	<input checked="" type="checkbox"/>

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee (4)
Common Stock, \$0.0002 par value per share issuable upon exercise of warrants	3,020,084(1)(2)	\$1.00(3)	\$3,020,084	\$351.00
Total	3,020,084	\$1.00	\$3,020,084	\$351.00

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the “Securities Act”), this registration statement also covers such additional shares as may hereafter be offered or issued to prevent dilution resulting from stock splits, stock dividends, recapitalizations or certain other capital adjustments.
- (2) Represents shares of common stock underlying warrants issued to investors in our previous follow-on offering.
- (3) Estimated solely for purposes of calculating the registration fee in accordance with Rule 457(g) of the Securities Act based on the per share exercise price of the warrants, which is \$1.00.
- (4) Previously paid.

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 that specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to Completion, dated December 21, 2016.

PROSPECTUS



**3,020,084 Shares of Common Stock Issuable Upon
Exercise of Outstanding Warrants**

This prospectus relates to the offer and sale by us of 3,020,084 shares of our common stock, par value \$0.0002 per share, that are issuable at an exercise price of \$1.00 per share from time to time upon the exercise of outstanding warrants that we issued in March 2016 as part of a follow-on public offering. We will receive the proceeds from any cash exercises of the outstanding warrants. Each warrant is exercisable at any time until its expiration date, which date is five years from the date of issuance of the warrant. Upon exercise all of these outstanding warrants, we will receive aggregate proceeds of \$3,020,084. No securities are being offered pursuant to this prospectus other than the shares of our common stock that will be issued upon exercise of the outstanding warrants.

Our common stock is listed on the NASDAQ Capital Market under the symbol "HTBX." On December 20, 2016, the last reported sale price of our common stock on the NASDAQ Capital Market was \$0.77 per share.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE "RISK FACTORS" ON PAGE 3 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE DOCUMENTS INCORPORATED BY REFERENCE INTO THIS PROSPECTUS CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

Neither the Securities and Exchange Commission 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.

The date of this prospectus is _____, 2016

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You should rely only on the information we have provided or incorporated by reference in this prospectus or in any prospectus supplement. We have not authorized anyone to provide you with information different from that contained or incorporated by reference in this prospectus or in any prospectus supplement. This prospectus and any prospectus supplement is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information contained in this prospectus and in any prospectus supplement is accurate only as of their respective dates and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any prospective supplement or any sale of securities. The registration statement, including the exhibits and the documents incorporated herein by reference, can be read on the Securities and Exchange Commission website or at the Securities and Exchange Commission offices mentioned under the heading “Where You Can Find More Information.”

ABOUT THIS PROSPECTUS

This prospectus is not an offer or solicitation in respect to these securities in any jurisdiction in which such offer or solicitation would be unlawful. This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (the “SEC”). The registration statement that contains this prospectus (including the exhibits to the registration statement) contains additional information about our company and the securities offered under this prospectus. That registration statement can be read at the SEC website or at the SEC’s offices listed under the heading “Where You Can Find More Information.” We have not authorized anyone else to provide you with different information or additional information. You should not assume that the information in this prospectus, or any supplement or amendment to this prospectus, is accurate at any date other than the date indicated on the cover page of such documents.

Unless otherwise stated or the context otherwise requires, references in this prospectus to “Heat,” the “Company,” “we,” “our” and “us” refer to Heat Biologics, Inc., a Delaware corporation and its consolidated subsidiaries, unless otherwise specified. When we refer to “you,” we mean the holders of the applicable series of securities.

PROSPECTUS SUMMARY

The items in the following summary are described in more detail elsewhere in this prospectus and in the documents incorporated by reference herein. This summary provides an overview of selected information and does not contain all the information you should consider before investing in our securities. Therefore, you should read the entire prospectus and any free writing prospectus that we have authorized for use in connection with this offering carefully, including the “Risk Factors” section and other documents or information included or incorporated by reference in this prospectus before making any investment decision.

Overview

We are an immuno-oncology company developing novel therapies intended to activate a patient’s immune system to fight cancer. Using our T cell-stimulating platform technologies, *ImPACT*® (Immune Pan-Antigen Cytotoxic Therapy) and *ComPACT*™ (Combination Pan-Antigen Cytotoxic Therapy), we have generated several product candidates that we believe may be effective in treating certain forms of cancer. Our platform technologies address two synergistic mechanisms of action: activation of CD8+ T cells, or “killer” T cells; and T cell co-stimulation. We believe the use of these technologies has the potential to enhance patients’ natural immune response against certain cancers.

Using our *ImPACT*® platform technology, we have developed product candidates that consist of live, genetically-modified, irradiated human cancer cells which secrete a broad spectrum of tumor-associated antigens (“TAAs”) together with a potent immune response stimulator called “gp96.” The secreted antigen-gp96/TAA complexes activate a patient’s immune system to recognize and kill cancer cells that express the TAAs included in the product candidates, which we have engineered to address the most prevalent TAAs present in the “tumor signature” of a specific cancer.

Our *ComPACT*™ platform technology enables us to combine a pan-antigen T cell-activating vaccine 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. Using *ComPACT*™, we have engineered new product candidates that incorporate various ligand fusion proteins targeting co-stimulatory receptors (OX40, ICOS, 4-1BB) into the gp96-Ig expression vector, resulting in a single product candidate that includes both a pan-antigen T cell-priming vaccine and a T cell co-stimulator.

Using our platform technologies, we produce product candidates from allogeneic cell lines selected to express the broadest array of commonly shared tumor antigens for a specified type of cancer. Unlike autologous or “personalized” therapeutic vaccine approaches that require the extraction of blood or tumor tissue from each patient and the creation of an individualized treatment, our product candidates are fully allogeneic, do not require extraction of an 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 one-off, patient-specific approaches.

Recent Developments

On November 30, 2016, we announced that we presented topline data from our 94-patient Phase II trial evaluating HS-410 (vesigenurtacel-L) in combination with standard of care, Bacillus Calmette-Guérin (BCG), for the treatment of non-muscle invasive bladder cancer at the Society of Urology Annual Meeting, in San Antonio, TX. Researchers reported that there were encouraging signs of anti-tumor activity as HS-410 generated a robust antigen-specific immune response to multiple tumor-associated peptides in treated patients, while there were no immune responses of this type in the placebo. However, these responses did not translate into clinical outcomes, and there was no statistically significant difference in the primary endpoint (proportion of recurrence-free survival at one year) between the vaccine and placebo arms of the trial. To better assess the durability of the positive immunological responses, and in keeping with clinical trial guidance recently issued by International Bladder Cancer Group (“IBCG”) ¹ recommending a 2-year study duration for NMIBC trials, Heat will continue to monitor all patients enrolled in the study for an additional 12 months. At that time Heat will make a final determination on whether to progress its bladder program into a Phase 3 trial.

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, NC 27713. Our website address is www.heatbio.com. The information contained in, and that can be accessed through, our website is not incorporated into and is not a part of this prospectus.

¹ Definitions, End Points, and Clinical Trial Designs for Non-Muscle-Invasive Bladder Cancer: Recommendations from the International Bladder Cancer Group, *Journal of Clinical Oncology*, 34(16):1935-44, June, 2016.



THE OFFERING

Common stock offered by us pursuant to this prospectus	3,020,084 shares of common stock issuable upon the exercise of the outstanding warrants issued to the investors in connection with our March 2016 follow-on public offering, which warrants are exercisable on the fifth anniversary of the original issuance date (March 23, 2021) at an exercise price of \$1.00 per share.
Common stock to be outstanding after this offering if all of the warrants are exercised	28,733,680 shares.
Use of Proceeds	<p>We intend to use the net proceeds of this offering to fund our clinical trials and for working capital and general corporate purposes as well as licensing or acquisition of assets complementary to our business. See “Use of Proceeds” for further information.</p> <p>The net proceeds from any disposition of the shares of common stock covered hereby would be received by the investors selling such shares. We will not receive any of the proceeds from any such sale of the common stock offered by this prospectus other than the net proceeds of any warrants exercised for cash.</p>
Risk Factors	See “Risk Factors” beginning on page 3 of this prospectus and the other information included in, or incorporated by reference into, this prospectus for a discussion of certain factors you should carefully consider before deciding to invest in shares of our common stock.
NASDAQ Capital Market symbol	“ HTBX ”

The number of shares of common stock shown above to be outstanding after this offering is based on 25,713,596 shares outstanding as of November 29, 2016, and excludes:

- 1,172,533 shares of our common stock issuable upon exercise of outstanding options under our equity incentive plans as of November 29, 2016, at a weighted-average exercise price of \$3.84 per share;
- 142,392 shares of our common stock reserved for issuance upon the exercise of outstanding warrants as of November 29, 2016, with a weighted-average exercise price of \$11.03 per share; and
- 2,390,450 shares of our common stock which are reserved for equity awards that may be granted under our equity incentive plans as of November 29, 2016.

RISK FACTORS

You should consider carefully the risks discussed under the section captioned “Risk Factors” contained in our annual report on Form 10-K for the year ended December 31, 2015 and in our subsequent quarterly reports on Form 10-Q, as updated by our subsequent filings under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), each of which is incorporated by reference in this prospectus in its entirety, together with other information in this prospectus, and the information and documents incorporated by reference in this prospectus, and any free writing prospectus that we have authorized for use in connection with this offering before you make a decision to invest in our common stock. If any of these events actually occur, our business, operating results, prospects or financial condition could be materially and adversely affected. This could cause the trading price of our common stock to decline and you may lose all or part of your investment.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Some of the statements contained or incorporated by reference in this prospectus may include forward-looking statements that reflect our current views with respect to our ongoing and planned clinical trials, business strategy, business plan, financial performance and other future events. These statements include forward-looking statements both with respect to us, specifically, and the biotechnology sector, in general. We make these statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Statements that include the words expect,” “intend,” “plan,” “believe,” “project,” “estimate,” “may,” “should,” “anticipate,” “will” and similar statements of a future or forward-looking nature identify forward-looking statements for purposes of the federal securities laws or otherwise.

All forward-looking statements involve inherent risks and uncertainties, and there are or will be important factors that could cause actual results to differ materially from those indicated in these statements. We believe that these factors include, but are not limited to, those factors set forth under the caption “Risk Factors” in this prospectus and under the captions “Risk Factors,” “Business,” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” in our most recent Annual Report on Form 10-K and our subsequent Quarterly Reports on Form 10-Q, all of which you should review carefully. Please consider our forward-looking statements in light of those risks as you read this prospectus supplement and the accompanying prospectus. We undertake no obligation to publicly update or review any forward-looking statement, whether as a result of new information, future developments or otherwise.

If one or more of these or other risks or uncertainties materializes, or if our underlying assumptions prove to be incorrect, actual results may vary materially from what we anticipate. All subsequent written and oral forward-looking statements attributable to us or individuals acting on our behalf are expressly qualified in their entirety by this Note. Before purchasing any shares of common stock, you should consider carefully all of the factors set forth or referred to in this prospectus that could cause actual results to differ.

USE OF PROCEEDS

If all of the outstanding warrants are exercised, we estimate that the net proceeds of this offering will be approximately \$3.0 million.

The net proceeds from any disposition of the shares of common stock covered hereby would be received by the investors selling such shares. We will not receive any of the proceeds from any such sale of the common stock offered by this prospectus other than the net proceeds of any warrants exercised for cash.

We intend to use the net proceeds of this offering to continue to fund our clinical trials and for working capital and general corporate purposes as well as licensing or acquisition of assets complementary to our business.

The amounts and timing of our actual expenditures will depend on numerous factors, including our development and commercialization efforts, as well as the amount of cash used in our operations. We therefore cannot estimate with certainty the amount of net proceeds to be used for the purposes described above. We may find it necessary or advisable to use the net proceeds for other purposes, and we will have broad discretion in the application of the net proceeds. Pending the uses described above, we plan to invest the net proceeds from this offering in short-term, investment-grade, interest-bearing securities.

DILUTION

If you invest in our common stock, your interest will be diluted immediately to the extent of the difference between the exercise price and the adjusted net tangible book value per share of our common stock after this offering.

Our pro forma net tangible book value on September 30, 2016 was approximately \$9,635,595, or \$0.37 per share after giving effect to the issuances of 3,503,469 shares of common stock for which we received \$4,494,463 from October 1, 2016 through November 29, 2016. "Net tangible book value" is total assets minus the sum of liabilities and intangible assets. "Net tangible book value per share" is net tangible book value divided by the total number of shares outstanding.

After giving effect to the issuance of the common stock to investors exercising warrants for cash at \$1.00 per share, our pro forma as adjusted net tangible book value as of September 30, 2016 would have been approximately \$12,645,679 or \$0.44 per share of common stock. This represents an immediate increase in net tangible book value of \$0.07 per share to our existing stockholders and an immediate dilution in net tangible book value of \$0.56 per share to investors exercising the warrants at a price of \$1.00 per share. The following table illustrates this dilution per share to investors participating in this offering:

Exercise price per share		\$	1.00
Pro forma net tangible book value per share as of September 30, 2016		\$	0.37
Increase in pro forma net tangible book value per share attributable to new investors in this offering		\$	0.07
Pro forma as adjusted net tangible book value per share after giving effect to this offering		\$	0.44
Dilution per share to new investors		\$	0.56

The above discussion and table are based on shares of our common stock issued and outstanding as of September 30, 2016, which does not include the following, all as of September 30, 2016:

- 1,219,847 of our common stock issuable upon exercise of outstanding options under our equity incentive plans, at a weighted-average exercise price of \$4.09 per share;
- 142,392 shares of our common stock reserved for issuance upon the exercise of outstanding warrants, with a weighted-average exercise price of \$11.03 per share; and
- 2,343,136 shares of our common stock which are reserved for equity awards that may be granted under our stock option plan.

DIVIDEND POLICY

We have never paid cash dividends on our common stock. Moreover, we do not anticipate paying periodic cash dividends on our common stock for the foreseeable future. We intend to use all available cash and liquid assets in the operation and growth of our business. Any future determination about the payment of dividends will be made at the discretion of our board of directors and will depend upon our earnings, if any, capital requirements, operating and financial conditions and on such other factors as our board of directors deems relevant.

DESCRIPTION OF OUR SECURITIES

General

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

We are authorized to issue 50,000,000 shares of common stock, par value \$0.0002 per share, of which 25,713,596 shares are outstanding as of November 29, 2016 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.

In addition, on March 23, 2016, we issued warrants exercisable for an aggregate of 6,825,000 shares of our common stock at an exercise price of \$1.00 per share. As of November 29, 2016, of the 6,825,000 warrants issued on March 23, 2016 to acquire 6,825,000 shares of our common stock, we had outstanding an aggregate of 3,020,084 warrants to acquire an aggregate of 3,020,084 shares of our common stock.

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 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.

Warrants

The following summary of certain terms and provisions of the warrants is not complete and is subject to, and qualified in its entirety by, the provisions of the warrant, the form of which has been filed as an exhibit to the registration statement used to offer and sell the warrants. Investors should carefully review the terms and provisions of the form of warrant for a complete description of the terms and conditions of the warrants.

Duration and Exercise Price

Each warrant has an exercise price of \$1.00 per share. The warrants were immediately exercisable and expire on March 23, 2021 (the fifth anniversary of the original issuance date). The warrants were issued separately from our common stock. The Warrants were issued in certificated form only.

Exercisability

The warrants are exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the warrant to the extent that the holder would own more than 4.99% of the outstanding common stock after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrants.

Cashless Exercise

If, at the time a holder exercises its warrant, there is no effective registration statement registering, or the prospectus contained therein is not available for an issuance of the shares underlying the warrant to the holder, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of our common stock determined according to a formula set forth in the warrant.

Anti-Dilution Protection

The warrant provides that the exercise price is subject to adjustment in the event of stock splits, reverse stock splits and the like.

Fundamental Transactions

In the event of any fundamental transaction, as described in the warrants and generally including any merger with or into another entity, sale of all or substantially all of our assets, tender offer or exchange offer, or reclassification of our common stock, the holder will have the right to have such warrants and all obligations and rights thereunder assumed by the successor or acquiring corporation.

Transferability

Subject to applicable laws and the restriction on transfer set forth in the warrant, the warrant may be transferred at the option of the holder upon surrender of the warrant to us together with the appropriate instruments of transfer.

No Listing

There is no established trading market for the warrants and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the warrants will be limited.

Right as a Shareholder

Except as otherwise provided in the warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their warrants.

Waivers and Amendments

Subject to certain exceptions, any term of the warrants may be amended or waived with our written consent and the written consent of the holders of at least a majority of the then-outstanding warrants.

PLAN OF DISTRIBUTION

The common stock referenced on the cover page of this prospectus will be offered solely by us and will be issued and sold upon the exercise of the outstanding warrants issued in March 2016 described herein. We will deliver shares of our common stock upon exercise of the warrants, however, no fractional shares will be issued. The warrants are exercisable for a total of 3,020,084 shares of our common stock (subject to adjustment), and no more of these warrants will be issued by us. Each of these warrants contains instructions for exercise. In order to exercise any of these warrants, the holder must deliver to us or our transfer agent the information required in the warrants, along with payment for the exercise price of the shares of common stock to be purchased.

LEGAL MATTERS

The validity of the issuance of the securities offered hereby have been passed upon for us by Gracin & Marlow, LLP, New York, New York.

EXPERTS

The financial statements as of December 31, 2015 and December 31, 2014 and for each of the two years in the period ended December 31, 2015 incorporated by reference in this Prospectus have been so incorporated in reliance on the report of BDO USA, LLP, an independent registered public accounting firm, incorporated herein by reference, 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.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission. You may read and copy any document we file at the SEC's public reference room located at 100 F Street N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference room. Our public filings are also available to the public at the SEC's web site at www.sec.gov.

This prospectus is part of a registration statement on Form S-3 that we have filed with the SEC under the Securities Act. This prospectus does not contain all of the information in the registration statement. We have omitted certain parts of the registration statement, as permitted by the rules and regulations of the SEC. You may inspect and copy the registration statement, including exhibits, at the SEC's public reference room or Internet site.

Additional information about Heat Biologics, Inc. is contained at our website, www.heatbiologics.com. Information on our website is not incorporated by reference into this report. We make available on our website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K as soon as reasonably practicable after those reports are filed with the SEC. The following Corporate Governance documents are also posted on our website: Code of Ethics and the Charters for the Audit Committee, Compensation Committee and Nominating and Governance Committee of the Board of Directors.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" the information we 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 information incorporated by reference is considered to be part of this prospectus, and 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 between the date of this prospectus and the termination of the offering, including all such documents that we may file with the SEC pursuant to the Exchange Act after the date of this registration statement and prior to the effectiveness of this registration statement; however, we are not incorporating by reference any documents or portions thereof, whether specifically listed below or filed in the future, 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 fiscal year ended December 31, 2015 filed with the SEC on February 18, 2016;
- Our quarterly report on Form 10-Q for the quarter ended March 31, 2016 filed with the SEC on May 11, 2016;
- Our quarterly report on Form 10-Q for the quarter ended June 30, 2016 filed with the SEC on August 15, 2016;
- Our quarterly report on Form 10-Q for the quarter ended September 30, 2016 filed with the SEC on November 10, 2016;
- Our current reports on Form 8-K filed with the SEC on January 15, 2016, February 23, 2016, February 25, 2016, March 3, 2016, March 18, 2016, March 24, 2016, April 7, 2016, April 25, 2016, May 3, 2016, July 1, 2016, July 21, 2016, August 15, 2016, August 18, 2016, October 6, 2016, December 1, 2016, December 6, 2016 and December 9, 2016;
- Our Definitive Proxy Statement on Schedule 14A filed with the SEC on May 26, 2016; and
- The description of our common stock set forth in our registration statement on Form 8-A12B, 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
Durham, North Carolina 27713
(919) 240-7133

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated fees and expenses in connection with the shelf registration of the common stock registered under this registration statement. The actual amounts of such fees and expenses will be determined from time to time. All amounts shown are estimates except for the Securities and Exchange Commission (the “SEC”) registration fee.

SEC registration fee	\$ 351
Legal fees and expenses	3,500
Accounting fees and expenses	3,500
Transfer agent and registrar fees and expenses	2,000
Miscellaneous	649
Total	\$ 10,000

Item 15. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation’s board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities, including reimbursement for expenses incurred, arising under the Securities Act of 1933, as amended (the “Securities Act”).

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

Item 16. Exhibits.

3.1	Certificate of Incorporation (Incorporated by reference to Exhibit 3.1 of our Form S-1 (File No. 333-188365) filed with the Securities and Exchange Commission on May 6, 2013)
3.2	Amended and Restated Bylaws, as currently in effect (Incorporated by reference to Exhibit 3.2 of our Form S-1 (File No. 333-188365) filed with the Securities and Exchange Commission on May 6, 2013)
3.3	Third Amended and Restated Certificate of Incorporation (Incorporated by reference to Exhibit 3.5 of our Form S-1 (File No. 333-188365) filed with the Securities and Exchange Commission on May 6, 2013)
3.4	Certificate of Amendment to the Third Amended and Restated Certificate of Incorporation (Incorporated by reference to Exhibit 3.6 of our Form S-1/A (File No. 333-188365) filed with the Securities and Exchange Commission on May 30, 2013)
4.1	Specimen stock certificate evidencing the shares of common stock (Incorporated by reference to Exhibit 4.8 of our Form S-1 (File No. 333-188365) filed with the Securities and Exchange Commission on May 6, 2013)
4.2	Form of Warrant to purchase shares of common stock (Incorporated by reference to Exhibit 4.15 of our Form S-1 (File No. 333-209079) filed with the Securities and Exchange Commission on March 15, 2016)
5.1**	Legal opinion of Gracin & Marlow, LLP
23.1 *	Consent of Independent Registered Public Accounting Firm - BDO USA, LLP
23.2**	Consent of Gracin & Marlow, LLP (included in Exhibit 5.1)
24.1**	Powers of Attorney for our directors (included on signature page)

* Filed herewith

** Previously filed with the SEC on December 1, 2016

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;

(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 SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement; *provided, however*, that the undertakings set forth in paragraphs (1)(i), (1)(ii) and (1)(iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC 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 or is contained in a form of prospectus filed pursuant to Rule 424(b) that is a part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, 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 of 1933 to any purchaser:

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

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; and

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

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

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

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

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

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

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 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) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers, and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 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 of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Amendment No. 1 to the registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Durham, State of North Carolina, December 21, 2016.

HEAT BIOLOGICS, INC.

By: /s/ Jeffrey Wolf
Chief Executive Officer,
President and Director
(Principal Executive Officer)

By: /s/ Ann Rosar
Vice President of Finance
(Principal Financial and
Accounting Officer)

Pursuant to the requirements of the Securities Act 1933, as amended, this Amendment No. 1 to the registration statement has been signed by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>/s/ Jeffrey Wolf</u> Jeffrey Wolf	Chief Executive Officer, President and Chairman (Principal Executive Officer)	December 21, 2016
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<u>/s/ Ann Rosar</u> Ann Rosar	Vice President of Finance (Principal Financial and Accounting Officer)	December 21, 2016
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<u>*</u> John Monahan, PhD.	Director	December 21, 2016
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<u>*</u> John K.A. Prendergast, Ph.D.	Director	December 21, 2016
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<u>*</u> Edward B. Smith, III	Director	December 21, 2016
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*By: /s/ Jeffrey Wolf
Jeffrey Wolf
Attorney-in-Fact

Consent of Independent Registered Public Accounting Firm

Heat Biologics, Inc.
Durham, North Carolina

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Amendment No. 1 to the Registration Statement on Form S-3 of our report dated February 18, 2016, relating to the consolidated financial statements of Heat Biologics, Inc. appearing in the Company's Annual Report on Form 10-K for the year ended December 31, 2015. 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

December 21, 2016