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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (date of earliest event reported): **May 20, 2021**

Heat Biologics, Inc.

(Exact name of registrant as specified in charter)

Delaware
(State or other jurisdiction of incorporation)

001-35994	**26-2844103**
(Commission File Number)	*(IRS Employer Identification No.)*

627 Davis Drive, Suite 400
Morrisville, North Carolina 27560
(Address of principal executive offices and zip code)

(919) 240-7133
(Registrant's telephone number including area code)

N/A
(Former Name and Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12(b) under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.0002 par value per share	HTBX	The Nasdaq Stock Market (The Nasdaq Capital Market)

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☐

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

Item 7.01. Regulation FD Disclosure.

On May 20, 2021, Heat Biologics, Inc. (the "Company") issued a press release announcing that an abstract with interim data from the Company's Phase 2 study of HS-110 in combination with nivolumab for the treatment of advanced non-small cell lung cancer has been accepted for poster presentation at the 2021 American Society of Clinical Oncology (ASCO) Annual Meeting, to be held virtually from June 4-8, 2021. At the 2021 ASCO Annual Meeting, the Company will be presenting a poster entitled "Interim results of viagenpumatucel-L (HS-110) plus nivolumab in previously treated patients (pts) with advanced non-small cell lung cancer (NSCLC) in two treatment settings" (the "Abstract").

A copy of the press release is furnished as Exhibit 99.1 to this Current Report on Form 8-K. A copy of the Abstract is attached hereto as Exhibit 99.2 and is incorporated herein by reference.

The furnishing of the attached Abstract is not an admission as to the materiality of any information therein. The information contained in the Abstract is summary information that is intended to be considered in the context of more complete information included in the Company's filings with the SEC and other public announcements that the Company has made and may make from time to time by press release or otherwise.

The information in this Item 7.01 and in the press release attached as Exhibit 99.1 to this Current Report on Form 8-K shall not be deemed to be "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that section or Sections 11 and 12(a)(2) of the Securities Act of 1933, as amended. The information contained in this Item 7.01 and in the press release attached as Exhibit 99.1 to this Current Report on Form 8-K shall not be incorporated by reference into any filing with the U.S. Securities and Exchange Commission made by the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

The press release attached as Exhibit 99.1 to this Current Report on Form 8-K includes "safe harbor" language pursuant to the Private Securities Litigation Reform Act of 1995, as amended, indicating that certain statements contained therein are "forward-looking" rather than historical.

The Company undertakes no duty or obligation to update or revise the information contained in this Current Report on Form 8-K, although it may do so from time to time if its management believes it is appropriate. Any such updating may be made through the filing of other reports or documents with the Securities and Exchange Commission, through press releases or through other public disclosures.

Item 8.01. Other Events.

On May 20, 2021, the Company announced that an abstract entitled "Interim results of viagenpumatucel-L (HS-110) plus nivolumab in previously treated patients (pts) with advanced non-small cell lung cancer (NSCLC) in two treatment settings" (the "Abstract") has been accepted for poster presentation at the 2021 ASCO Annual Meeting. In a cohort of previously treated, checkpoint inhibitor naïve patients with advanced NSCLC (cohort A, N = 47), the Company observed longer progression free survival (PFS) and overall survival (OS) in patients with injection site reactions (ISR) (hazard ratio [HR]=0.43, p=0.01; HR=0.23, p<0.001) and longer OS in patients with PD-L1 expression level ≥ 1% (HR 0.25, p=0.02). In patients who progressed after checkpoint inhibitor treatment (cohort B, N = 68), the Company observed longer OS in ISR+ patients (HR=0.48, p=0.03) and a trend toward extended OS in patients with baseline blood tumor mutational burden <10 mutations/ megabase (HR=0.58, p=0.20). HS-110 treatment emergent adverse events (TEAEs) were reported in 21 (44.7%) patients in cohort A and 18 (26.5%) patients in cohort B. TEAEs reported in >5% of patients included fatigue, maculopapular rash, nausea, diarrhea, and pruritus. Few HS-110–related TEAEs led to discontinuation of treatment [cohort A, 5 (10.6%); cohort B, 3 (4.4%)], and no serious adverse events were considered related to HS-110 in this study. A copy of the Abstract is attached as Exhibit 99.2 to this Current Report on Form 8-K.

In addition, the Company also updated its corporate presentation, to among other things, include the updated data from the Abstract that was presented at the 2021 ASCO Annual Meeting. A copy of the corporate presentation is attached hereto as Exhibit 99.3 and is incorporated herein by reference.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

The following exhibits are furnished with this Current Report on Form 8-K.

Exhibit Number	Exhibit Description
99.1	Heat Biologics, Inc. Press Release
99.2	Abstract “Interim results of viagenpumatucel-L (HS-110) plus nivolumab in previously treated patients (pts) with advanced non-small cell lung cancer (NSCLC) in two treatment settings. ”
99.3	Investor Presentation of Heat Biologics, Inc. dated May 2021

SIGNATURES

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

Dated: May 20, 2021

HEAT BIOLOGICS, INC.

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

EXHIBIT 99.1

Heat Biologics Announces Promising Survival Data of HS-110 in Two Treatment Settings of Lung Cancer; Selected for Presentation at 2021 American Society of Clinical Oncology Annual Meeting

DURHAM, NC – May 20, 2021 – Heat Biologics, Inc. (Nasdaq: HTBX), a clinical-stage biopharmaceutical company focused on developing first-in-class therapies to modulate the immune system, today announced that the latest data from HS-110, the Company's lead product, has been accepted for poster presentation at the 2021 American Society of Clinical Oncology (ASCO) Annual Meeting, to be held virtually from June 4-8, 2021. The ASCO Annual Meeting is the largest international conference to showcase the latest advancements in oncology.

Abstract Title: Interim results of viagenpumatucel-L (HS-110) plus nivolumab in previously treated patients (pts) with advanced non-small cell lung cancer (NSCLC) in two treatment settings

Session Title: Poster Session: Lung Cancer—Non-Small Cell Metastatic

Abstract Number: 9100

Lead Author and Presenter: Roger B. Cohen, MD, Perelman School of Medicine at the University of Pennsylvania

According to ASCO, more than 5,400 abstracts were reviewed for the 2021 ASCO Annual Meeting. Additional information about the conference may be accessed at https://conferences.asco.org/am/attend.

About HS-110

HS-110 is a first-in-class, off-the-shelf, allogeneic cell therapy designed to utilize gp96 for immune activation against multiple tumor testis antigens. Phase 2 trial of HS-110 in combination with Bristol-Myers Squibb's (BMS) OPDIVO® (nivolumab) has completed enrollment in patients with incurable or metastatic NSCLC. OPDIVO® is a programmed death-1 immune checkpoint inhibitor (PD-1 inhibitor). HS-110 has broad potential for providing multiple treatment options to NSCLC patients in combination with a PD-1 inhibitor. Positive interim survival data has been demonstrated in two distinct treatment settings in previously treated NSCLC patients who have not been treated with PD-1 inhibitor or programmed death-ligand 1 inhibitor (PD-L1 inhibitor) as well as patients who have progressed during or after previous treatment with a PD-1 or PD-L1 [PD-(L)1] inhibitor. Combination of HS-110 and PD-(L)1 therapies may confer additional survival benefit.

About Heat Biologics, Inc.
Heat Biologics is a biopharmaceutical company focused on developing first-in-class therapies to modulate the immune system. Heat's gp96 platform is designed to activate immune responses against cancer or infectious diseases. The Company has multiple product candidates in development leveraging the gp96 platform, including HS-110, which has completed enrollment in its Phase 2 trial, and a COVID-19 vaccine program in preclinical development. In addition, Heat Biologics is also developing a pipeline of proprietary immunomodulatory antibodies and cell-based therapies, including PTX-35 and HS-130 in Phase 1 clinical trials.

Forward Looking Statement
This press release includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 on our current expectations and projections about future events. In some cases, forward-looking statements can be identified by terminology such as "may," "should," "potential," "continue," "expects," "anticipates," "intends," "plans," "believes," "estimates," and similar expressions. These statements are based upon current beliefs, expectation, and assumptions and include statements such as the broad potential of HS-110 for providing multiple treatment options to NSCLC patients in combination with a PD-1 inhibitor. These statements are subject to a number of risks and uncertainties, many of which are difficult to predict, the ability of Heat's therapies to perform as designed, to demonstrate safety and efficacy, as well as results that are consistent with prior results, Heat's vaccine platform to provide protection against COVID-19, the ability to enroll patients and complete the clinical trials on time and achieve desired results and benefits, especially in light of COVID-19, Heat's ability to obtain regulatory approvals for commercialization of product candidates or to comply with ongoing regulatory requirements, regulatory limitations relating to Heat's ability to promote or commercialize its product candidates for specific indications, acceptance of its product candidates in the marketplace and the successful development, marketing or sale of products, Heat's ability to maintain its license agreements, the continued maintenance and growth of its patent estate, its ability to establish and maintain collaborations, its ability to obtain or maintain the capital or grants necessary to fund its research and development activities, its ability to continue to maintain its listing on the Nasdaq Capital Market and its ability to retain its key scientists or management personnel, and the other factors described in Heat's most recent annual report on Form 10-K filed with the SEC, and other subsequent filings with the SEC. The information in this release is provided only as of the date of this release, and Heat undertakes no obligation to update any forward-looking statements contained in this release based on new information, future events, or otherwise, except as required by law.

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Abstract Accepted for Poster Presentation at 2021 ASCO Annual Meeting

Session Title: Poster Session: Lung Cancer—Non-Small Cell Metastatic
Abstract Number: 9100

Interim results of viagenpumatucel-L (HS-110) plus nivolumab in previously treated patients (pts) with advanced non-small cell lung cancer (NSCLC) in two treatment settings

Roger B. Cohen,[1] George E. Peoples,[2] Toana Kawashima,[2] Bill Arana,[3] Xiaoxing Cui,[3] Lyudmila Bazhenova,[4] Rachel E. Sanborn,[5] Wael Harb,[6] Nathan Pennell,[7] Daniel Morgensztern[8]

[1]Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA; [2]Cancer Insight LLC, San Antonio, TX; [3]Heat Biologics Inc, Morrisville, NC; [4]UC San Diego, Moores Cancer Center, San Diego, CA; [5]Earle A. Chiles Research Institute, Providence Cancer Institute, Portland, OR; [6]Horizon Oncology Center, Lafayette, IN; [7]Taussig Cancer Institute, Cleveland Clinic, Cleveland, OH; [8]Washington University School of Medicine, St. Louis, MO.

Background: Viagenpumatucel-L (HS-110) is an allogeneic cell therapy derived from a human lung adenocarcinoma cell line incorporating multiple cancer testis antigens and transfected with a gp96-Ig fusion protein.

Methods: We report interim results of cohort A (previously treated pts who had not received a checkpoint inhibitor [CPI]) and cohort B (pts who progressed after CPI treatment) in an ongoing phase 2 trial evaluating HS-110 plus nivolumab (NIVO) in advanced NSCLC pts (NCT02439450). Pts received HS-110 (1×10^7 cells) intradermally QW for 18 wk and NIVO Q2W until tumor progression. Stratified analyses were performed by injection site reaction (ISR), yes (+) or no (–); baseline blood tumor mutational burden (bTMB), bTMB-L (<10 mutations/megabase [mut/Mb]) or bTMB-H (≥10 mut/Mb) by FoundationACT test; and baseline PD-L1 expression, – (<1%) or + (≥1%).

Results: As shown in the **Table**, median progression-free survival (PFS) in cohort A (n=47) was 1.8 mo (95% CI 1.8-7.8) and median overall survival (OS) was 24.6 mo (95% CI 11.7-36.0) after a median follow-up (MFU) of 19.5 mo. We observed significantly longer PFS and OS in ISR+ pts (hazard ratio [HR] 0.43, p=0.01; HR 0.23, p<0.001) and longer OS in PD-L1+ pts (HR 0.25, p=0.02). In cohort B (n=68), median PFS was 2.8 mo (1.8-3.9) and median OS was 11.9 mo (9.7-16.3) after a MFU of 11.9 mo. We observed significantly longer OS in ISR+ pts (HR 0.48, p=0.03) and a trend toward extended OS in bTMB-L pts (HR 0.58, p=0.20). HS-110 TEAEs were reported in 21 (44.7%) pts in cohort A and 18 (26.5%) pts in cohort B. TEAEs in >5% of pts included fatigue, maculopapular rash, nausea, diarrhea, and pruritus. Few HS-110–related TEAEs led to discontinuation of treatment [cohort A, 5 (10.6%); cohort B, 3 (4.4%)], and no serious AEs were considered related to HS-110.

Conclusions: HS-110 was well tolerated when administered in combination with NIVO. In previously treated pts with advanced NSCLC, we observed (1) significantly longer PFS and OS in ISR+ pts in both CPI naïve and CPI progressor cohorts; (2) significantly longer OS in PD-L1+ patients in the CPI naïve cohort; and (3) a trend of improved OS in bTMB-L pts in the CPI progressor cohort. Further clinical evaluation of HS-110 is warranted in both CPI naïve and CPI progressor NSCLC patients.

Table Interim results of HS-110 plus NIVO

	All	ISR+	ISR–	Adj. HR or OR; *p*	bTMB-L	bTMB-H	Adj. HR or OR; *p*	PD-L1+	PD-L1–	Adj. HR or OR; *p*
Cohort A, n	47	28	19	–	2	2	–	9	22	–
ORR, %	21.3	28.6	10.5	3.91†; 0.12	–	–	–	44.4	9.1	8.10†; 0.04
PFS‡	1.8	5.4	1.5	0.43; 0.01	–	–	–	4.8	1.8	0.46; 0.11
OS‡	24.6	36.0	4.5	0.23; <0.001	–	–	–	40.5	20.7	0.25; 0.02
Cohort B, n	68	52	16	–	32	11	–	23	29	–
ORR, %	10.3	11.5	6.3	1.99†; 0.60	15.6	9.1	2.25†; 0.50	13.0	10.3	1.27†; 0.80
PFS‡	2.8	3.0	1.7	0.63; 0.14	3.7	2.7	0.94; 0.90	3.2	2.9	1.11; 0.80
OS‡	11.9	12.1	6.8	0.48; 0.03	18.2	12.2	0.58; 0.20	12.0	12.2	0.99; 0.90

†OR. ‡median, mo. OR, odds ratio; ORR, objective response rate.

Heat Biologics

Heat Biologics

Nasdaq: HTBX

CORPORATE PRESENTATION

MAY 2021

Forward Looking Statements

This presentation includes statements that are, or may be deemed, "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. In some cases, these forward-looking statements can be identified by the use of forward-looking terminology, including the terms "believes," "estimates," "anticipates," "expects," "plans," "intends," "may," "could," "might," "will," "should," "approximately" or, in each case, their negative or other variations thereon or comparable terminology, although not all forward-looking statements contain these words. They appear in a number of places throughout this presentation and include statements regarding our intentions, beliefs, projections, outlook, analyses or current expectations concerning, among other things, our ongoing and planned discovery and development of drugs targeting cancer, autoimmune diseases and infectious diseases, our planned discovery and development of a COVID-19 vaccine, the strength and breadth of our intellectual property, our ongoing and planned preclinical studies and clinical trials, the timing of and our ability to complete clinical trials and make regulatory filings and obtain and maintain regulatory approvals for our product candidates, our ability to partner our product development, the degree of clinical utility of our products, particularly in specific patient populations, expectations regarding clinical trial data, our results of operations, financial condition, liquidity, prospects, growth and strategies, the length of time that we will be able to continue to fund our operating expenses and capital expenditures, our expected financing needs and sources of financing, the industry in which we operate and the trends that may affect the industry or us.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events, competitive dynamics, and healthcare, regulatory and scientific developments and depend on the economic circumstances that may or may not occur in the future or may occur on longer or shorter timelines than anticipated. Although we believe that we have a reasonable basis for each forward-looking statement contained in this presentation, we caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate may differ materially from the forward-looking statements contained in this presentation as a result of, among other factors, the factors referenced in the "Risk Factors" section of our Annual Report on Form 10-K for the year ended December 31, 2020, our quarterly reports on Form 10-Q for the subsequent quarters and our other subsequent filings with the Securities and Exchange Commission (collectively, our "SEC Filings"). In addition, even if our results of operations, financial condition and liquidity, and the development of the industry in which we operate are consistent with the forward-looking statements contained in this presentation, they may not be predictive of results or developments in future periods. Any forward-looking statements that we make in this presentation speak only as of the date of such statement, and we undertake no obligation to update such statements to reflect events or circumstances after the date of this presentation, except as required by law.

Heat Biologics

Snapshot of Heat Biologics (Nasdaq: HTBX)

Headquarters: Morrisville, NC

- **Focus on developing first-in-class immunotherapies**
- **Diversified and differentiated clinical-stage product portfolio**
  - Cell therapies using proprietary gp96 platform
  - Antibody-based therapeutics
- **Lead product HS-110 has the potential to improve PD-(L)1 therapy**
  - Clinical proof-of-concept achieved: positive survival data in two distinct treatment settings of NSCLC
- **Two additional oncology programs in Phase 1 trials**
- **Solid balance sheet with $132M in cash and cash equivalents***

*as of March 31, 2021

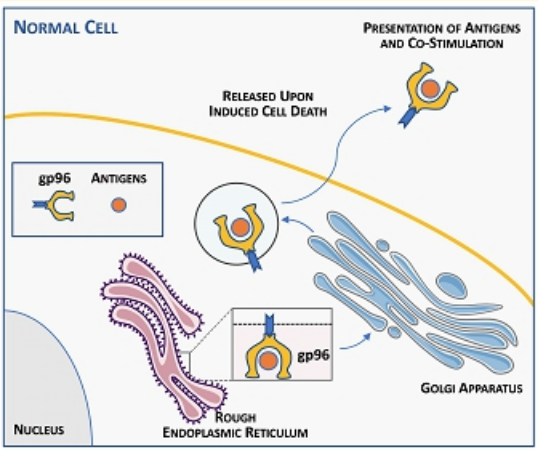
Product Pipeline

Product	MOA (Modality)	Indication	IND-Enabling	Phase 1	Phase 2	Phase 3	Upcoming Activities
HS-110	gp96 + CTAs (Cell Therapy)	NSCLC					ASCO 2021 Poster End-of-Phase 2 Meeting
HS-130	OX40L (Cell Therapy)	Solid Tumors					Initial Data Readout in H2 2021
COVID-19 Vaccine	gp96 + Viral Antigens (Cell Therapy)	COVID-19					Pre-IND Meeting with FDA
PTX-35	TNFRSF25 (mAb)	Solid Tumors					Initial Data Readout in H2 2021

CTA = cancer testis antigen
NSCLC = Non-small cell lung cancer

Heat Biologics' gp96 Platform

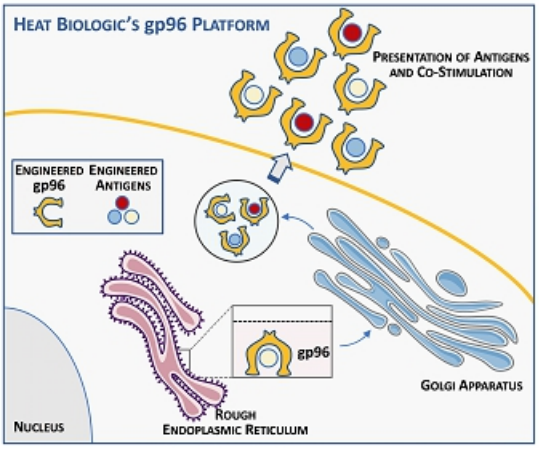
Activating the Immune System



- Function of heat shock protein gp96:
  - Potent mucosal adaptive memory inducer
  - Chaperones antigens (pathogens or tumor) to the immune system
  - Activates B cell response and drives antigen-specific CD4+ and CD8+ T cell activation

Heat Biologics' gp96 Platform

Activating the Immune System



- Function of heat shock protein gp96:
  - Potent mucosal adaptive memory inducer
  - Chaperones antigens (pathogens or tumor) to the immune system
  - Activates B cell response and drives antigen-specific CD4+ and CD8+ T cell activation
- Key features of Heat's gp96 platform
  - Leverages gp96's role as a natural molecular warning system
    - Engineered to secrete antigens bound to gp96
  - Off-the-shelf allogeneic cell vaccine
    - Feasible for large scale manufacturing
    - Amenable to stockpiling
  - Broad applications in infectious diseases and cancer
- Lead product in Phase 2 trial for NSCLC

HS-110

Overview

- **HS-110 in Phase 2 has broad potential for providing multiple treatment options to NSCLC patients in combination with a PD-1 inhibitor**
  - HS-110 is a first-in-class, off-the-shelf, allogeneic cell therapy designed to utilize gp96 for immune activation against multiple tumor testis antigens
  - Positive interim survival data has been demonstrated in two distinct treatment settings in previously treated PD-(L)1 naïve and PD-(L)1 progressor NSCLC patients
  - Plan to discuss Phase 3 registrational pathways with FDA as well as potential partners
- **Combination of HS-110 and PD-(L)1 therapies may confer additional survival benefit**
- **Heat Biologics has worldwide rights**

References: Strbo et al 2013. Immunologic research; Strbo et al 2013. Journal of immunology; Yifei Wang et al. 2018. J Immunol; Heat Biologics Internal data; † Shukuya & Carbone 2016. Journal of Thoracic Oncology, Vol.11 No.7: 976 - 988

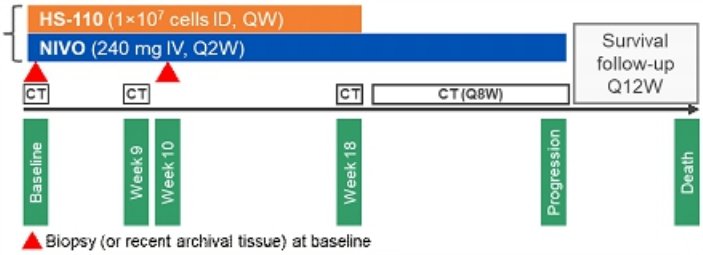
HS-110 Phase 2 Trial Schema

Cohorts A and B

Patients
- Previously treated adult patients with unresectable or with adenocarcinoma or squamous NSCLC
- ≥1 lesion measurable by RECIST 1.1
- ECOG PS 0 or 1

Cohort A:
Previously treated CPI naïve patients (n = 47)

Cohort B:
CPI progressor patients (n = 68)



Primary outcome:
ORR (per RECIST 1.1)

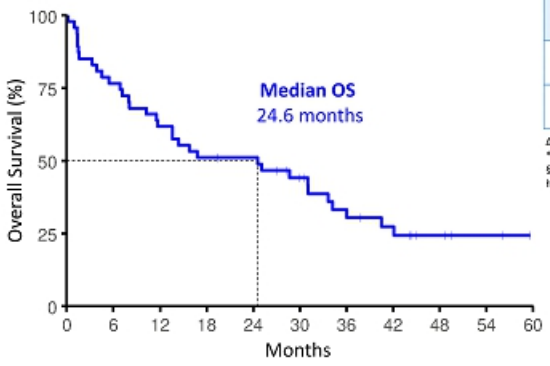
Key secondary outcomes:
PFS (per RECIST 1.1)
OS
Safety and tolerability

Retrospective subgroup analyses:
ISR (yes vs no)
Baseline bTMB (<10 vs ≥10 mut/Mb)
Baseline PD-L1 expression (<1% vs ≥1%)

bTMB, baseline blood tumor mutational burden; ID, intradermal; ISR, injection-site reaction; IV, intravenous; mut/Mb, mutations per megabase; QW, weekly; Q2W, every 2 weeks;

Heat Biologics

Cohort A: *CPI naïve pts treated by HS-110 + Nivolumab at ≥2L* — Overall Survival (OS)



	HS-110 + Nivolumab Δ (94% non-squamous and 6% squamous) All (N=47)	Nivolumab Non-squamous BMS Checkmate 057 Study* (N=292)
Median OS (months)	24.6 (29.7% still alive)	12.2
1-yr OS	61.7%	50.7%

Δ Heat Biologics Cohort A interim results as of November 2020 data cut. Median follow-up time = 19.4 months.
* Borghaei et al 2021. J Clin Oncol
§ Please note Heat Biologics' trial did not have a comparative nivolumab only arm. Published data in green is historical data and not HS-110 data.

Heat Biologics

Patient Characteristics

Cohort A and CheckMate 057 Study

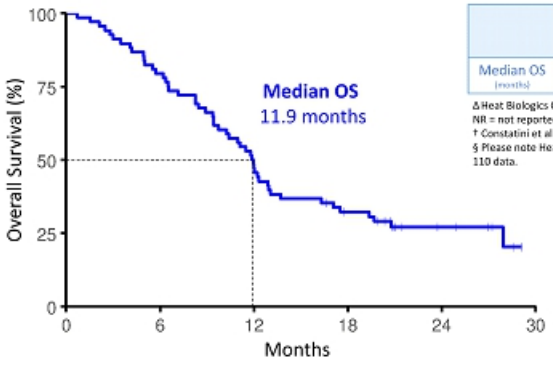
	HS-110 + Nivolumab CPI naïve patient at ≥ 2L Cohort A Δ	Nivolumab CPI naïve patients at ≥ 2L CheckMate 057 *
N	47	292
Adenocarcinoma	93.6%	100%
Squamous	6.4%	0
PD-L1 Positive (≥ 1%)	19.1%	53%
ECOG PS ≥ 1	66.0%	71%
Prior Treatment: 1 line	70.2%	88%
2 lines	12.8%	12%
≥ 3 lines	17.0%	0
Current or Former Smoker	83.0%	79%
EGFR +	12.8%	15%
ALK +	0%	4%
KRAS +	14.9%	10%

Δ Heat Biologics Cohort A interim results as of November 2020 data cut. Median follow-up time = 19.4 months. Please note Heat Biologics' trial did not have a comparative nivolumab only arm. Published data in green is historical data and not HS-110 data. * Borghaei et al 2021. J Clin Oncol.

Heat Biologics

Cohort B:
CPI progressors treated by HS-110 + Nivolumab at ≥2L

Overall Survival (OS)



	HS-110 + Nivolumab at ≥ 2nd line after CPI failure Δ All (N=68)
Median OS (months)	11.9 26.5% still alive

	Treatment Options § at ≥ 3rd line after CPI failure		
	Gemcitabine† (N=27)	Docetaxel† (N=25)	Chemotherapy‡ (N=28)
Median OS (months)	7.5	6.8	9.0

Δ Heat Biologics Cohort B interim results as of November 2020 data cut. Median follow-up time = 11.9 months.
NR = not reported.
† Constatini et al 2018 ERJ Open Research ‡ Schvartsman et al 2017 Lung Cancer.
§ Please note Heat Biologics' trial did not have a chemotherapy only arm. Published data in green is historical data and not HS-110 data.

Heat Biologics

Patient Characteristics

Cohort B and Published Data

	HS-110 + Nivolumab at ≥ 2nd line after CPI failure Δ
N	68
Adenocarcinoma	80.9%
Squamous	17.6%
PD-L1 Positive (≥ 1%)	33.8%
ECOG PS ≥ 1	63.2%
Prior treatment: 1 line	38.2%
2 lines	30.9%
≥ 3 lines	30.8%
Current or Former Smoker	83.8%
EGFR +	4.4%
ALK +	1.5%
KRAS +	23.5%

	Treatment Options § at ≥ 3rd line after CPI failure including	
	Gemcitabine, Docetaxel and others †	Single-agent chemotherapy ‡
N	115	28
Adenocarcinoma	63%	82.1%
Squamous	26%	14.3%
PD-L1 Positive (≥ 1%)	Not Available	Not Available
ECOG PS ≥ 1	Not Available	53.6%
Prior treatment: 1 line	0%	0%
2 lines	37%	21.4%
≥ 3 lines	63%	78.6%
Current or Former Smoker	90%	71.5%
EGFR +	Not Available	21.4%
ALK +	Not Available	3.6%
KRAS +	Not Available	17.9%

Δ Heat Biologics Cohort B interim results as of November 2020 data cut. Median follow-up time = 11.9 months. § Please note Heat Biologics' trial did not have a chemotherapy only arm. Published data in green is historical data and not HS-110 data. † Constatini et al 2018 ERJ Open Research ‡ Schvartsman et al 2017 Lung Cancer.

Heat Biologics

OS by Injection Site Reaction (ISR)

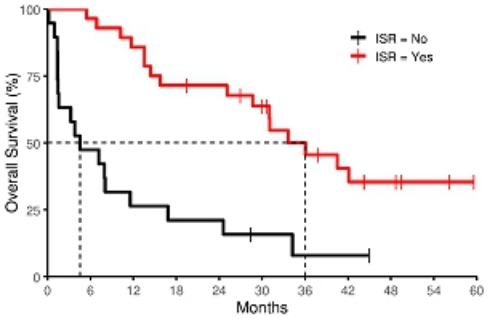
In Both Cohort A and Cohort B, Significantly Improved OS in Patients who Experienced Dermal Injection Site Reaction

Cohort A:

CPI naïve pts treated by HS-110 + Nivolumab at ≥2L

ISR	N (%)	Events	Median OS, 95% CI (mos)	
Yes	28 (60%)	16	36.0	(28.7, NE)
No	19 (40%)	17	4.5	(1.6, 24.6)

Adjusted HR: 0.23 (95% CI: 0.11, 0.49)
$p < 0.001$

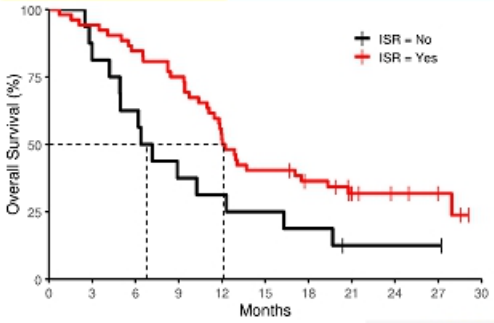


Cohort B:

CPI progressors treated by HS-110 + Nivolumab at ≥2L

ISR	N (%)	Events	Median OS, 95% CI (mos)	
Yes	52 (76%)	36	12.1	(11.1, 20.8)
No	16 (24%)	14	6.8	(4.9, 19.7)

Adjusted HR: 0.48 (95% CI: 0.25, 0.92)
$p = 0.03$



ISR = Yes refers to patients who experienced at least one injection site reaction at any time during treatment

As of November 2020 datacut

Heat Biologics

Clinical Proof-of-Concept Achieved

HS-110 in Combination with Nivolumab in Unresectable or Metastatic NSCLC

Cohort A: Previously treated Checkpoint Inhibitor (CPI) naïve NSCLC patients

	HS-110 + Nivolumab Δ (94% non-squamous and 6% squamous)		
	All (N=67)	ISR+ (N=28)	PD-L1+ (N=5)
OS (mos)	24.6 (11.7, 36.0) 29.7% still alive	36.0 (28.7, NE)	40.5 (8.0, NE)

	Nivolumab (Non-squamous)
	BMS Checkmate 057 Study* (N=292)
OS (mos)	12.2 (9.7, 15.1)

Δ Heat Biologics Cohort A interim results as of November 2020 data cut. Median follow-up time = 19.6 months. Subgroup analyses were retrospective.
* Borghaei et al 2021. J Clin Oncol § Please note Heat Biologics' trial did not have a comparative nivolumab only arm. Published data in green is historical data and not HS-110 data. Injection site reaction (ISR), yes (+) or no (–); and baseline PD-L1 expression, – (<1%) or + (≥1%).

Cohort B: NSCLC patients whose disease had progressed on or after prior CPI treatment

	HS-110 + Nivolumab at ≥ 2nd line after CPI failure Δ			
	All (N=68)	ISR+ (N=52)	bTMB-L (N=32)	PD-L1+ (N=23)
OS (mos)	11.9 (9.7, 16.3) 26.5% still alive	12.1 (11.1, 20.8)	18.2 (12.9, NE)	12.0 (9.4, NE)

	Treatment Options at ≥ 3rd line after CPI failure		
	Gemcitabine† (N=27)	Docetaxel† (N=25)	Chemotherapy† (N=28)
OS (mos)	7.5 (3.0, 13.4)	6.8 (5.2, 11.5)	9.0 (7.7, 24.2)

Δ Heat Biologics Cohort B interim results as of November 2020 data cut. Median follow-up time = 11.9 months. Subgroup analyses were retrospective.
† Constatine et al 2018 ERJ Open Research 3 Schwartsman et al 2017 Lung Cancer. § Please note Heat Biologics' trial did not have a chemotherapy only arm. Published data in green is historical data and not HS-110 data. Injection site reaction (ISR), yes (+) or no (–); baseline blood tumor mutational burden (bTMB), bTMB-L (<10 mutations/ megabase [mut/Mb]) or bTMB-H (≥10 mut/Mb) by FoundationACT test; and baseline PD-L1 expression, – (<1%) or + (≥1%).

- HS-110 in combination with nivolumab compares favorably with published data§
- Two 2+ line NSCLC settings are under evaluation:
  - 2+ line Checkpoint Inhibitor (CPI) naïve patients
  - 2+ line patients that progressed after CPI
- Potential strategy to accelerate clinical development
  - Improved OS in subsets of patients with injection site reaction (ISR)

Heat Biologics

HS-130

Overview

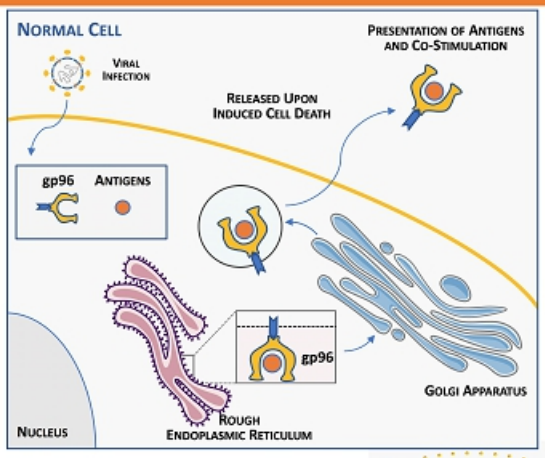
- **HS-130 is the first allogeneic, off-the-shelf, cell therapy approach** utilizing OX40-mediated co-stimulation to enhance activation of dormant immune signal
  - Leverage HS-110 clinical experience and manufacturing know-how
  - Addition of OX40L fusion protein to extend and expand T cell memory
- **Mechanism of action offers broad market potential**
- **Phase 1 in oncology currently enrolling**
- **Heat Biologics has worldwide rights**

Heat Biologics

COVID-19 Vaccine Program

Overview

- **Potential first-in-class vaccine for COVID-19**
  - Utilizes the gp96 platform to induce long-lasting memory responses
    - Heat's gp96 platform-based products evaluated in 250+ patients to date
    - Multiple vaccine candidates demonstrated activities in preclinical infectious disease models including SIV, Zika and Malaria
- **Designed to elicit long-lasting immune response against SARS-CoV-2 virus**
  - Preclinical data demonstrated Spike protein-specific T cell responses and memory responses
  - IND-enabling activities in progress
- **Plan to seek partnership opportunities to accelerate our COVID-19 vaccine program**



PTX-35

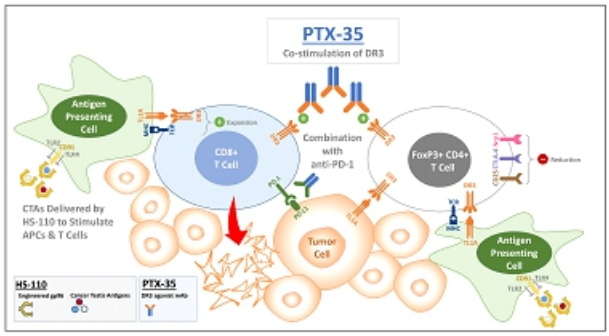
Overview

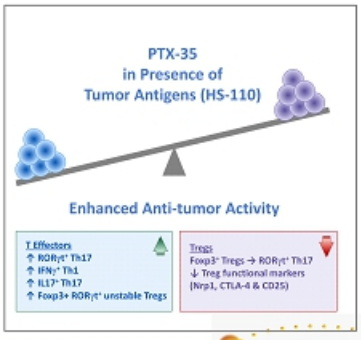
- **PTX-35 offers a unique opportunity to modulate conventional or regulatory T-cells**
  - Context driven depending on specific disease settings
  - Broad applications in cancer and autoimmunity
- **Potential first-in-class antibody targeting TNFRSF25 for oncology**
  - Phase 1 trial in solid tumors currently enrolling
  - Anti-tumor activity demonstrated in multiple preclinical *in vivo* colon, lung and breast cancer models
  - Preclinical data demonstrated anti-tumor activities, expansion of antigen-specific CD8+ T cells and decreased Treg suppression in presence of tumor antigen
  - Awarded a $15.2M grant to fund Phase 1 clinical development
- **Worldwide rights licensed by Heat Biologics**

PTX-35 Mechanism of Action

In Combination with Antigen-driven Immunotherapy

- Presented latest preclinical data on mechanism of action on PTX-35 at AACR 2021
  - PTX-35 has anti-tumor activities in presence of tumor antigens: Reduction of Treg suppression and enhancement of T effector response was observed





Heat Biologics

Management Team of Heat Biologics

Successful Track Record in Advancing Multiple Products to the Market

Jeff Wolf, JD, MBA
Founder & CEO

George Peoples, MD
Chief Medical Advisor

Anthony Manning, PhD
Chief Scientific Advisor

William Ostrander
Chief Financial Officer

Bill Arana, MS
Exec Dir, Clinical Dev

Gary Vinson
VP of CMC & Quality

Cheni Kwok, PhD, CLP
Senior Advisor of Business Development

MD Anderson Cancer Center · Biogen · Roche · gsk · Kowa · Momenta · Cancer Insight · Liquidia · EXELIXIS · KBI Biopharma · TYRX · CELERA · AILERON · emergo therapeutics · biodelivery sciences · Argos · PONIARD · ALDAGEN

Heat Biologics

Snapshot of Heat Biologics (Nasdaq: HTBX)

Headquarter: Morrisville, NC

- **Focus on developing first-in-class immunotherapies**
- **Diversified and differentiated clinical-stage product portfolio**
  - Cell therapies using proprietary gp96 platform
  - Antibody-based therapeutics
- **Lead product HS-110 has the potential to improve PD-(L)1 therapy**
  - Clinical proof-of-concept achieved: positive survival data in two distinct treatment settings of NSCLC
- **Two additional oncology programs in Phase 1 trials**
- **Solid balance sheet with $132M in cash and cash equivalents***

Product	MOA (Modality)	Indication	IND-Enabling	Phase 1	Phase 2	Phase 3	Upcoming Activities
HS-110	gp96 + CTAs (Cell Therapy)	NSCLC					ASCO 2021 Poster End-of-Phase 2 Meeting
HS-130	OX40L (Cell Therapy)	Solid Tumors					Initial Data Readout in H2 2021
COVID-19 Vaccine	gp96 + Viral Antigens (Cell Therapy)	COVID-19					Pre-IND Meeting with FDA
PTX-35	TNFRSF25 (mAb)	Solid Tumors					Initial Data Readout in H2 2021

CTA = cancer testis antigen
NSCLC = Non-small cell lung cancer
*as of March 31, 2021

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