

Equity Research

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Heat Biologics, Inc. (HTBX-\$8.40)

Rating: BUY

Target Price: \$18.00

HS-410 Advancing this Quarter, HS-110 in 1Q:14 - Maintain BUY and \$18 PT

<u>EPS</u>	<u>1Q</u>	<u>2Q</u>	<u>3Q</u>	<u>4Q</u>
2012A	(0.47)A	(0.06)A	(0.51)A	(0.39)A
2013E	(1.66)A	(0.92)A	(0.48)A	(0.36)E
<i>Prev</i>	—	—	(0.14)E	(0.16)E
2014E	(0.51)E	(0.48)E	(0.51)E	(0.52)E
<i>Prev</i>	(0.26)E	(0.35)E	(0.41)E	(0.40)E
<u>REV</u>	<u>1Q</u>	<u>2Q</u>	<u>3Q</u>	<u>4Q</u>
2012A	0.0A	0.0A	0.0A	0.0A
2013E	0.0A	0.0A	0.0A	0.0E
2014E	0.0E	0.0E	0.0E	0.0E
<u>FY</u>	<u>2012A</u>	<u>2013E</u>	<u>2014E</u>	
EPS	(3.03)A	(2.59)E	(2.02)E	
<i>Prev</i>	—	(1.65)E	(1.42)E	
REV	0.0A	0.0E	0.0E	

- **Advancing Clinical Programs.** Heat Biologics "Heat" reported 3Q:13 EPS of (\$0.48), on higher R&D and lower share count than we had forecasted. R&D of \$1.2 million reflect the ability of the company to finance programs following the influx of cash from the company's IPO in July 2013. G&A expenses of \$0.8 million also reflect modest corporate expansion and increases in non-cash expense. We have adjusted our model to reflect the quarter as well as adjustments in share count.
- **HS-410 to Enroll Patients.** Phase I testing of HS-410 for the treatment of superficial bladder cancer is expected to start in December with the enrollment of the patients following the IND filing last quarter. We like this program given the modest number of trials for this indication, and the dynamic that adds Heat's therapy to existing standard of care.
- **HS-110 to Start Phase I in 1Q:13.** HS-110 for the treatment of NSCLC will begin Phase II testing in 1Q:13 as opposed to 4Q:13. The company indicated that this change to the time line is to allow changes to the protocol that will allow for a more rapid clinical trial program, and possibly yield data points that distinguish HS-110 from competitors in the space. Based on our discussions with management, it is our sense that the total length of time it will take to complete the study remains unchanged. Hence, there is no change to our overall assumptions for the trial's completion.
- **Clinical Catalysts Are Valuation Drivers.** We expect the Phase II HS-110 NSCLC study and the Phase I HS-110 superficial bladder study to begin in 4Q:13. As the HS-110 study will be a two-stage design, the first stage could read out within 9-12 months of initiation, providing a potential catalyst for the shares. We believe the superficial bladder cancer study should also provide catalysts within the next 12-24 months.
- **Valuation Expansion Based on Clinical Trial Progress -** We believe shares of Heat will benefit from the advancement of clinical trials and news flow regarding such progress. Our price target is \$18, which reflects a 50% rise in enterprise value (EV), which would still place the shares at a discount to several peer groups, including therapeutic (cancer immunotherapy/vaccine companies), stage of development (Phase II), and other recent IPOs. Our rating remains BUY.

Current Statistics

Market Cap (\$Mil)	\$56.0
Avg. Daily Trading Volume (3 mo.):	48,036
Shares Out (Mil):	6.195
52 Wk. Range	\$15.29-\$7.50

Summary

Heat Biologics is a development-stage company with a proof-of-concept study in non-small cell lung cancer (NSCLC) about to get underway. The company is working in the evolving field of therapeutic cancer vaccines with a unique approach that seeks to harness the immune-provoking activity of the gp96 heat shock protein (HSP). This approach could offer broad cancer antigen coverage in a cost effective manner relative to other approaches in the field today. While the company is at an earlier stage of development versus others in the field, and this is reflected in the current valuation, we see opportunity for expansion based on clinical progress, which we think is likely. The company's technology is unique and has broad potential, in our opinion, and there is an actionable milestone catalyst calendar through 2015. We like Heat for its:

- **Broad Antigen Coverage Technology** – Heat Biologics' vaccines utilize Immune Pan Antigen Cytotoxic Therapy (*ImPACT*) technology, which is a method of engineering allogeneic (not originating from the patient) "off the shelf" tumor cells to secrete antigens that stimulate the immune system. The technology allows the immune system to identify a variety of tumor-specific antigens, increasing the likelihood that tumor cells will be recognized and killed.
- **Actionable Milestones within the Next 24 Months** –Heat Biologics has initiated the Phase I study of HS-410 in bladder cancer and will begin clinical studies evaluating HS-110 for NSCLC by the end of 1Q:14. While both studies are expected to be completed by late 2015/early 2016, they consist of multiple parts that provide interim data over the duration of the studies. The studies could therefore provide multiple catalysts for valuation expansion.
- **Targeting Areas of Unmet Need** – Heat Biologics will focus development on NSCLC and bladder cancer in the near term. We believe that the field of immunotherapy in cancer has evolved, learning from prior clinical failures that trials in the sickest of patients, with the highest of disease burdens, may be the least likely to derive benefit from treatment. Hence, in both NSCLC and bladder cancer, Heat Biologics is evaluating HS-110 and HS-410 in patients that have finished systemic treatment and presumably have a lower burden of disease.
- **Applications Outside of Cancer** – Heat's *ImPACT* technology stimulates a cytotoxic T-cell response, and this suggests potential utility in infectious diseases such as HIV. Early feasibility studies have been conducted, though this is not a focus for the company at this time.

Valuation

In valuing Heat, we looked at a comparative analysis of enterprise value versus several peer groups (recent IPOs, similar stage of development, cancer vaccine developers and recent IPOs). Heat is currently valued at a steep discount to all of the peer groups. Heat trades at a significant discount to peers; cancer immunotherapy companies, companies with Phase II assets, and recent IPOs. This discount could be a function of dependence on a single technology (*ImPACT*) or earlier stage of development versus immunotherapy peers. But we also believe that as Heat's candidates advance into clinical trials, greater value will accrue to the shares. Typical biotech valuations for Phase II candidates are in the \$150-250 million range and \$100 million for Phase I assets. Based on Heat's Phase II ready HS-110 and Phase I/II ready HS-410 programs, we believe the shares could have compelling upside.

On the basis of advancing milestones, we think the company's EV could expand and drive share price gains. Based on enterprise value expansion observed for peer companies of upwards of 50%, we think the same can be experienced by Heat Biologics. On that basis, we believe Heat shares could experience valuation expansion to \$18 based on the advancement of candidates in clinical trials.

Exhibit 1: Peer Valuation Analysis

Sub Sector	Company	Ticker	Price	S/O	Mkt Cap	Pfd Shares	Min Int.	Debt	Cash	EV	HTBX Premium (Discount)
Cancer Vaccine Developers	Advaxis	ADXS	\$3.09	11.79	\$36.42	\$0.00	\$0.00	\$3.57	\$0.00	39.99	(14.2%)
	Agenus	AGEN	2.47	35.47	87.62	0.00	0.00	0.00	30.21	57.41	(40.3%)
	Celldex Therapeutics	CLDX	25.6	81.11	2,076.4	0.00	0.00	0.00	136.59	1,939.78	(98.2%)
	Galena Biopharma	GALE	3.00	105.24	315.71	0.00	0.00	9.83	54.33	271.21	(87.4%)
	Immunocellular	IMUC	2.56	57.10	146.17	0.00	0.00	0.00	29.43	116.73	(70.6%)
	Inovio	INO	1.87	208.38	389.66	0.00	0.46	0.00	46.17	343.95	(90.0%)
	Newlink Genetics	NLNK	17.39	25.71	447.03	0.00	0.00	1.08	51.96	396.14	(91.3%)
	Oncothyreon	ONTY	1.82	69.31	126.15	0.00	0.00	0.00	0.00	126.15	(72.8%)
	Average									411.42	(91.7%)
Phase II Development Stage	Clovis	CLVS	\$52.65	30.2	\$1,588.50	\$0.00	\$0.00	\$0.00	\$356.62	1,231.88	(97.2%)
	Cytrx	CYTR	2.13	41.98	89.41	0.00	0.00	0.00	23.04	66.37	(48.3%)
	Epizyme	EPZM	31.71	28.42	901.2	0.00	0.00	0.00	139.58	761.59	(95.5%)
	Infinity Pharma	INFI	13.82	48.09	664.56	0.00	0.00	0.00	250.86	413.71	(91.7%)
	Oncomed	OMED	12.47	27.83	346.98	182.77	0.00	0.33	56.46	473.62	(92.8%)
	Oncosec	ONCS	0.28	170.84	47.83	0.00	0.00	0.00	4.97	42.86	(20.0%)
	Verastem	VSTM	10.10	25.65	259.04	0.00	0.00	0.00	57.45	201.59	(83.0%)
	Progenics	PGNX	3.91	60.83	237.83	0.00	0.00	0.00	75.60	162.23	(78.9%)
	Average									419.23	(91.8%)
Recent IPOs	Tesaro Inc.	TSRO	\$35.95	32.74	1,176.86	0.00	0.00	0.00	178.09	998.77	(96.6%)
	Epizyme	EPZM	31.71	28.42	901.2	0.00	0.00	0.00	139.58	761.59	(95.5%)
	BlueBird Bio	BLUE	20.59	23.72	488.42	0.00	0.00	0.00	228.85	259.57	(86.8%)
	Merrimack Pharmaceuticals	MACK	2.47	102.35	252.80	0.00	0.00	0.00	182.49	70.31	(51.2%)
	Intercept Pharmaceuticals	ICPT	52.09	19.26	1,003.36	0.00	0.00	0.00	156.75	846.60	(95.9%)
	ChemoCentryx	CCXI	4.68	42.87	200.61	0.00	0.00	0.06	157.27	43.40	(21.0%)
	Regulus Therapeutics	RGLS	5.90	41.33	243.85	0.00	0.00	13.92	123.90	133.87	(74.4%)
	Receptos	RCPT	25.00	18.34	458.45	0.00	0.00	4.43	80.78	382.10	(91.0%)
	Stemline Therapeutics	STML	23.23	12.91	299.81	0.00	0.00	0.00	92.69	207.12	(83.4%)
	Enanta Pharmaceuticals	ENTA	20.38	17.91	365.05	0.00	0.00	0.00	94.55	270.50	(87.3%)
	Average									397.38	(91.4%)
	Heat Biologics*	HTBX	\$9.04	6.40	57.86	0.00	(0.15)	0.00	23.40	34.30	(91.6%)

* Represents average discount of the three peer groups

Source: FactSet, Company data, Cantor Fitzgerald research

Risks

Heat Biologics is a development-stage company and investment is subject to risk. These risks include but are not limited to:

- HS-110 could fail to show an efficacy improvement in its Phase II study in NSCLC. The company uses an off-the-shelf supply of tumor cells and it is unclear whether or not these cells can stimulate an immune response against the patient's own tumor.
- HS-110 could also demonstrate a poor safety profile. HS-110 may secrete antigens that stimulate an immune response against normal cells.
- Heat may be unable to secure additional financing. We believe that the company has sufficient cash to fund development of HS-110 and HS-410 through initial stages of development, and additional fund raising may be dependent upon a positive clinical outcome from clinical trials.
- The clinical landscape is crowded with hundreds of oncology clinical trials, especially in NSCLC. It is possible that other technologies show greater benefit to patients than Heat's product candidates, thus rendering potential products obsolete or non-competitive.
- Heat will be switching the manufacturing process from the University of Miami to Lonza between the second and third portions of the Phase II trial evaluating HS-110 in NSCL. However, we cannot exclude the possibility that the switch may not be seamless.

Exhibit 2: Sales and Earnings by Quarter

Heat Biologics

<i>All figures in millions</i>	2014E	4Q14E	9Mos14E	3Q14E	6Mos14E	2Q14E	1Q14E	CY2013E	4Q2013E	9Mos13A	3Q13A	6Mos13A	2Q13A	1Q13A
Revenue	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Product Sales	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grants	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cost of Goods Sold	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gross Profit	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Gross Profit Margin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Operating Expenses														
SG&A	4.97	1.20	3.77	1.39	2.38	1.16	1.22	2.12	0.68	1.44	0.74	0.71	0.44	0.27
R&D	6.32	1.74	4.58	1.59	2.99	1.51	1.48	4.21	1.35	2.87	1.22	1.64	1.14	0.50
Total Operating Expenses	11.29	2.94	8.35	2.98	5.37	2.67	2.70	6.34	2.03	4.31	1.96	2.35	1.58	0.77
Profit (Loss) from Operations	(\$11.29)	(\$2.94)	(\$8.35)	(\$2.98)	(\$5.37)	(\$2.67)	(\$2.70)	(\$6.34)	(\$2.03)	(\$4.31)	(\$1.96)	(\$2.35)	(\$1.58)	(\$0.77)
Operating Profit Margin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Interest Income (Expense)	(0.06)	(0.04)	(0.02)	0.05	(0.07)	(0.04)	(0.03)	(0.15)	(0.05)	(0.11)	(0.05)	(0.06)	(0.03)	(0.03)
Other Income (Expense)	(0.12)	(0.02)	(0.10)	(0.03)	(0.07)	(0.06)	(0.01)	(0.04)	0.04	(0.08)	(0.03)	(0.05)	(0.06)	0.01
Income (Loss) from Continuing Operations	(\$11.47)	(\$3.00)	(\$8.47)	(\$2.96)	(\$5.51)	(\$2.77)	(\$2.74)	(\$6.53)	(\$2.03)	(\$4.50)	(\$2.03)	(\$2.46)	(\$1.67)	(\$0.79)
Pretax Margin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Income Tax Paid (Benefit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Income (Loss)	(\$11.47)	(\$3.00)	(\$8.47)	(\$2.96)	(\$5.51)	(\$2.77)	(\$2.74)	(\$6.53)	(\$2.03)	(\$4.50)	(\$2.03)	(\$2.46)	(\$1.67)	(\$0.79)
Non-controlling Interest	(\$0.68)	(\$0.23)	(\$0.45)	(\$0.22)	(\$0.23)	(\$0.21)	(\$0.02)	(\$0.29)	(\$0.15)	(\$0.14)	(\$0.06)	(\$0.08)	(\$0.05)	(\$0.02)
Net Income to Heat Biologics (Loss)	(\$10.79)	(\$2.78)	(\$8.01)	(\$2.74)	(\$5.27)	(\$2.56)	(\$2.72)	(\$6.23)	(\$1.88)	(\$4.36)	(\$1.97)	(\$2.38)	(\$1.62)	(\$0.76)
Beneficial Conversion Charge/Pfd stock dividend*	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	(\$2.66)	\$0.00	(\$2.66)	(\$0.36)	(\$2.30)	\$0.00	(\$2.30)
Net Attributable to Common Shareholders	(\$10.79)	(\$2.78)	(\$8.01)	(\$2.74)	(\$5.27)	(\$2.56)	(\$2.72)	(\$8.90)	(\$1.9)	(\$7.02)	(\$2.3)	(\$4.68)	(\$1.6)	(\$3.1)
Net Margin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Basic & Diluted Net Loss Per Share	(\$2.02)	(\$0.52)	(\$1.51)	(\$0.51)	(\$0.99)	(\$0.48)	(\$0.51)	(\$2.59)	(\$0.36)	(\$2.45)	(\$0.48)	(\$2.59)	(\$0.92)	(\$1.66)
Shares Outstanding	5.34	5.38	5.32	5.35	5.31	5.32	5.30	3.43	5.28	2.86	4.84	1.81	1.76	1.86

<i>Year/Year Percent Change</i>	CY14/ CY13	4Q14/ 4Q13	9Mos14/ 9Mos13	3Q14/ 3Q13	6Mos14/ 6Mos13	2Q14/ 2Q13	1Q14/ 1Q13	CY13/ CY12	4Q13/ 4Q12	9Mos13/ 9Mos12	3Q13/ 3Q12	6Mos13/ 6Mos12	2Q13/ 2Q12	1Q13/ 1Q12
SG&A	134.0	76.5	161.1	88.5	237.0	164.7	355.0	NA	NA	NA	NA	NA	NA	NA
R&D	50.0	29.6	59.6	29.6	81.9	32.0	196.0	NA	NA	NA	NA	NA	NA	NA
Total Operating Expenses	78.2	45.3	93.6	51.7	128.5	68.8	251.5	NA	NA	NA	NA	NA	NA	NA
Shares Outstanding	55.4	1.9	85.9	10.6	193.2	201.9	185.0	NA	NA	NA	NA	NA	NA	NA

Source: Heat Biologics, Cantor Fitzgerald research

Exhibit 3: Annual Sales and Earnings
Heat Biologics

<i>All figures in millions</i>	2018E	2017E	2016E	2015E	2014E	2013E
Revenue	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Product Sales	0.00	0.00	0.00	0.00	0.00	0.00
Grants	0.00	0.00	0.00	0.00	0.00	0.00
Cost of Goods Sold	0.00	0.00	0.00	0.00	0.00	0.00
Gross Profit	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<i>Gross Profit Margin</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>
Operating Expenses						
G&A	7.11	6.87	6.29	5.52	4.97	2.12
R&D	14.18	12.23	9.94	7.65	6.32	4.21
Total Operating Expenses	21.29	19.10	16.23	13.16	11.29	6.34
Profit (Loss) from Operations	(\$21.29)	(\$19.10)	(\$16.23)	(\$13.16)	(\$11.29)	(\$6.34)
<i>Operating Profit Margin</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>
Interest Income (Expense)	(\$0.08)	(\$0.06)	(0.13)	(0.12)	(0.06)	(0.15)
Other Income (Expense)	0.03	0.07	0.11	0.10	(0.12)	(0.04)
Income (Loss) from Continuing Operations	(\$21.34)	(\$19.09)	(\$16.25)	(\$13.18)	(\$11.47)	(\$6.53)
<i>Pretax Margin</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>
Income Tax Paid (Benefit)	0.00	0.00	0.00	0.00	0.00	0.00
Net Income (Loss)	(\$21.34)	(\$19.09)	(\$16.25)	(\$13.18)	(\$11.47)	(\$6.53)
Non-controlling Interest	(\$1.60)	(\$1.43)	(\$1.22)	(\$0.99)	(\$0.68)	(\$0.29)
Net Income to Heat Biologics	(\$19.74)	(\$17.66)	(\$15.03)	(\$12.19)	(\$10.79)	(\$6.23)
Beneficial Conversion Charge	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	(\$2.66)
Net Attributable to Common Shareholders	(\$19.74)	(\$17.66)	(\$15.03)	(\$12.19)	(\$10.79)	(\$8.90)
<i>Net Margin</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>	<i>NM</i>
Diluted Earnings (Net Loss) Per Share	(\$1.86)	(\$2.06)	(\$1.83)	(\$2.20)	(\$2.02)	(\$2.59)
<i>Shares Outstanding</i>	10.64	8.56	8.23	5.55	5.34	3.43


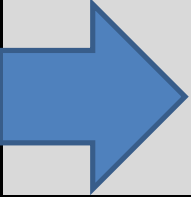


Source: Heat Biologics, Cantor Fitzgerald research

Exhibit 4: Balance Sheet
Heat Biologics

Assets	3Q13A	2012A	2011A
Cash & cash equivalents	\$23.58	\$0.01	\$0.10
Related Party Receivable	0.02	0.01	0.00
Stock Subscription Receivable	-	0.00	0.00
Miscellaneous Receivable	-	0.00	0.00
Prepaid expenses & other	0.80	0.06	0.01
Total current assets	\$24.40	\$0.07	\$0.10
Property & equipment, net	0.01	0.01	0.01
Debt Issuance Costs, net	-	0.03	0.06
Restricted Cash	0.00	0.03	0.00
Deposits	0.01	0.01	0.01
Total assets	\$24.43	\$0.15	\$0.18
Liability & Shareholder Equity			
Accounts payable	\$0.39	\$0.51	\$0.35
Accrued expenses	0.16	0.13	0.03
Accrued Interest	0.02	0.01	0.00
Related party payables	0.00	0.00	0.01
Liabilities related to discontinued operations	0.00	0.00	0.06
Notes payable - Current portion	-	0.07	0.00
Total current liabilities	\$0.57	\$0.72	\$0.45
Related party payables	0.00	0.00	0.01
Notes payable - Current portion	-	0.66	0.00
Convertible Notes payable	-	0.20	0.00
Preferred stock warrants liability	0.21	0.09	0.06
Total liabilities	\$0.79	\$1.66	\$0.52
Series 1 preferred stock	0.00	0.00	0.00
Series A preferred stock	0.00	0.00	0.00
Series B-1 preferred stock	0.00	0.00	0.00
Common stock	0.00	0.00	0.00
Additional paid-in capital	34.14	4.50	3.21
Accumulated deficit	(10.29)	(5.94)	(3.52)
Stockholders' equity	23.85	(1.44)	(0.31)
Non-Controlling Interest	(0.22)	(0.08)	(0.03)
Total liabilities & stockholders' equity	\$24.42	\$0.15	\$0.18

Source: Heat Biologics, Cantor Fitzgerald research

Exhibit 5: Pipeline and Milestones
Heat Biologics

Candidate	Indication	Description	Phase of Development				Next Event	Timeframe
			PreClinical	Phase I	Phase II	Phase III		
HS-110	NSCLC	Allogenic vaccine consisting of a lung cancer cell line genetically modified to "pump-out" cancer antigens bound to gp96, a heat shock protein					Initiate Phase II study	1Q:14
HS-410	Bladder Cancer Adjuvant	Allogenic vaccine consisting of a bladder cancer cell line genetically modified to "pump-out" cancer antigens bound to gp96, a heat shock protein					Dose 1st patient	4Q:13
HS-310	Ovarian Cancer	Allogenic vaccine consisting of an ovarian cancer cell line genetically modified to "pump-out" cancer antigens bound to gp96, a heat shock protein					Initiate Phase I/II study	TBD
HS-510	Triple Negative Breast Cancer	Allogenic vaccine consisting of a breast cancer cell line genetically modified to "pump-out" cancer antigens bound to gp96, a heat shock protein					Initiate Phase I/II study	TBD

Source: Heat Biologics, Cantor Fitzgerald research

Exhibit 6: Select Biotechnology Stocks (all market capitalization ranges)

Biotechnology	Mara Goldstein - 212.610.2215
Cantor Fitzgerald	mgoldstein@cantor.com

Mkt Cap. Range	Company (a)	Ticker	Rating	Price 11/14/13	Market Cap. (mil)	52-Week High Low		Performance YTD QTD 1-Year			Earnings Per Share (b) 2012A 2013E 2014E			Revenue Per Share (b) 2012A 2013E 2014E			Per Share Cash (b)	EV (b) (mil)	Short Interest	
Small Cap	Agenus	AGEN	NC	\$2.47	\$87.6	\$5.40	\$2.40	-41.7%	-13.0%	-33.1%	(\$0.51)	(\$1.20)	(\$0.67)	\$0.45	\$0.10	\$0.18	\$0.85	#N/A	2,033,172	
	Ambit	AMBI	NC	12.27	219.4	21.44	6.22	53.4%	-19.6%	NA	(16.59)	(1.42)	(1.94)	1.00	1.48	0.33	4.41	140.5	84,181	
	Cleveland BioLabs	CBLI	BUY	1.46	66.0	2.28	1.23	8.1%	-6.4%	14.1%	(0.69)	(0.48)	(0.52)	0.08	0.15	0.26	0.32	70.4	1,546,359	
	Curis	CRIS	NC	2.80	240.2	4.74	2.66	-23.5%	-37.2%	-15.0%	(0.21)	(0.17)	(0.25)	0.20	0.17	0.16	0.78	203.5	5,711,513	
	Cyclacel	CYCC	NC	3.91	69.3	8.18	2.75	-34.8%	-5.6%	-15.6%	(1.68)	(1.50)	(1.43)	0.00	0.04	0.00	1.95	34.8	1,762,968	
	Dendreon	DNDN	HOLD	2.53	384.6	7.22	2.23	-56.5%	-13.9%	-39.6%	(2.65)	(1.42)	(1.19)	2.14	1.87	2.15	1.54	731.2	59,707,129	
	Endocyte	ECYT	NC	10.95	395.8	19.00	7.50	15.3%	-20.5%	42.2%	(0.48)	(0.60)	(0.23)	0.96	1.73	2.10	4.40	236.6	3,227,556	
	Galena Biopharma	GALE	BUY	3.00	251.3	3.10	1.43	88.7%	32.7%	76.5%	(0.53)	(0.43)	(0.43)	0.00	0.03	0.19	0.66	206.1	15,682,911	
	Heat Biologics	HTBX	BUY	9.04	43.8	15.29	7.50	-9.6%	-28.3%	NA	(3.03)	(2.59)	(2.02)	0.00	0.00	0.00	4.96	20.3	67,998	
	ImmunoCellular	IMUC	NC	2.56	146.2	3.69	1.51	26.1%	-3.4%	58.0%	(0.35)	(0.26)	(0.29)	0.00	0.00	0.00	0.52	116.7	4,864,260	
	Merrimack Pharm.	MACC	NC	2.47	252.8	7.50	2.05	-60.4%	-36.7%	-64.6%	(1.28)	(1.25)	(1.22)	0.48	0.56	0.62	1.78	70.3	13,803,572	
	NewLink Genetics	NLNK	BUY	17.39	447.0	23.67	10.60	46.0%	-15.3%	43.4%	(1.12)	(1.30)	(2.13)	0.07	0.04	0.03	1.95	398.1	3,864,981	
	Oncomed	OMED	NC	12.47	347.0	31.00	12.07	-26.7%	-21.1%	NA	(21.06)	(0.82)	(0.76)	0.89	1.22	1.79	2.03	473.6	1,056,294	
	Oncothyreon	ONTY	BUY	1.82	116.3	5.16	1.55	-10.3%	-10.3%	-60.7%	(0.53)	(0.68)	(0.55)	0.00	0.00	0.00	1.13	44.4	5,757,902	
	Stemline	STML	NC	23.23	299.8	47.25	10.33	132.3%	-50.7%	NA	(1.82)	(2.15)	(2.33)	0.00	0.00	0.00	7.18	207.1	437,535	
	Sunesis Pharma	SNSS	BUY	5.13	265.2	6.54	3.70	22.4%	2.2%	17.9%	(0.91)	(0.78)	(0.68)	0.07	0.15	0.15	0.97	235.2	4,820,483	
	Synta	SNTA	NC	3.78	261.2	11.88	3.70	-60.8%	-40.9%	-48.3%	(0.91)	(0.78)	(0.68)	0.05	0.10	0.12	0.77	207.8	16,406,857	
	Verastem	VSTM	BUY	10.10	226.2	18.82	6.25	2.0%	-18.0%	-49.6%	(1.70)	(1.87)	(2.03)	0.00	0.00	0.00	5.82	95.9	963,147	
	Average					\$228.9			3.9%	-17.0%	1.8%	(\$3.11)	(\$1.10)	(\$1.08)	\$0.35	\$0.43	\$0.45	\$2.33	#N/A	7,877,712
	Mid Cap	Agius Pharmaceuticals	AGIO	NC	\$21.50	\$670.18	\$33.59	\$19.00	19.4%	-25.2%	NA	(\$1.11)	(\$1.50)	(\$1.09)	\$0.81	\$0.80	\$1.11	\$6.68	\$461.8	1,220,447
Ariad		ARIA	NC	2.42	449.3	24.59	2.15	-88.0%	-87.2%	-88.5%	(1.34)	(1.57)	(1.03)	0.00	0.25	0.31	1.59	154.8	26,777,613	
Array Biopharma		ARRY	NC	5.73	708.7	7.10	3.25	44.3%	-11.0%	65.6%	(0.33)	(0.57)	(0.67)	0.69	0.56	0.43	1.00	685.2	10,675,080	
Celldex		CLDX	BUY	25.60	2,076.4	38.84	5.02	265.7%	-32.3%	359.6%	(0.98)	(0.96)	(1.04)	0.14	0.03	0.01	1.68	1939.8	10,610,411	
Clovis Oncology		CLVS	NC	52.65	1,588.5	86.29	11.19	209.9%	-15.1%	310.0%	(2.97)	(2.80)	(3.58)	0.00	0.00	0.00	11.82	1231.9	1,082,231	
Epizyme		EPZM	NC	31.71	901.2	45.72	18.60	111.4%	-22.9%	NA	(0.72)	(1.74)	(0.68)	1.59	1.42	2.00	4.91	761.6	1,192,875	
Exelixis		EXEL	NC	5.19	956.0	5.96	4.29	7.5%	-12.3%	5.7%	(0.92)	(1.30)	(1.37)	0.26	0.18	0.20	2.52	491.3	47,595,470	
Immunogen (c)		IMGN	HOLD	14.60	1,246.8	20.25	10.85	8.2%	-15.8%	27.8%	(0.95)	(0.87)	(0.80)	0.19	0.42	0.85	2.05	1071.8	9,584,604	
Incyte		INCY	NC	43.95	7,080.9	44.85	15.78	158.5%	9.9%	159.4%	(0.34)	(0.32)	0.15	1.84	2.20	3.20	1.81	6976.9	7,864,530	
Infinity Pharm		INFI	NC	13.82	664.6	50.51	11.57	-62.1%	-19.1%	-33.6%	(1.70)	(2.82)	(2.59)	0.98	0.00	0.69	5.22	413.7	3,467,189	
Medivation		MDVN	NC	62.78	4,737.1	67.37	41.89	21.9%	4.6%	31.7%	(0.56)	(0.69)	0.76	2.41	3.29	5.71	3.22	4699.3	3,280,796	
Pharmacylics		PCYC	NC	123.82	9,126.9	143.34	48.87	101.5%	-11.5%	146.4%	0.17	0.24	0.09	1.11	2.94	4.41	7.60	8566.8	1,123,668	
Seattle Genetics		SGEN	SELL	41.05	5,027.8	49.23	22.71	70.0%	-8.6%	73.4%	(0.46)	(0.62)	0.02	1.72	2.11	2.69	3.05	4653.8	14,349,996	
Average					\$2,710.3			66.8%	-19.0%	96.2%	(\$0.94)	(\$1.19)	(\$0.91)	\$0.90	\$1.09	\$1.66	\$4.09	\$2,469.9	10,678,839	
Large Cap	Alexion	ALXN	NC	\$116.60	\$22,862.23	\$126.39	\$81.82	16.5%	-0.7%	27.6%	\$2.13	\$3.05	\$3.45	\$5.78	\$7.86	\$9.97	\$6.64	\$21,684.5	3,325,726	
	Amgen	AMGN	NC	113.53	85,615.9	119.70	81.56	27.3%	-0.9%	32.4%	6.51	7.46	8.13	22.89	24.48	25.87	29.91	90,246.9	9,379,677	
	Biogen Idec	BIIB	NC	236.10	55,769.9	262.00	135.58	57.4%	-3.6%	71.1%	6.53	8.87	11.10	23.35	29.14	34.63	2.83	55,800.1	2,424,515	
	Celgene	CELG	BUY	149.28	61,513.8	161.64	73.27	84.1%	-5.0%	100.6%	4.91	5.96	7.43	13.36	15.43	18.35	14.19	60,300.7	4,620,813	
	Gilead	GILD	NC	68.50	105,034.4	73.20	35.56	82.5%	9.1%	88.5%	1.95	1.99	3.08	6.33	7.11	9.00	1.36	110,566.2	70,092,048	
	Regeneron	REGN	NC	277.20	26,996.5	319.83	141.01	53.0%	-12.5%	87.2%	6.75	7.87	9.77	14.15	21.09	27.06	4.57	27,033.4	3,449,294	
	Vertex	VRTX	NC	61.20	14,305.9	89.96	38.44	40.2%	-20.5%	38.8%	(0.50)	(2.87)	(1.85)	6.53	4.49	3.15	6.30	13,500.4	4,439,465	
Average				\$53,157.0			51.6%	-4.9%	63.7%	\$4.04	\$4.62	\$5.87	\$13.20	\$15.66	\$18.29	\$9.40	\$33,328.0	13,961,648		
Indices	S&P 500	SP50	NA	1,782.0		1,782.00	1,343.35	21.9%	5.1%	29.6%	NM	109.6	120.8	NA	1,146.5	1,196.1				
	Dow Jones Ind	DJII	NA	15,821.6		15,822.98	12,438.44	18.0%	4.1%	24.0%	NM	1,055.5	1,131.2	NA	9,609.9	10,060.8				
	NASDAQ Comp	COMP	NA	3,965.6		3,966.71	2,810.80	27.4%	3.9%	37.5%	NM	181.6	208.1	NA	1,945.5	2,084.1				
	Amex Biotech Index	BTK	NA	2,171.1		2,259.60	1,401.81	35.4%	-2.5%	49.0%	NM	69.7	85.4	NA	270.8	309.7				
	NASDAQ Biotech	NBI	NA	2,170.5		2,232.52	1,329.03	46.9%	-2.8%	57.4%	NM	49.6	70.5	NA	293.6	336.3				
Mkt Cap. Range	Company	Ticker	Rating	Price Change From High Low		P/E 2012A 2013E 2014E			Price/Sales 2012A 2013E 2014E			Price/Debt BV			EV/ EBITDA Net Inc. FCF Sales BV					
Mid	Medivation	MDVN	NC	-6.8%	49.9%	NA	NA	83.0	26.07	19.05	11.00	19.50	23.09	63.74	(191.0)	(89.8)	NA	25.9	63.2	
Large	Alexion	ALXN	NC	-7.7%	42.5%	54.7	38.3	33.8	20.16	14.84	11.69	17.55	182.90	11.52	52.7	36.3	55.8	19.1	10.9	
Large	Amgen	AMGN	NC	-5.2%	39.2%	17.4	15.2	14.0	4.96	4.64	4.39	3.80	3.15	4.50	13.1	16.0	22.1	5.2	4.7	
Large	Biogen Idec	BIIB	NC	-9.9%	74.1%	36.2	26.6	21.3	10.11	8.10	6.82	83.40	79.87	8.02	25.7	26.6	34.3	10.1	8.0	
Large	Celgene	CELG	BUY	-7.6%	103.7%	30.4	25.0	20.1	11.17	9.67	8.14	10.52	13.27	11.00	28.5	24.6	31.6	11.0	10.8	
Large	Gilead	GILD	NC	-6.4%	92.7%	35.1	34.5	22.2	10.83	9.64	7.61	50.24	14.36	11.18	26.3	36.3	39.5	11.4	11.8	
Large	Regeneron	REGN	NC	-13.3%	96.6%	41.1	35.2	28.4	19.58	13.14	10.24	60.62	55.99	21.66	54.7	35.3	NA	19.6	21.7	
Large	Vertex	VRTX	NC	-32.0%	59.2%	NA	NA	NA	9.37	13.62	19.45	9.71	32.05	13.31	318.7	(20.1)	68.6	8.8	12.56	
Large Cap Only (d)						35.8	29.1	20.0	12.3	10.5	9.8	\$33.69	\$33.12	\$11.60	77.5	22.1	42.0	12.2	11.5	

(a) All companies listed on NASDAQ

(b) All figures consensus estimates except for rated companies. Rated companies are Cantor Fitzgerald estimates. EPS and revenue per share exclude option expense and other one-time items, when available, otherwise EPS actual and estimates reflect non GAAP format.

(c) ImmunoGen CY estimates represent fiscal year-end (June) figures.

(d) Excludes Spectrum Pharmaceuticals (SPPI)

Source: Cantor Fitzgerald research, FactSet

Company Description

Heat Biologics is a development-stage company focused on therapeutic cancer vaccines employing the company's proprietary technology that harnesses the immune-provoking ability of gp96, a heat shock protein, in an allogeneic, "off the shelf," vaccine.

Companies Mentioned:

Advaxis, Inc. (ADXS - OTC BB): NC
 Agenus Inc. (AGEN - NASDAQ): NC
 Agios Pharmaceuticals, Inc. (AGIO - NASDAQ): NC
 Alexion Pharmaceuticals Inc. (ALXN - NASDAQ): NC
 Ambit Biosciences Corporation (AMBI - NASDAQ): NC
 Amgen Inc. (AMGN - NASDAQ): NC
 Ariad Pharmaceuticals Inc. (ARIA - NASDAQ): NC
 Array BioPharma, Inc. (ARRY - NASDAQ): NC
 Biogen Idec (BIIB - NASDAQ): NC
 bluebird bio, Inc. (BLUE - NASDAQ): NC
 Celgene Corporation (CELG - NASDAQ): BUY
 Celldex Therapeutics, Inc. (CLDX - NASDAQ): BUY
 ChemoCentryx Inc. (CCXI - NASDAQ): NC
 Cleveland BioLabs, Inc. (CBLI - NASDAQ): BUY
 Clovis Oncology Inc. (CLVS - NASDAQ): NC
 Curis Inc. (CRIS - NASDAQ): NC
 Cyclacel Pharmaceuticals, Inc. (CYCC - NASDAQ): NC
 CytRx Corporation (CYTR - NASDAQ): NC
 Dendreon Corporation (DNDN - NASDAQ): HOLD
 Enanta Pharmaceuticals, Inc. (ENTA - NASDAQ): NC
 Endocyte Inc. (ECYT - NASDAQ): NC
 Epizyme, Inc. (EPZM - NASDAQ): NC
 Exelixis Inc. (EXEL - NASDAQ): NC
 Galena Biopharma (GALE - NASDAQ): BUY
 Gilead Sciences Inc. (GILD - NASDAQ): NC
 Heat Biologics, Inc. (HTBX - NASDAQ): BUY
 ImmunoCellular Therapeutics Ltd. (IMUC - NASDAQ): NC
 ImmunoGen, Inc. (IMGN - NASDAQ): HOLD
 Incyte Corporation (INCY - NASDAQ): NC
 Infinity Pharmaceuticals, Inc. (INFI - NASDAQ): NC
 Inovio Pharmaceuticals, Inc. (INO - NYSE): NC
 Intercept Pharmaceuticals, Inc. (ICPT - NASDAQ): NC
 Medivation Inc. (MDVN - NASDAQ): NC
 Merrimack Pharmaceuticals Inc. (MACK - NASDAQ): NC
 NewLink Genetics Corporation (NLNK - NASDAQ): BUY
 OncoMed Pharmaceuticals, Inc. (OMED - NASDAQ): NC
 OncoSec Medical Inc. (ONCS - NASDAQ): NC
 Oncothyreon Inc. (ONTY - NASDAQ): BUY
 Pharmacyclics Inc. (PCYC - NASDAQ): NC
 Progenics Pharmaceuticals, Inc. (PGNX - NASDAQ): NC
 Receptos, Inc. (RCPT - NASDAQ): NC
 Regeneron Pharmaceuticals Inc. (REGN - NASDAQ): NC
 Regulus Therapeutics Inc. (RGLS - NASDAQ): NC
 Seattle Genetics, Inc. (SGEN - NASDAQ): SELL
 Stemline Therapeutics, Inc. (STML - NASDAQ): NC
 Sunesis Pharmaceuticals, Inc. (SNSS - NASDAQ): BUY
 Synta Pharmaceuticals Corp. (SNTA - NASDAQ): NC
 Tesaro, Inc. (TSRO - NASDAQ): NC
 Verastem, Inc. (VSTM - NASDAQ): BUY
 Vertex Pharmaceuticals Inc. (VRTX - NASDAQ): NC
 Lonza (private)

Disclosures Appendix

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BUY: We have a positive outlook on the stock based on our expected 12 month return relative to its risk. The expected return is based on our view of the company and industry fundamentals, catalysts, and valuation. We recommend investors add to their position.

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Distribution of Ratings/Investment Banking Services (IB) as of 11/14/13

Rating	Cantor		IB Serv./Past 12 Mos.	
	Count	Percent	Count	Percent
BUY [B]	87	56.86	21	24.14
HOLD [H]	55	35.95	5	9.09
SELL [S]	11	7.19	1	9.09