AEGIS CAPITAL CORP

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**Company Update / Price Target Change / Estimates Change**

May 27, 2014

# Heat Biologics, Inc.

# Rating: Buy

## Timeline Lengthens - Reducing Price Target

**Key Metrics**

| | |
|---|---|
| HTBX - NASDAQ | $4.48 |
| Pricing Date | May 23 2014 |
| Price Target | $22.00 |
| 52-Week Range | $15.29 - $3.86 |
| Shares Outstanding (mm) | 6.4 |
| Market Capitalization ($mm) | $28.7 |
| 3-Mo Average Daily Volume | 22,533 |
| Debt/Total Capital | NM |
| ROE | NM |
| Book Value/Share | $3.12 |
| Price/Book | 1.4x |
| Dividend Yield | NM |
| LTM EBITDA Margin | NM |

**EPS ($) FY: December**

| | 2013A | Prior 2014E | Curr. 2014E | Prior 2015E | Curr. 2015E |
|---|---|---|---|---|---|
| 1Q-Mar | (1.66) | (0.39)E | (0.36)A | (0.43)E | (0.37)E |
| 2Q-Jun | (0.92) | (0.38)E | (0.41)E | (0.45)E | (0.32)E |
| 3Q-Sep | (0.48) | (0.37)E | (0.45)E | (0.48)E | (0.35)E |
| 4Q-Dec | (0.32) | (0.40)E | (0.48)E | (0.52)E | (0.37)E |
| FY | (2.42) | (1.53)E | (1.73)E | (1.89)E | (1.41)E |
| P/E | NM | | NM | | NM |


*Source: BigCharts.com*

***Company Description:***

*Heat Biologics, Inc. (http://www.heatbio.com/) is an emerging biotechnology firm focusing on the development of novel oncology-focused therapeutics.*

## Investment Highlights:

- **Clinical Delays - Reducing Price Target.** We are revising our valuation assumptions on Heat Biologics in light of the lengthened timeline that the company has laid out for the achievement of proof-of-concept data in its ongoing clinical development programs. We note in particular that the lung cancer initiative with HS-110 is unlikely to report efficacy data until 2017. Given these considerations, we are reiterating our Buy rating while instituting a 12-month price target of $22.00 per share vs. our original 18-month price target of $36.00 per share on HTBX.
- **Bladder Cancer Study Represents Principal Value Driver.** Heat Biologics is currently running a Phase 1 / 2 bladder cancer trial assessing its lead product candidate HS-410. This is a 93-patient, multi-center study designed to determine whether vaccination with HS-410 after trans-urethral resection of bladder tumor (TURBT) and bacillus Calmette-Guerin (BCG) extends time to disease recurrence vs. placebo. The firm has indicated that the first cohort in this trial is likely to be fully enrolled by the end of the third quarter, with the second cohort expected to be fully enrolled by the end of the year. However, data is unlikely to become available until 2015 in this trial.
- **Platform Validation Beyond Oncology Needed.** We feel that the ImPACT™ technology platform has potential in various disease areas and would look for Heat to become more aggressive in establishing licensing deals on the usage of the platform for non-cancer purposes with established pharmaceutical companies. Such areas would include, for example, the domain of infectious disease. If Heat can consummate such transactions near-term, they should be a source of non-dilutive funding and simultaneously validate the company's approach for therapeutic purposes outside of cancer.
- **Attractive Valuation.** Heat trades at an enterprise value of <$10mm. NewLink Genetics (NLNK/NASDAQ, Not Rated), trades at an $550mm market cap. While the interim analysis of NewLink's ongoing Phase 3 pancreatic cancer study of that firm's immunotherapy platform, designated HyperAcute®, resulted in the recommendation that the trial continue instead of being terminated early, we note that NewLink's Phase 3 program continues and should reach further interim analysis points in the coming months. We remain convinced that the ImPACT™ approach should perform better than HyperAcute® in clinical studies. If the HyperAcute® Phase 3 trial does achieve success, it should provide confidence in the Heat platform.

The Disclosure section may be found on pages 10 - 12 of this report.

# Investment Risks

**Development Risk.** While Heat Biologics could develop multiple potential product candidates for the treatment of distinct types of cancer, demonstrating the flexibility and reach of its proprietary technology platform, thus far none of the firm's product candidates have entered pivotal trials or demonstrated success in such studies. The firm's lead candidates may not show positive safety and efficacy, which could preclude their approval and commercialization. If both the bladder cancer and non-small cell lung cancer (NSCLC) Phase 2 proof-of-concept studies fail to show efficacy, Heat Biologics could be unable to secure partnerships with established firms or raise sufficient capital to continue to fund operations. The firm does not generate revenue from operations and is dependent upon the success of its candidates to attract partnering interest.

**Regulatory Risk.** Oncology drug development guidelines from the U.S. FDA have undergone substantial revision in recent years. While previously data on endpoints such as progression-free survival and tumor response were sufficient to obtain approval for drugs – especially those targeting difficult-to-treat patient populations – more recently the FDA has exhibited an unwillingness to accept less stringent endpoint-based data as hard evidence of efficacy. We note that it will be crucial for Heat Biologics to obtain regulatory authority acceptance of the firm's proposed clinical trial designs in order to permit the company's product candidates to stand a chance of approval.

**Commercial Risk.** Heat Biologics is an unproven firm in the domain of therapeutic agent commercialization. The company currently has no sales or marketing infrastructure and is therefore dependent on its ability to raise additional funds with which to build such an infrastructure, and/or its capacity to partner its candidate therapies with a more established entity in order to permit successful commercialization.

**Partnership Risk.** Should Heat Biologics elect to out-license the commercial and/or development rights to its clinical-stage candidates, it would need to find a partner or partners for whom these candidates represent tangible value, and under whom said candidates would be developed and commercialized in a timely manner. If Heat were to enter into partnerships with entities that do not have sufficient clinical knowhow or commercial capability, the development and marketing of the company's assets could suffer. Heat Biologics may also be forced to enter into such partnerships under terms that are unfavorable or that do not accrue meaningful revenue to the firm. Heat's strategic partners may not prioritize the development of its candidates sufficiently.

**Competitive Landscape Risk.** Many of the target markets that Heat Biologics could compete in using product candidates developed with its ImPACT™ technology platform are already at least partially addressed using existing drugs. In the case of bladder cancer, agents such as Adriamycin (doxorubicin hydrochloride), Camptosar (irinotecan), Gemzar (gemcitabine), Halaven (eribulin), Platinol (cisplatin), and interferon-alfa-2b are typically deployed. Approved drugs that are routinely used for treatment of other types of cancer are continually being assessed in bladder cancer, both as single-agent therapy or in combination. Such agents include Sutent (sunitinib), Nexavar (sorafenib), Velcade (bortezomib), and Votrient (pazopanib). Product candidates currently in clinical testing for use in bladder cancer include EOquin (apaziquone), being developed by Spectrum Pharmaceuticals; TMX-101, being developed by Telormedix; AZD4877 from AstraZeneca; ALT-801, a p53-specific scTCR/IL-2 fusion protein, being developed by Altor Therapeutics; AMG 386 (trebananib) from Amgen; and BKM120 from Novartis AG. The lung cancer landscape is, if anything, even more crowded. Heat Biologics would need to show highly compelling efficacy and safety data to compete with these agents in a sustainable manner and eke out a market niche.

**Royalty / Milestone Liability Risk.** The business model for Heat Biologics implies that the company should enter into R&D arrangements with third parties that often require milestone and royalty payments to the third party contingent upon the occurrence of certain future events linked to the success of the asset in development. Milestone payments may be required, contingent upon the successful achievement of an important point in the development life-cycle of the pharmaceutical product (e.g., approval of the product for marketing by a regulatory agency). Under existing arrangements, Heat Biologics must make royalty payments to its licensors based upon a percentage of the sales of its proprietary products if regulatory approval for marketing is obtained.

**Patent Risk.** The pharmaceutical industry is an inherently litigious arena. Generic drug manufacturers may challenge Heat Biologics's issued patents. If the firm's patent estate is found to be invalid or unenforceable upon challenge from generic competitors, significant pricing pressure could result in destruction of the franchise. Investors should take note that some of the core patents in the Heat Biologics intellectual property (IP) begin to expire in the 2019 time frame. However, we note that the vast majority of the patents in the Heat Biologics portfolio have expiration dates in 2029 and beyond without factoring in the potential impact of patent term extensions.

**Reimbursement Risk.** Recently, reimbursement agencies have grown more wary of systematically reimbursing for drugs that do not provide cost-effective benefit. If Medicare spending growth continues to outpace GDP growth, changes could be made to reimbursement policy that would negatively affect the commercial prospects for Heat's product candidates, years before these agents even reach the market.

**Additional Risks.** As of March 31st, 2014, Heat Biologics had about $19.4 million in cash and equivalents. Given the estimated operational cash burn of roughly $8.2 million over the remainder of 2014 and $15 million for the whole of 2015, we believe that the current cash position should be sufficient to fund operations into the second half of 2015. Additional funding could come from equity offerings, warrant exercises, and partnerships. Should the firm's clinical programs in bladder cancer and lung cancer fail in proof-of-concept efficacy testing, the firm may not be able to raise cash at all.

**Industry Risks.** Emerging development-stage healthcare-focused stocks are inherently volatile and increasingly subject to regulatory risk. Meeting or missing clinical milestones may result in a significant change in the perception of the company and the stock price. We do not expect volatility to subside near term.

For additional risk considerations, please refer to the company's SEC filings.

# Valuation

**Comparables Analysis:** Given that Heat Biologics is currently unprofitable and likely to remain so for the foreseeable future, we use a comparables analysis as part of our valuation approach. This results in a 12-month target valuation of roughly $22.00 per share, utilizing our estimate of a ~$280 million total firm value. This assumes that the shares trade in-line with the comp group's average enterprise value of ~$240 million and that the firm has roughly 13 million shares outstanding (fully-diluted) as of mid-2015.

## Table 1: Comparable Company Analysis
**(Millions, Except Per-Share Data)**

| Development Stage | Therapeutic Area | Company | Ticker | Rating | Closing price 5/23/2014 | Shares (MM) | Market cap ($MM) | Cash ($MM) | Debt ($MM) | Enterprise value ($MM) |
|---|---|---|---|---|---|---|---|---|---|---|
| Phase 2 / 3 | Cancer Vaccines | Advaxis | ADXS | Buy | $2.56 | 19 | 48 | 29 | 0 | 19 |
| Phase 3 | Cancer Vaccines | Agenus | AGEN | Not Rated | $2.64 | 62 | 164 | 73 | 9 | 100 |
| Phase 2 / 3 | Oncology | Epizyme | EPZM | Not Rated | $23.03 | 33 | 757 | 237 | 0 | 520 |
| Phase 2 / 3 | Cancer Vaccines | ImmunoCellular Therapeutics | IMUC | Not Rated | $1.31 | 58 | 76 | 25 | 0 | 51 |
| Phase 2 | Oncology / Asthma / Inflammation | Infinity Pharmaceuticals | INFI | Not Rated | $9.40 | 49 | 456 | 172 | 0 | 285 |
| Phase 3 | Cancer Vaccines | NewLink Genetics | NLNK | Not Rated | $19.90 | 28 | 555 | 84 | 1 | 472 |
| Phase 3 | Cancer Vaccines | Northwest BioTherapeutics | NWBO | Not Rated | $5.83 | 57 | 333 | 12 | 1 | 322 |
| Phase 3 | Cancer Stem Cell Targeting | OncoMed Pharmaceuticals | OMED | Not Rated | $22.30 | 30 | 659 | 284 | 0 | 375 |
| Phase 2b | Cancer Stem Cell Targeting | Stemline Therapeutics | STML | Buy | $13.84 | 13 | 179 | 76 | 0 | 103 |
| Phase 2 | Cancer Stem Cell Targeting | Verastem, Inc. | VSTM | Not Rated | $9.03 | 26 | 233 | 106 | 0 | 128 |
| | | Average | | | | | 406 | | | 240 |
| | | | | | | | | Discrepancy | | |
| Current valuation | Cancer Vaccines | Heat Biologics | HTBX | Buy | $4.48 | 7 | 32 | 19 | 0 | 12 |
| | | Derived 18-month comparable value | | | | | | | | Projected |
| Target valuation (18-month) | Cancer Vaccines | Heat Biologics | HTBX | Buy | $22.00 | 13 | 280 | 40 | 0 | 240 |

*Source: First Call and Aegis Capital Corp. estimates*

**Free Cash Flow:** We estimate that Heat Biologics could be free cash flow-negative for the foreseeable future. We project that the firm might only obtain regulatory approval for its lead clinical program in bladder cancer in the late 2018 / early 2019 timeframe.

We define free cash flow as operating cash flow minus capital expenditures and dividend payments. We utilize a combination of a comparables-based enterprise value framework and a discounted cash flow analysis including risk-adjusted Net Present Value (rNPV) calculations for Heat Biologics's pipeline in order to derive our $22.00 price target.

We have conservatively modeled future cash flows from sales of the firm's drug candidates assuming a 40% corporate tax rate, since Heat Biologics's low burn rate and relatively limited operating history mean that there is no significant net loss carry-forward amount available to offset future tax liability. Our valuation methodology may be conservative and there could be upside to our estimates if the firm succeeds in accruing substantial net operating loss carry-forwards during the clinical development process or is able to accumulate R&D tax credits to offset future taxable income.

**Risk-Adjusted Net Present Value (rNPV) Analysis:** We have herein presented our discounted cash flow (DCF)-based analysis of Heat Biologics. Our assessment provides for risk-adjusted Net Present Value (rNPV)-based valuations of each of Heat's clinical and preclinical candidates as well as the firm's ImPACT™ technology platform, which in total yields a projected enterprise value of $240 million. We add to this the projected mid-2015 cash position of $40 million to derive our total firm value projection of ~$280 million, which implies a projected price per share of $22.00 as of mid-2015.

## Table 2: Heat Biologics Risk-Adjusted Net Present Value (rNPV)

| Heat Biologics, Inc. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Product | Launch Year | Patent Expiry | Peak Sales | Royalty Rate | Probability To Launch | NPV | Amount Per Share |
| **Phase 2** | | | | | | | | |
| Bladder Cancer | **HS-410** | 2017 | 2029 | $1.3B | 15-30% | 50% | $110MM | $8.70 |
| Lung Cancer | **HS-110** | 2019 | 2029 | $1.5B | 12-25% | 50% | $70MM | $5.50 |
| **Preclinical** | | | | | | | | |
| Pancreatic Cancer | **HS-210** | 2021 | 2029 | NA | NA | NA | $20MM | $1.60 |
| Ovarian Cancer | **HS-310** | 2020 | 2029 | NA | NA | NA | $10MM | $0.80 |
| Triple Negative Breast Cancer | **HS-510** | 2022 | 2029 | NA | NA | NA | $5MM | $0.40 |
| **Platform** | | | | | | | | |
| ImPACT™ Technology | **NA** | NA | 2029 | NA | NA | NA | $25MM | $2.00 |
| **Total** | | | | | | | $240MM | $19.00 |
| **Debt at mid-2015** | | | | | | | $0MM | $0.00 |
| **Cash at mid-2015** | | | | | | | $40MM | $3.00 |
| **Firm Value** | | | | | | | $280MM | $22.00 |

*Source: Company reports and Aegis Capital Corp. estimates*

Our assumptions include a patent window through to 2029 (without factoring patent term extensions); an effective tax rate of 40% applied to future revenues; and a discount factor of 15% applied to future cash flows. The principal components of our composite rNPV are HS-410 (vesigenurtacel-T) and HS-110 (viagenpumatucel-T), which contribute $110 million and $70 million to the total projected enterprise value respectively.

We assign a $25 million rNPV for the firm's ImPACT™ technology platform, which may be conservative when considering the fact that the platform could potentially permit the generation of therapeutic candidates that could be deployed against virtually any solid tumor type, and may also be utilizable in areas beyond cancer, such as infectious disease.

# Lung Cancer Clinical Program

Originally, Heat's lead candidate for NSCLC, HS-110, was tested in a Phase 1 trial among subjects who had previously failed multiple rounds of standard-of-care chemotherapy (including treatment with various platinum agents). This patient population had histologically or cytologically confirmed malignant solid tumors that had relapsed or proven refractory to standard therapy, and had received prior radiation therapy with stable CNS metastasis and no progression of brain metastases as assessed via CT/MRI scan in the prior four weeks. Life expectancy was > three months. Among the 18 patients treated, 15 completed the first course of therapy, while two patients completed three courses of therapy. The key findings were as follows:

- HS-110 was well-tolerated with no overt toxicity and no treatment-related SAEs
- Single-agent clinical activity was observed in late-stage 3b and 4 lung cancer
- As is typical in immunotherapy, no observed partial or complete responses
- Seven patients exhibited stable disease after single course of therapy
- A clear and robust immune response was observed in 73% (11 out of 15) of patients who completed their first course of therapy
- The immune response was shown to be predictive of survival (HR: 0.021, 95% CI:0.002-0.204)
- The 11 immune responders exhibited a median survival of 16.9 months (95% CI: 7.1-20) while the four immune non-responders exhibited a median survival of 4.5 months, which is consistent with the expected survival times in this patient population
- Two late-stage patients have survived for >3 years; one HS-110 patient remains alive >3 years after treatment, and another patient is still alive >4 years later
- The median one-year overall survival rate of patients in the study was 44% (95% CI: 21.6-65.1), comparing highly favorably to a 5.5% rate based on published data from a 43-patient advanced NSCLC population

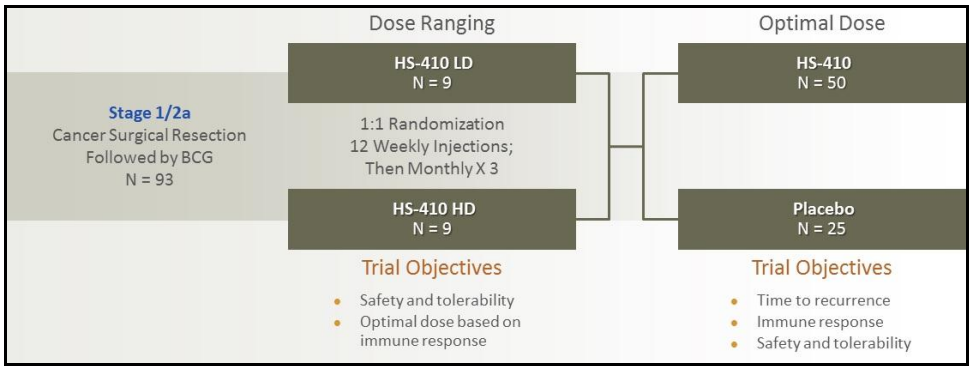
We believe that there are two principal takeaways from this. It has not escaped our attention that the vast majority of single-center, open-label, non-randomized studies in oncology do not typically turn out to be reproducible in a controlled, more robustly-powered context. However, we would point out that a) the survival impact seen here was quite striking, even in such a small patient population; and b) there was a clear mechanistic rationale for why the responders performed so well and this dovetails highly plausibly with the mechanism proposed for the drug itself.

Heat Biologics submitted a revised clinical trial protocol for its planned Phase 2 NSCLC study in March 2014. The envisaged Phase 2 NSCLC trial is a multi-center, randomized 120-patient program expected to encompass 20-30 trial centers. This Phase 2 study in the 3rd line setting will evaluate multiple efficacy endpoints including overall survival and response rates as well as immune response to HS-110 plus low-dose cyclophosphamide versus chemotherapy alone. The addition of low-dose cyclophosphamide as an immune stimulator allows Heat to simulate the response to HS-110 that might occur if it is combined with other novel immune checkpoint inhibitors. The firm's lead investigator for this Phase 2 study is Roger B. Cohen, M.D., Professor of Medicine at the University of Pennsylvania and Associate Director for Clinical Research for the Abramson Cancer Center. Dr. Cohen is an active investigator on a number of clinical trials with research interests that focus on evaluation of novel therapies, including monoclonal antibodies, immune therapies, and small molecule cell-signaling pathway inhibitors. He primarily sees patients with lung and head and neck cancer. We note that this trial design is substantially more sophisticated than the original protocol that Heat had formulated. In addition, it does not involve any interim analysis and therefore we do not anticipate seeing efficacy data from this study until 2017.

# Bladder Cancer Clinical Program

Heat Biologics is pursuing an adaptive design for its Phase 1 / 2 bladder cancer trial. In this case, the company is planning to utilize the study to conduct both dose-ranging assessments in order to select the optimum immunologically stimulating dose as well as efficacy measurement via time to recurrence. In our view, the hurdle in such a trial is relatively low and Heat Biologics should easily be able to observe an efficacy signal if the ImPACT™ platform hypothesis is valid.

**Figure 2: HS-410 Bladder Cancer Phase 2 Trial Design**




*Source: Heat Biologics*

In this study, the majority of patients enrolled are likely to have either *in situ* bladder cancer or minimally invasive disease. The treatment paradigm is likely to be surgery followed by six weeks of interstitial BCG therapy, with HS-410 being administered within existing standard-of-care guidelines. Heat Biologics announced that it had begun enrolling patients in this study in early March 2014. The trial is slated to complete enrolment of the first cohort by the end of the third quarter of 2014. Heat believes that immune response data from this first stage could become available early in 2015. If the immune response data are favorable and the dose-ranging portion of the trial permits Heat to select an optimal dose, which we view as a low-risk event, the company plans to move on to the second stage of the trial, which will be aimed at determining efficacy. Since the time-to-recurrence parameter is likely to be a relatively straightforward endpoint to measure and bladder cancer patients tend to recur relatively rapidly after surgery, we believe that a reasonably convincing answer regarding the efficacy profile of HS-410 could be obtained either in late 2015 or early 2016.

Positive data on the time-to-recurrence parameter, clearly correlated with immune response data, should clearly establish the validity of the ImPACT™ technology platform approach and potentially position Heat Biologics to execute a broad licensing deal or a product development partnership with a more established company in the biopharmaceutical sector. Alternatively, the company could pursue a strategic sale. As mentioned previously, the firm's organizational structure lends itself well to a wide range of possible options. Since each individual clinical program is housed inside a separate, wholly-owned subsidiary, Heat Biologics could either sell itself in its entirety or elect to sell off discrete subsidiaries as the candidates inside those entities reach maturity on the clinical development front. In our view, this approach maximizes shareholder value and allows Heat to pursue the course that yields the most significant return on investment. We note that the ongoing clinical development programs in bladder cancer and NSCLC, as well as the early-stage preclinical programs in other solid tumor indications, provide a substantial illustration of the broad potential of the ImPACT™ platform in oncology, while noting that it may have applicability in other areas as well.

# Capital Structure

As of March 31st, 2014, Heat Biologics had approximately $19.4 million in cash and cash equivalents. In late July 2013, the company raised gross proceeds of $25 million in a registered direct offering of 2.5 million shares of common stock priced at $10 per share. Subsequently, in August 2013, the firm received an additional $200,000 in gross proceeds from the partial exercise of an over-allotment granted to the underwriters of the IPO. The firm had 6.45 million shares outstanding and issued as of the end of the first quarter of 2014. The table below depicts the firm's current capital structure, including all remaining options and warrants associated with previous financings. As shown below, the fully-diluted share count for Heat Biologics currently stands at about 7 million shares.

**Table 3: Heat Biologics Current Capital Structure**

| | Number of Shares | Exercise Price | Expiration Date | Total Cash |
|---|---|---|---|---|
| Cash, cash equivalents and marketable securities | | | | $19,439,794 |
| Common Stock | 6,452,341 | | | |
| Options | 599,486 | $0.002-$8.81 | 2019-2020 | $5,899,320 |
| Common stock warrants | 17,392 | $0.48 | | $8,348 |
| Warrants | 125,000 | $12.50 | 2018 | $1,562,500 |
| **Fully Diluted Shares** | **7,069,219** | | | **$26,909,962** |

*Source: Company reports*

# Financing History

Since inception, Heat Biologics has raised a total of approximately $33 million. In the most recent financing, the company raised net proceeds of approximately $23 million in an initial public offering of 2.5 million shares plus an over-allotment amount of 200,000 shares, priced at $10.00 per share. The additional 200,000 shares represent a partial exercise of the total granted over-allotment of 375,000 shares of common stock. We note that, from inception until the point of the IPO, Heat Biologics has demonstrated an extremely cost-effective operating strategy that led to an accumulated deficit of only $8.3 million over the course of roughly five years in operation. The company has judiciously funded its drug development efforts with grants and other non-dilutive forms of capital.

**Table 4: Heat Biologics Financing History**

| | | Net Proceeds | Shares | Price | Notes |
|---|---|---|---|---|---|
| **Private Company** | | | | | |
| | Common Stock | $ 1,290 | 1,861,689 | $.0002-$.76 | |
| | Preferred Series 1 | $ 250,000 | 49,960 | $ 5.00 | |
| | Preferred Series A | $ 3,912,569 | 810,057 | $ 4.83 | |
| | Preferred Series B | $ 5,050,090 | 872,833 | $ 5.79 | The number of Series B shares includes dividends of 14,291 & an additional 36,167 shares of common stock |
| **Public Company** | | | | | |
| | IPO | $ 22,946,725 | 2,500,000 | $ 10.00 | |
| | Secondary | $ 930,000 | 100,000 | $ 10.00 | |
| **Total Amount** | | $ 33,090,674 | 6,194,539 | | |

*Source: Company reports*

**Table 5: Heat Biologics, Inc. (HTBX) – Historical Income Statements, Financial Projections**

FY end December 31
$ in thousands, except per share data

| | | | 2014E | | | | | 2015E | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2012A | 2013A | 1QA | 2QE | 3QE | 4QE | 2014E | 1QE | 2QE | 3QE | 4QE | 2015E |
| **Revenue** | | | | | | | | | | | | |
| Product revenue | - | - | - | - | - | - | - | - | - | - | - | - |
| Service revenue | - | - | - | - | - | - | - | - | - | - | - | - |
| Research and other | 3 | - | - | - | - | - | - | - | - | - | - | - |
| **Total revenue** | 3 | - | - | - | - | - | - | - | - | - | - | - |
| Expenses | | | | | | | | | | | | |
| Cost of product and service revenue | - | - | - | - | - | - | - | - | - | - | - | - |
| Research & development | 903 | 2,738 | 534 | 550 | 600 | 650 | 2,334 | 700 | 750 | 800 | 850 | 3,100 |
| Clinical and regulatory | 253 | 1,397 | 846 | 1,000 | 1,100 | 1,200 | 4,146 | 1,300 | 1,500 | 1,800 | 2,100 | 6,700 |
| General and administrative | 1,190 | 2,430 | 1,015 | 1,100 | 1,200 | 1,300 | 4,615 | 1,400 | 1,500 | 1,500 | 1,500 | 5,900 |
| **Total expenses** | 2,346 | 6,565 | 2,395 | 2,650 | 2,900 | 3,150 | 11,095 | 3,400 | 3,750 | 4,100 | 4,450 | 15,700 |
| **Gain (loss) from operations** | (2,343) | (6,565) | (2,395) | (2,650) | (2,900) | (3,150) | (11,095) | (3,400) | (3,750) | (4,100) | (4,450) | (15,700) |
| Other income/expense | | | | | | | | | | | | |
| Interest income/expense | (101) | (69) | (28) | (35) | (40) | (45) | (148) | (50) | (55) | (60) | (65) | (230) |
| Realized loss on marketable securities | | (2,300) | - | - | - | - | - | - | - | - | - | - |
| Other income/expense | (27) | 24 | - | - | - | - | - | - | - | - | - | - |
| **Total investment income and other** | (128) | (2,345) | (28) | (35) | (40) | (45) | (148) | (50) | (55) | (60) | (65) | (230) |
| **Loss before provision for income taxes** | (2,471) | (8,910) | (2,423) | (2,685) | (2,940) | (3,195) | (11,243) | (3,450) | (3,805) | (4,160) | (4,515) | (15,930) |
| Deferred income tax benefit | - | - | - | - | - | - | - | - | - | - | - | - |
| **Net income (loss)** | (2,471) | (8,910) | (2,423) | (2,685) | (2,940) | (3,195) | (11,243) | (3,450) | (3,805) | (4,160) | (4,515) | (15,930) |
| **Net income (loss) - non-controlling interest** | - | (199) | (92) | - | - | - | (92) | - | - | - | - | - |
| **Preferred stock dividend** | - | (362) | | | | | | | | | | |
| **Net income (loss) attributable to common shareholders** | (2,471) | (9,073) | (2,331) | (2,685) | (2,940) | (3,195) | (11,335) | (3,450) | (3,805) | (4,160) | (4,515) | (15,930) |
| **Net loss per share (basic)** | (1.32) | (2.42) | (0.36) | (0.41) | (0.45) | (0.48) | (1.73) | (0.37) | (0.32) | (0.35) | (0.37) | (1.41) |
| Net loss per share (diluted) | (1.32) | (2.42) | (0.36) | (0.41) | (0.45) | (0.48) | (1.73) | (0.37) | (0.32) | (0.35) | (0.37) | (1.41) |
| Weighted average number of shares outstanding (basic) | 2,055 | 3,747 | 6,413 | 6,502 | 6,602 | 6,702 | 6,555 | 9,302 | 11,902 | 12,002 | 12,102 | 11,327 |
| Weighted average number of shares outstanding (diluted) | 2,055 | 3,747 | 6,413 | 6,502 | 6,602 | 6,702 | 6,555 | 9,302 | 11,902 | 12,002 | 12,102 | 11,327 |

*Source: Company Reports and Aegis Capital Corp. estimates*

## Required Disclosures

## Price Target

Our 12-month price target is $22.00 per share.

## Valuation Methodology

We utilize a discounted cash flow analysis supporting a risk-adjusted Net Present Value framework to derive the price target. Intrinsic value for the company's product candidates is calculated based upon the size of the market, projected peak penetration rate, competitive landscape, probability of approval based on publicly available clinical data, length of patent term protection and other factors. Intrinsic values are then added to derive the price target.

## Risk Factors

Issues that could prevent the achievement of our price objective include, but are not limited to, clinical, regulatory, competitive, reimbursement and financial risks. Drugs in clinical development may not advance due to inadequate safety, efficacy, or tolerability. Regulatory agencies may decline to approve regulatory submissions in a timely manner, or may not approve a drug candidate at all. The firm may require substantial funding to advance the clinical progress of its candidates, which could be dilutive to current shareholders. We expect competition for the company's drugs from several public and private companies developing pharmaceuticals. Sales of the firm's products could depend upon reimbursement from private, as well as public, reimbursement agencies.

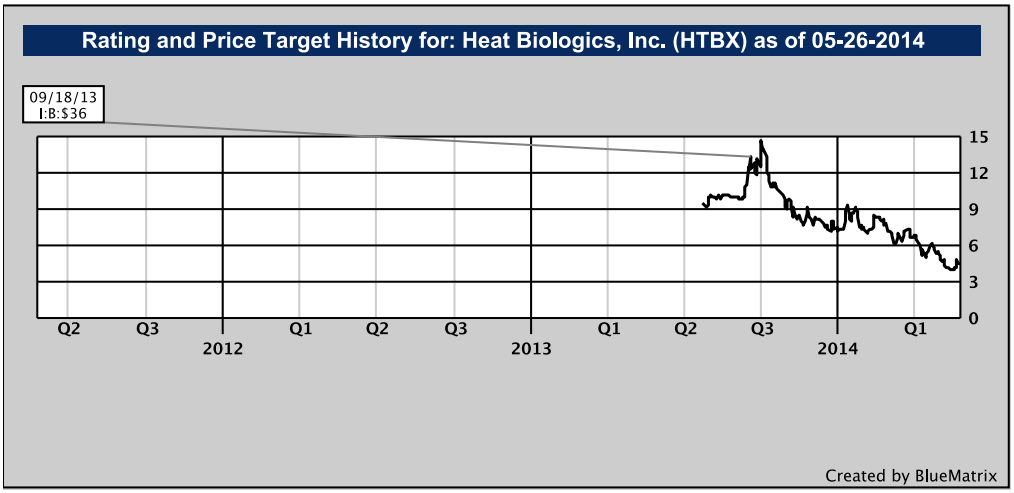
## For important disclosures go to www.aegiscap.com.

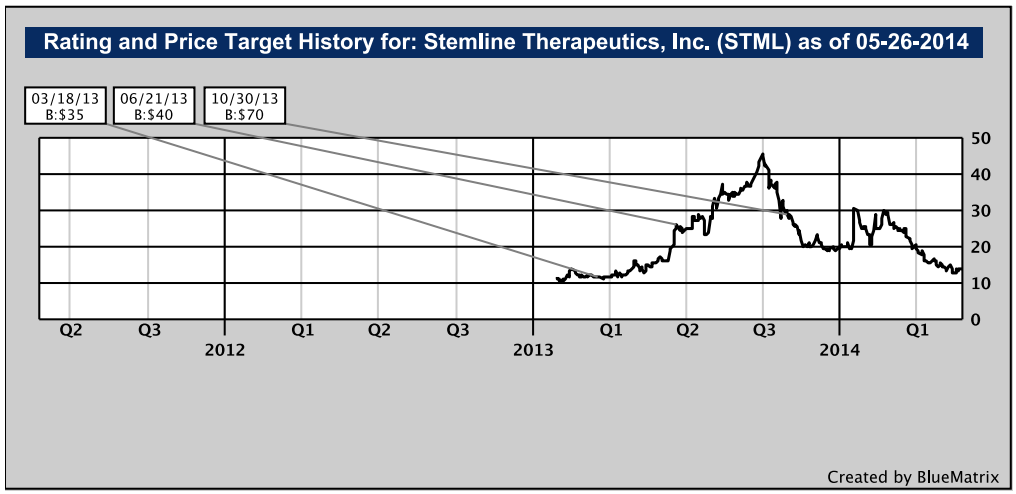
Research analyst compensation is dependent, in part, upon investment banking revenues received by Aegis Capital Corp.

Aegis Capital Corp. intends to seek or expects to receive compensation for investment banking services from the subject company within the next three months.

Aegis Capital Corp. has performed investment banking services for and received fees from Heat Biologics, Inc. and Advaxis, Inc. within the past 12 months.

Aegis Capital Corp. makes a market in Heat Biologics, Inc. and Advaxis, Inc..




| Rating | Percent | Investment Banking Services/Past 12 Mos. Percent |
|---|---|---|
| BUY [BUY] | 78.26 | 41.67 |
| HOLD [HOLD] | 21.74 | 20.00 |
| SELL [SELL] | 0.00 | 0.00 |

Meaning of Ratings

A) A Buy rating is assigned when we do not believe the stock price adequately reflects a company's prospects over 12-18 months.
B) A Hold rating is assigned when we believe the stock price adequately reflects a company's prospects over 12-18 months.
C) A Sell rating is assigned when we believe the stock price more than adequately reflects a company's prospects over 12-18 months.

**Other Disclosures**

The information contained herein is based upon sources believed to be reliable but is not guaranteed by us and is not considered to be all inclusive. It is not to be construed as an offer or the solicitation of an offer to sell or buy the securities mentioned herein. Aegis Capital

Corp., its affiliates, shareholders, officers, staff, and/or members of their families, may have a position in the securities mentioned herein, and, before or after your receipt of this report, may make or recommend purchases and/or sales for their own accounts or for the accounts of other customers of the Firm from time to time in the open market or otherwise. Opinions expressed are our present opinions only and are subject to change without notice. Aegis Capital is under no obligation to provide updates to the opinions or information provided herein. Additional information is available upon request.



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