

## News Release

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### **Boston Biomedical Data at ASCO 2015 Highlights Potential of Novel Investigational Cancer Stem Cell Pathway Inhibitors BBI608 and BBI503 in Multiple Cancer Types**

CAMBRIDGE, Mass. June 1, 2015 – Boston Biomedical, an industry leader in the development of novel compounds designed to target cancer stem cell (CSC) pathways, will present clinical data today on the investigational compounds BBI608 and BBI503 in multiple tumor types at the 2015 American Society of Clinical Oncology (ASCO) annual meeting in Chicago.

Data presented at ASCO highlight the potential of BBI608—an orally-administered investigational agent that targets STAT3, leading to inhibition of the critical genes for maintaining cancer stemness—for anti-cancer activity when used in combination with other chemotherapeutics across varying advanced cancers, including gastric and colorectal. Additionally, as part of the “trials in progress” program, the study protocol from the BRIGHTER study, a phase 3 clinical trial currently underway to investigate cancer stem cell pathway inhibition, is also showcased.

“Recurrence and metastasis remain clinically challenging for oncologists, and require novel treatment advancements to ensure more durable and sustained responses for cancer patients,” said Manish A. Shah, M.D., the Director of Gastrointestinal Oncology at New York-Presbyterian/Weill Cornell Medical Center, Weill Cornell Medical College. “The BBI608 data indicate encouraging early signs of clinical activity, and support the expansive BBI608 clinical development plan including the phase 3 BRIGHTER trial in advanced gastric/gastroesophageal junction cancer.”

Additional data featuring BBI503—an orally-administered investigational agent designed to inhibit Nanog and other cancer stem cell pathways by targeting kinases—showed encouraging early signs of anti-cancer activity for patients with advanced colorectal cancer.

#### **Boston Biomedical poster presentations include:**

##### **Abstract #4069, Poster #179: BBI608-201: Phase 1b/2 study of cancer stemness inhibitor BBI608 combined with paclitaxel in advanced gastric and gastroesophageal junction (GEJ) adenocarcinoma**

- Data from the study showed BBI608 and weekly paclitaxel can be combined in patients with advanced pre-treated gastric/GEJ cancer. Lesion regression, objective responses, and prolonged stable disease were observed in heavily pre-treated patients.

In evaluable patients who had not previously received a taxane in the metastatic setting, and who received one prior line of therapy (n=6), namely the patients that meet the enrollment criteria for the BRIGHTER trial, an objective response rate (ORR) of 50% was observed.

In heavily pretreated patients (failed average >2 lines of prior therapies) who had not previously received a taxane in the metastatic setting (n=16), the ORR was 31% in the per-protocol population. The disease control rate (DCR) was 75%; median progression-free survival (mPFS) was 20.6 weeks and median overall survival (mOS) was 39.3 weeks.

Most common adverse events were grade 1 to 2 diarrhea, nausea, vomiting and abdominal pain. Grade 3 adverse events included vomiting (8.7%), diarrhea of 5 days or longer (6.5%), fatigue (6.5%), abdominal and gastrointestinal pain, nausea, dehydration, anorexia, white blood cell decrease and acute kidney injury (2.2% each).

Continued evaluation of this combination and patient population, specifically in those patients who received one prior line of therapy, is currently underway in the phase 3 BRIGHTER study

**Abstract #TPS4139, Poster #247a: The BRIGHTER trial: A phase 3 randomized, double-blind, placebo-controlled clinical trial of first-in-class cancer stemness inhibitor BBI608 plus weekly paclitaxel versus placebo plus weekly paclitaxel in adult patients with advanced, previously treated gastric and gastro-esophageal junction (GEJ) adenocarcinoma**

- The goal of the BRIGHTER trial (NCT02178956) is to determine if BBI608 given together with paclitaxel as second-line therapy will extend survival compared to treatment with paclitaxel alone. Enrollment is ongoing at multiple sites in North America, Europe, Australia and Japan. BBI608 blocks cancer stem cell renewal and survival by suppressing stemness pathways, including STAT3,  $\beta$ -catenin and immune checkpoint gene expression.

**Abstract #3616, Poster #109: BBI608-246: A phase 1b study of first-in-class cancer stemness inhibitor BBI608 in combination with FOLFIRI with and without Bevacizumab in patients with advanced colorectal cancer**

- Data from the study showed that BBI608 at 240 mg BID can be combined with FOLFIRI, with or without bevacizumab, in patients with advanced and heavily pretreated colorectal cancer (CRC).

Disease control, measured by partial response and stable disease, was observed in 100% of evaluable patients (n=9), including 6 patients who had failed FOLFIRI previously, with partial response in 2/9 patients and stable disease in 7/9 patients, all of whom (9/9 patients) experienced signs of tumor regression. Prolonged stable disease (more than or equal to 6 months) was observed in 5/9 patients (55.6%) of evaluable patients. The median progression-free survival was 23.7 weeks.

Most common adverse events included grade 1 and 2 diarrhea, fatigue, anorexia, nausea, vomiting and abdominal pain. Grade 3 diarrhea was observed in two patients, and resolved with a brief BBI608 dose holiday or dose reduction and anti-diarrheal medications, respectively. Additionally, self-resolving grade 3 fatigue lasting 4-8 days as well as dehydration was observed in one patient.

**Abstract #3617, Poster #110: BBI608-224: A phase 1b/2 study of cancer stemness inhibitor BBI608 administered with Panitumumab in KRAS wild-type patients with metastatic colorectal cancer**

- Results from the study found that BBI608 and bi-weekly panitumumab can be combined at the full dose of 480-500 mg BID.

Of the 24 patients enrolled, nine were anti-EGFR naïve and 15 had previously failed anti-EGFR therapy. Disease control, measured by stable disease and partial response, was observed in 44% of anti-EGFR naïve patients compared to 53.3% of patients who had failed anti-EGFR therapy previously. The median progression-free survival was 9 weeks in anti-EGFR naïve patients.

Also in this study, preliminary activity was observed in K-Ras wild-type mCRC patients regardless of prior anti-EGFR exposure, suggesting BBI608 may have re-sensitized patients to repeat anti-EGFR therapy.

Most common adverse events included grade 1-2 diarrhea, nausea, fatigue, vomiting, abdominal cramping, hypokalemia and anorexia. Grade 3 hypokalemia and diarrhea occurred in three patients, as well as abdominal pain, fatigue, hypomagnesemia, hypophosphatemia and rash in one patient.

Further studies are needed to evaluate the safety and efficacy of this combination and BBI608's potential to re-sensitize patients to anti-EGFR therapy. Encouraging signs of activity were also observed in anti-EGFR naïve patients.

**Abstract #3615, Poster #108: BBI503-101: Phase 1 extension study of BBI503, a first-in-class cancer stemness kinase inhibitor, in patients with advanced colorectal cancer**

- The findings indicated that BBI503 as a monotherapy was tolerated at the recommended phase 2 dose of 300 mg once daily.

Disease control rate (DCR), comprising complete response, partial response and stable disease measures, in evaluated patients with high Nanog biomarker-positive status was 55.6%, while DCR in biomarker-negative patients was 12.5%. Median overall survival in biomarker-positive patients was 38.0 weeks compared to 15.9 weeks in biomarker-negative patients.

At the recommended phase 2 dose, common adverse events were grade 1 to 2 diarrhea, nausea, abdominal cramping, anorexia and fatigue, and grade 3 adverse events were fatigue (n= 4), and diarrhea, nausea, and weight loss (n=1 each)

This study underscores that further clinical evaluation of BBI503 alone or in combination with standard chemotherapeutic agents in advanced colorectal cancer is warranted.

Also, findings from a publication-only abstract are available:

**Abstract #[e15089](#): A phase 1 study of BBI608, a cancer stemness inhibitor, administered with paclitaxel (PTX) as combination therapy (Rx) for pretreated unresectable or recurrent gastric cancer in Japan**

- This study showed that BBI608 plus paclitaxel can be combined in patients with advanced gastric/gastroesophageal junction adenocarcinoma (n=6).

Two patients (33.3%) achieved a partial response (66.7% and 36.8% regression), and one of them maintained response for more than seven and a half months. Two additional patients achieved stable disease at 2.8 months.

Most common adverse events were grade 1 diarrhea and anorexia. No severe side effects were observed in this study.

“It is an exciting time for Boston Biomedical as we showcase a broad array of studies for cancer stem cell pathway inhibitors BBI608 and BBI503 and share additional details about our pioneering phase 3 BRIGHTER study,” said Chiang J. Li, M.D. FACP, the president, CEO and Chief Medical Officer of Boston Biomedical, and the Head of Global Oncology for Sumitomo Dainippon Pharma Group. “The efficacy and safety results from these studies build upon the already encouraging foundation of clinical evidence, and support the need to further research these potential first-in-class treatment options.”

### **About Boston Biomedical**

Boston Biomedical, Inc. (Founder, President, CEO and CMO: Chiang J. Li, M.D. FACP) was founded in November 2006 and is wholly owned by Sumitomo Dainippon Pharma Co., Ltd. Boston Biomedical’s mission is to develop the next generation of cancer therapeutics by creating drugs designed to target cancer stem cell pathways. Boston Biomedical’s innovation in drug discovery has received a number of recognitions and awards in the United States, including the Frost & Sullivan 2010 North American Drug Discovery Technology Innovation of the Year Award, the National Cancer Institute (NCI) cancer stem cell initiative grant award in 2010, and the 2011 Biotech Pioneer Award at the Alexandria Oncology Summit. The company also received the “Company To Watch” award in the 10th Annual Team Massachusetts Economic Impact Awards in 2013. Boston Biomedical is headquartered in Cambridge, Massachusetts, USA.

Additional information about the company and its product pipeline can be found at [www.bostonbiomedical.com](http://www.bostonbiomedical.com).

### **Disclaimer Regarding Forward-Looking Statements**

The forward-looking statements in this document are based on management’s assumptions and beliefs in light of information presently available, and involve both known and unknown risks and uncertainties. Information concerning pharmaceuticals (including compounds under development) contained within this material is not intended as advertising or medical advice.

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