Bio-Path Holdings, Inc.

Bio-Path Holdings Reports First Quarter 2012 Operational and Financial Results

- Quarter Highlighted by Progress with Lead Product Candidate, Liposomal Grb-2 -

May 17, 2012; HOUSTON, TX – Bio-Path Holdings, Inc., (OTC BB: BPTH) ("Bio-Path"), a biotechnology company developing a liposomal delivery technology for nucleic acid cancer drugs, today announced operational and financial results for the quarter ended March 31, 2012.

FIRST QUARTER 2012 OPERATIONAL AND FINANCIAL HIGHLIGHTS

- Recent Operational Highlights

    - Bio-Path completed treatment of the second cohort in the Company's Phase I clinical trial of its lead product candidate, BP-100-1.01 (Liposomal Grb-2), which is a systemic treatment for blood cancers including acute myeloid leukemia (AML), chronic myelogenous leukemia (CML), acute lymphoblastic leukemia (ALL) and myelodysplastic syndrome (MDS). The trial is being conducted at the MD Anderson Cancer Center. The drug was well tolerated with no treatment-related serious adverse events reported and data continues to suggest some possible anti-leukemia activity. In addition, one patient was stabilized sufficiently from treatment with Liposomal Grb-2, that as a result, the Principle Investigator for the trial continued treating this patient for extended treatment cycles with the drug.

      Liposomal Grb-2 is systemically delivered by intravenous injection. Patients in the second cohort received a dose of 10 mg/m^2 twice a week for four weeks, for a total of eight doses. The protocol for the clinical trial includes dose escalation of 5, 10, 20, 40 and 50 mg/m^2. The expected dose for treatment is 45 mg/m^2 based on pre-clinical studies in animals.

    - In February of 2012, the Company, its medical advisors and the Principal Investigator agreed that the data from the second cohort of the clinical trial demonstrated that Liposomal Grb-2 was safe enough to proceed to the third cohort of the trial, which treated patients with a dose of 20 mg/m^2. At the end of April, 2012, there were three evaluable patients in Cohort 3. Significantly, in the third cohort, all three patients completed the treatment cycle and were evaluable

and, because of apparent stabilization from treatment with Liposomal Grb-2, had received or will be receiving extended treatment cycles.

- The Company added new suppliers for the Grb-2 drug substance and for the final drug product to increase the capacity of its drug supply chain. Substantially increased supplies of the drug candidate Liposomal Grb-2 should be available in June of 2012, which should be sufficient to complete the Phase I trial. The necessity for increased drug supply is based on the experience with treating patients in Cohort 3 of the clinical trial, when all three patients benefited from treatment with Liposomal Grb-2 and appeared to be stabilized. Based on this initial success, the need for additional drug requirements for Cohort 4 and beyond has increased significantly.

- Bio-Path continued to increase its profile amongst the investment community and presented at the Biotech Showcase™ in San Francisco in January. In addition, at the end of the first quarter, the Company applied for and was accepted into the S&P Corporation Records Listing, which further increases access to Bio-Path information, and provides automatic secondary trading of the Company's securities in 38 states.

- At the end of the first quarter 2012, the Company initiated a private placement to raise up to $2 million through the sale of shares of the Company's common stock. The offering is in progress and several blocks of shares have been sold.

- Financial Highlights

  - Net loss for the first quarter 2012 was $(522,227), compared to a Net Loss of $(592,726) in the first quarter 2011. The reduced net loss for the first quarter 2012 was a result of lower operating expense compared to the first quarter last year. For the quarter, the Company reported a net loss per share of $(0.01) based on 58,381,419 weighted average shares outstanding, compared to $(0.01) per share for the same period last year.

  - Operating expenses of $522,627 in the first quarter of 2012 were lower by $70,110 compared to the first quarter 2011, primarily the result of reduced administrative expenses for management stock options, offset to some extent by increased research and development expense for drug material used in the Company's on-going clinical trial.

  - As of March 31, 2012, the Company had cash of $576,823**,** compared to $952,252 at December 31, 2011. Net cash used in operating activities for the first quarter of 2012 was $(400,189) compared to $(124,971) for the first quarter of 2011. Net cash used in the first quarter of 2011 was lower than the first quarter of 2012 primarily due to a one-time cash receipt of $244,479 for a grant from the U.S.

Government. As previously noted, the Company has initiated a private placement to raise up to $2 million through the sale of shares of the Company's common stock. The Company continues to anticipate an average burn rate of approximately $290,000 per quarter.

"The on-going Phase I clinical trial of our lead drug candidate Liposomal Grb-2 continued to provide us with encouraging data and demonstrated further signs that this drug candidate has the potential to benefit patients. As a result, patient enrollment has accelerated, leading to faster completion of trial cohorts than we have experienced previously," said Peter Nielsen, President and Chief Executive Officer of Bio-Path Holdings. "There continues to be the appearance of possible anti-leukemia benefits in patients, supported by one patient in cohort 2 and all three patients in cohort 3 apparently reaching stable disease for a period of time. Three of the four patients received extended treatment with the drug while the fourth patient is waiting to commence extended treatment after delivery of additional drug. We now expect that patients in the next cohort will stabilize enough from treatment with Liposomal Grb-2 to receive a full six months of extended treatments. This has significantly changed the quantity of drug supplies needed for the clinical trial, and as a result we have dramatically increased the capacity of our supply chain."

About Bio-Path's Delivery Technology

Bio-Path's drug delivery technology involves microscopic-sized liposome particles that distribute nucleic acid drugs systemically and safely throughout the human body, via simple intravenous infusion. The delivery technology can be applied both to single stranded (antisense) nucleic acid compounds and double stranded (siRNA) with the potential to revolutionize the treatment of cancer and other diseases where drugable targets of disease are well characterized. However, the Company is currently only developing liposomal antisense drug candidates. Bio-Path also anticipates developing liposome tumor targeting technology, representing next-generation enhancements to the Company's core liposome delivery technology.

About Growth Receptor Bound protein-2 (Grb-2)

The adaptor protein Growth Receptor Bound protein-2 (Grb-2) is essential to cancer cell signaling because it is utilized by oncogenic tyrosine kinases to induce cancer progression. Suppressing the function or expression of Grb2 should interrupt its vital signaling function and have a therapeutic application in cancer. BP-100.1.01 is a neutral-charge, liposome-incorporated antisense drug substance designed to inhibit Grb-2 expression.

About Bio-Path Holdings, Inc.

Bio-Path is a biotechnology company focused on developing therapeutic products utilizing its proprietary liposomal delivery technology designed to systemically distribute nucleic acid drugs throughout the human body with a simple intravenous transfusion. Bio-Path's lead product candidate, Liposomal Grb-2, is in a Phase I study for blood cancers. Bio-Path's second drug candidate, also a liposomal antisense drug, is ready for the clinic where it will be evaluated in lymphoma and solid tumors.

Any statements that are not historical facts contained in this release are forward-looking statements that involve risks and uncertainties, including Bio-Path's ability to raise needed additional capital on a timely basis in order for it to continue its operations, have success in the clinical development of its technologies, the timing of enrollment and release of data in such clinical studies and the accuracy of such data, limited patient populations of early stage clinical studies and the possibility that results from later stage clinical trials with much larger patient populations may not be consistent with earlier stage clinical trials, and such other risks which are identified in the Company's most recent Annual Report on Form 10-K and in any subsequent quarterly reports on Form 10-Q. These documents are available on request from Bio-Path Holdings or at www.sec.gov. Bio-Path disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

For more information, please visit the Company's website at http://www.biopathholdings.com.

Contact Information:

Peter Nielsen
President & Chief Executive Officer
Tel 832.971.6616

Rhonda Chiger (institutional investors and analysts)
Rx Communications Group, LLC
917-322-2569
rchiger@rxir.com

Roger Pondel (individual, retail investors)
Pondel/Wilkinson Inc.
310-279-5980
RPondel@pondel.com