



Bio-Path Holdings Announces First Patient Dosed in Phase 1/1b Study of BP1002 in Refractory/Relapsed Acute Myeloid Leukemia Patients

BP1002 Offers Unique Opportunity for Venetoclax-Resistant Patients by Utilizing RNAi to Limit Cell's Ability to Produce Bcl-2 Protein

HOUSTON – October 24, 2022 – Bio-Path Holdings, Inc., (NASDAQ: BPTH) a biotechnology company leveraging its proprietary DNAbilize® antisense RNAi nanoparticle technology to develop a portfolio of targeted nucleic acid cancer drugs, today announced the enrollment and dosing of the first patient in a Phase 1/1b clinical trial evaluating the ability of BP1002 to treat refractory/relapsed acute myeloid leukemia (AML) patients.

“We are delighted to have dosed the first patient in this key clinical trial. This is a particularly significant study as it includes venetoclax-resistant patients, for whom there are few treatment options and life expectancy is very limited,” said Peter Nielsen, President and Chief Executive Officer of Bio-Path Holdings. “Importantly, we now have several noteworthy principal investigators at leading cancer centers around the country, which we believe will enhance enrollment as we advance BP1002 to treat refractory/relapsed and venetoclax-resistant AML patients.”

BP1002 targets the protein Bcl-2, which is responsible for driving cell survival in up to 60% of all cancers. By targeting Bcl-2 at the mRNA level rather than the protein, BP1002 may overcome and prevent some of the mechanisms of resistance that affect venetoclax treatment. The current standard of care for patients with AML not eligible for intensive chemotherapy is venetoclax, an oral Bcl-2 inhibitor that targets the BH3 domain of the Bcl-2 protein, in combination with a hypomethylating agent or with low-dose cytarabine. High expression of Bcl-2 has been correlated with adverse prognosis for patients diagnosed with AML. Preclinical studies have shown BP1002 to be a potent inhibitor against the Bcl-2 target, and its benign safety profile should enable BP1002 combination therapy with approved agents, such as decitabine.

The Phase 1/1b clinical trial is being conducted at several leading cancer centers in the United States, including the Weill Medical College of Cornell University, The University of Texas MD Anderson Cancer Center, the Georgia Cancer Center, Scripps Health, and The University of California at Los Angeles Cancer Center. Initially, a total of six evaluable patients are scheduled to be treated with BP1002 monotherapy in a standard 3+3 design, with a starting dose of 20 mg/m². The approved treatment cycle is two doses per week over four weeks, resulting in eight doses administered over twenty-eight days. The Phase 1b portion of the study will commence after completion of BP1002 monotherapy cohorts and will assess the safety and efficacy of BP1002 in combination with decitabine in refractory/relapsed AML patients.

Gail J. Roboz, M.D., is the National Principal Investigator for the Phase 1/1b trial. Dr. Roboz is a professor of medicine and director of the Clinical and Translational Leukemia Program at the Weill Medical College of Cornell University and the New York-Presbyterian Hospital in New York City. Gary Schiller, M.D., The University of California at Los Angeles Cancer Center, Maro Ohanian, D.O., Department of Leukemia, University of Texas MD Anderson Cancer Center, and David Hermel, M.D., Scripps Health, are each serving as principal investigators.

About Bio-Path Holdings, Inc.

Bio-Path is a biotechnology company developing DNAbilize®, a novel technology that has yielded a pipeline of RNAi nanoparticle drugs that can be administered with a simple intravenous transfusion. Bio-Path's lead product candidate, prexigebersen (BP1001, targeting the Grb2 protein), is in a Phase 2 study for blood cancers, and Phase 1 studies of BP1001-A, a drug product modification of prexigebersen, in solid tumors will commence in 2022. The Company's second product, BP1002, which targets the Bcl-2 protein, is being evaluated for the treatment of blood cancers and solid tumors, including lymphoma and acute myeloid leukemia. In addition, an IND is expected to be filed for BP1003, a novel liposome-incorporated STAT3 antisense oligodeoxynucleotide developed by Bio-Path as a specific inhibitor of STAT3, in 2022 or the first quarter of 2023.

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

Forward-Looking Statements

This press release contains forward-looking statements that are made pursuant to the safe harbor provisions of the federal securities laws. These statements are based on management's current expectations and accordingly are subject to uncertainty and changes in circumstances. Any express or implied statements contained in this press release that are not statements of historical fact may be deemed to be forward-looking statements. Any statements that are not historical facts contained in this release are forward-looking statements that involve risks and uncertainties, including the impact, risks and uncertainties related to COVID-19 and actions taken by governmental authorities or others in connection therewith, 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, the maintenance of intellectual property rights, that patents relating to existing or future patent applications will be issued or that any issued patents will provide meaningful protection of our drug candidates, and such other risks which are identified in Bio-Path's most recent Annual Report on Form 10-K, in any subsequent quarterly reports on Form 10-Q and in other reports that Bio-Path files with the Securities and Exchange Commission from time to time. 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.

###

Contact Information:

Investors

Will O'Connor
Stern Investor Relations
212-362-1200
will@sternir.com

Doug Morris
Investor Relations
Bio-Path Holdings, Inc.
832-742-1369