NEWS RELEASE

Inovio Treats First Patient in Immuno-Oncology Study for Advanced or Metastatic Bladder Cancer in Combination with Roche/Genentech's Atezolizumab

2018-08-16

One of three ongoing oncology combination studies coupling Inovio's T cell enhancers with checkpoint inhibitors

PLYMOUTH MEETING, Pa., Aug. 16, 2018 (GLOBE NEWSWIRE) -- Inovio Pharmaceuticals, Inc. (NASDAQ:INO) today announced that it has dosed its first patient in a Phase 1/2a study designed to evaluate the safety, immunogenicity and clinical efficacy of INO-5401, Inovio's novel cancer immunotherapy that encodes multiple cancer antigens, plus INO-9012, a T cell activator, in combination with atezolizumab, (F. Hoffman-La Roche Ltd.) a PD-L1 inhibitor, for the treatment of advanced or metastatic bladder cancer. The trial, which is being managed by Inovio, is expected to enroll approximately 85 patients at sites located in the United States and Spain.

Dr. J. Joseph Kim, Inovio's President and Chief Executive Officer, said, "We are very encouraged to dose our first patient with the aspiration that we can demonstrate the immense potential of our INO-5401 immunotherapy to treat advanced bladder patients as well as those with other cancers. This also marks the second time in less than a month that Inovio has dosed a cancer patient, combining INO-5401, our T cell-generating immunotherapy with a checkpoint inhibitor. Bladder cancer is considered an immunogenic tumor and our approach is to combine INO-5401/INO-9012 with atezolizumab as we believe this may provide a synergistic therapeutic effect by generating functional and activated T cells while simultaneously inhibiting PD-L1. We remain on track and look forward to producing interim clinical results in 2019."

This open-label, multi-center Phase 1/2a study plans to enroll 85 patients divided into two cohorts. Cohort A includes patients with confirmed disease progression during or following prior checkpoint inhibitor therapy, while Cohort B patients are treatment naïve and unfit for cisplatin-based therapy. Primary endpoints are incidence of AEs, antigen-specific immunologic activation and objective response rate (ORR) in Cohort A. Secondary endpoints are Cohort B's ORR, duration of response, progression free survival and overall survival. Exploratory endpoints are correlation of biomarkers to anti-tumor activity. A safety run-in will be performed for the first six patients enrolled in Cohort A to monitor emergence of any dose limiting toxicities. INO-5401 and INO-9012 (10 mg DNA combined in 1ml) will be administered by intramuscular injection followed by electroporation every 3 weeks for first 4 doses, every 6

weeks for 6 doses and every 12 weeks until disease progression. Atezolizumab (1200 mg IV) will be administered every 3 weeks until disease progression. Tumor imaging, disease assessment (per RECIST and iRECIST) and biopsies, blood and urine samples will be collected at set time points including prior to study treatment, on treatment and at disease progression (see **www.clinicaltrials.gov**, identifier NCT03502785).

About Advanced Bladder Cancer

The prognosis for patients with advanced unresectable or metastatic bladder cancer is poor, with limited treatment options. It is a disease that has seen no major advances for more than 30 years until the approvals of checkpoint inhibitors. Expected survival is generally less than 12 months; in the U.S., five-year survival of patients with distant metastasis is 5%. In the U.S., an estimated 81,190 new cases of bladder cancer are expected in 2018.

About INO-5401

INO-5401 includes Inovio's SynCon® antigens for hTERT, WT1 and PSMA, and has the potential to be a powerful cancer immunotherapy in combination with checkpoint inhibitors. The National Cancer Institute previously highlighted hTERT, WT1 and PSMA among a list of important cancer antigens, designating them as high priorities for cancer immunotherapy development. These three antigens are known to be over-expressed, and often mutated, in a variety of human cancers, and targeting these antigens may prove efficacious in the treatment of patients with cancer.

About Inovio Pharmaceuticals, Inc.

Inovio is a late-stage biotechnology company focused on the discovery, development, and commercialization of DNA immunotherapies that transform the treatment of cancer and infectious diseases. The Inovio technology platform is designed to activate an individual's immune system to generate a robust, targeted T cell and antibody response against targeted diseases. Inovio is the only immunotherapy company that has reported generating T cells entirely in vivo in high quantity that are fully functional and whose killing capacity correlates with relevant clinical outcomes with a favorable safety profile. Inovio's most advanced clinical program, VGX-3100, is in Phase 3 for the treatment of HPV-related cervical precancer. Also in development are Phase 2 immuno-oncology programs targeting head and neck cancer, bladder cancer, and glioblastoma, as well as platform development programs in hepatitis B, Zika, Ebola, MERS, and HIV. Partners and collaborators include MedImmune, Regeneron, Roche/Genentech, ApolloBio Corporation, The Wistar Institute, University of Pennsylvania, the Parker Institute for Cancer Immunotherapy, DARPA, GeneOne Life Science, Plumbline Life Sciences, Drexel University, National Institute of Allergy and Infectious Diseases, U.S. Army Medical Research Institute of Infectious Diseases, NIH, HIV Vaccines Trial Network, U.S. Military HIV Research Program and CEPI. For more information, visit **www.inovio.com**.

This press release contains certain forward-looking statements relating to our business, including our plans to develop electroporation-based drug and gene delivery technologies and DNA vaccines, our expectations

regarding our research and development programs, including the planned initiation and conduct of clinical trials and the availability and timing of data from those trials, as well as our plans and expectations regarding the presentation of data at scientific conferences. Actual events or results may differ from the expectations set forth herein as a result of a number of factors, including uncertainties inherent in pre-clinical studies, clinical trials and product development programs, the availability of funding to support continuing research and studies in an effort to prove safety and efficacy of electroporation technology as a delivery mechanism or develop viable DNA vaccines, our ability to support our pipeline of SynCon® active immunotherapy and vaccine products, the ability of our collaborators to attain development and commercial milestones for products we license and product sales that will enable us to receive future payments and royalties, the adequacy of our capital resources, the availability or potential availability of alternative therapies or treatments for the conditions targeted by us or our collaborators, including alternatives that may be more efficacious or cost effective than any therapy or treatment that we and our collaborators hope to develop, issues involving product liability, issues involving patents and whether they or licenses to them will provide us with meaningful protection from others using the covered technologies, whether such proprietary rights are enforceable or defensible or infringe or allegedly infringe on rights of others or can withstand claims of invalidity and whether we can finance or devote other significant resources that may be necessary to prosecute, protect or defend them, the level of corporate expenditures, assessments of our technology by potential corporate or other partners or collaborators, capital market conditions, the impact of government healthcare proposals and other factors set forth in our Annual Report on Form 10-K for the year ended December 31, 2017, our Quarterly Report on Form 10-Q for the quarter ended June 30, 2018 and other regulatory filings we make from time to time. There can be no assurance that any product candidate in our pipeline will be successfully developed, manufactured or commercialized, that final results of clinical trials will be supportive of regulatory approvals required to market licensed products, or that any of the forward-looking information provided herein will be proven accurate. Forward-looking statements speak only as of the date of this release, and we undertake no obligation to update or revise these statements, except as may be required by law.

CONTACTS:

Investors: Ben Matone, Inovio, 484-362-0076, **ben.matone@inovio.com**

Media: Jeff Richardson, Inovio, 267-440-4211, **jrichardson@inovio.com**

Source: Inovio Pharmaceuticals, Inc.