NEWS RELEASE

Inovio's DNA Immunotherapy Demonstrates Immune Response Results Key in Treating Chronic Hepatitis B Infection

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INO-1800 shows ability to activate and expand CD8+ killer T cells

PLYMOUTH MEETING, Pa., March 14, 2018 (GLOBE NEWSWIRE) -- Inovio Pharmaceuticals, Inc. (NASDAQ:INO) today announced that interim Phase 1 results show its DNA immunotherapy designed to treat hepatitis B virus (HBV) infection was safe, well-tolerated and generated virus-specific T cells, including CD8+ killer T cells, meeting the objectives of the clinical study. Preliminary immunology data from the trial revealed that treatment of patients with INO-1800 resulted in the generation of T cells that recognized key components of the hepatitis B virus and reacted by making antiviral cytokines such as Interferon gamma, a protein believed to be linked to clearance of HBV from the liver. INO-1800 was also able to activate and expand CD8+ killer T cells that displayed markers believed to be important for retention in the liver as well as multiple potential mechanisms for killing virally infected cells.

Dr. J. Joseph Kim, Inovio's President & CEO, said, "Our hepatitis B immunotherapy trial results clearly demonstrate the potential of INO-1800 as an immunotherapy for this widespread infection that is a major cause of liver cancer. Key to my optimism is that INO-1800 drove generation of HBV-specific killer T cells across all cohorts. We see INO-1800 as a key immunotherapy component of an effective anti-HBV combination therapy. We have had discussions with several potential partners and expect to further advance this product via collaboration or partnership."

Although there is an effective prophylactic vaccine available to prevent infection, more than 240 million people are living with chronic HBV infection globally, and the disease is causing more than one million deaths annually. Currently available antiviral treatments are not adequate to clear this infection and may only slow progression of the disease. HBV can cause chronic infection and puts people at high risk of death from cirrhosis and liver cancer. These latest results from our Phase 1 trial indicate that treatment with INO-1800 is generating the type of immune response considered to be key in the treatment of chronic hepatitis B infection using an immunotherapy.

This open-label, dose escalation study evaluated the safety, tolerability, and immunogenicity of INO-1800, alone or in combination with INO-9112, Inovio's IL-12-based immune activator, in 90 adults with chronic hepatitis B infection. The primary endpoints were safety and tolerability. The secondary endpoints evaluated the cellular and humoral immune response to INO-1800 and investigated

the therapy's effect on several viral and antiviral parameters. All trial subjects, including the ones in the control group, were also medicated with standard-of-care oral antiviral therapies during the study. Inovio plans to report additional data from this trial at upcoming scientific conferences and in a publication.

In a previously published preclinical study, Inovio researchers found the vaccine-specific T cells exhibited a killing function, and could migrate to and stay in the liver and cause clearance of target cells without evidence of liver injury. This animal study was the first study to provide evidence that intramuscular immunization can induce killer T cells that can migrate to the liver and eliminate target cells, demonstrating the potential of this immunotherapy.

Hepatitis B and Liver Cancer

Chronic infection with hepatitis B virus is one of the major causes and risk factors for liver cirrhosis and liver cancer. The virus is very infectious– 100 times more so than HIV – with over 240 million people chronically infected worldwide. More than 60 million of these people are at risk of the major complications of liver cirrhosis and liver cancer, which cause over 700,000 deaths globally each year. Liver cancer is the third most common cancer and the most deadly, killing most patients within five years of diagnosis.

About Inovio Pharmaceuticals, Inc.

Inovio is taking immunotherapy to the next level in the fight against cancer and infectious diseases. We are the only immunotherapy company that has reported generating T cells in vivo in high quantity that are fully functional and whose killing capacity correlates with relevant clinical outcomes with a favorable safety profile. With an expanding portfolio of immune therapies, the company is advancing a growing preclinical and clinical stage product pipeline. Partners and collaborators include MedImmune, Regeneron, Genentech, The Wistar Institute, University of Pennsylvania, the Parker Institute for Cancer Immunotherapy, DARPA, GeneOne Life Science, Plumbline Life Sciences, ApolloBio Corporation, Drexel University, NIH, HIV Vaccines Trial Network, National Cancer Institute, U.S. Military HIV Research Program, and Laval University. 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, and the sufficiency of our capital resources. 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 the company or its collaborators, including alternatives that may be more efficacious or cost effective than any therapy or treatment that the company and its collaborators hope to develop, issues involving product liability, issues involving patents and whether they or licenses to them will provide the company 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 the company can finance or devote other significant resources that may be necessary to prosecute, protect or defend them, the level of corporate expenditures, assessments of the company's 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, 2016, our Form 10-Q for the period ended September 30, 2017, and other regulatory filings we make from time to time. There can be no assurance that any product candidate in Inovio's 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 Inovio undertakes no obligation to update or revise these statements, except as may be required by law.

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