Inovio and Collaborators Receive NIH Grant to Evaluate HIV Immunotherapy PENNVAX®

Inovio Pharmaceuticals, Inc. {NASDAQ: INO} announced that its academic and industry collaborators received a multi-year $6.95 million grant from the NIH's National Institute of Allergy and Infectious Diseases to develop a single or combination therapy using Inovio's PENNVAX-GP with the goal of attaining long-term HIV remission in the absence of antiviral drugs.

Inovio and Collaborators Receive NIH Grant
to Evaluate HIV Immunotherapy PENNVAX®-GP's Ability
to Induce Remission of HIV Infection and End Lifetime
of Drug Therapy
Grant will fund therapeutic clinical studies testing PENNVAX-GP with
INO-9012 (an IL-12 immune activator) alone and with the addition of
a PD-1 checkpoint inhibitor

PLYMOUTH MEETING, Pa. – March 30, 2017 – **Inovio Pharmaceuticals, Inc. {NASDAQ: INO}** announced today that its academic and industry collaborators received a multi-year $6.95 million grant from the NIH's National Institute of

Allergy and Infectious Diseases to develop a single or combination therapy using Inovio's PENNVAX-GP with the goal of attaining long-term HIV remission in the absence of antiviral drugs.

Although current antiretroviral therapy can reduce the amount of circulating HIV in the blood to an undetectable level, latent cellular reservoirs of HIV continue to exist in the body such that when therapy is discontinued, these cells begin to produce HIV again. This proof-of-concept clinical program will test whether enhancing anti-HIV specific CD8 killer T cell immune responses alone or in combination with other products can influence the size of the viral reservoir pool, potentially resulting in reducing or eradicating the virus.

This is a two-step clinical study in HIV-positive subjects to assess Inovio's HIV immunotherapy PENNVAX-GP with INO-9012 (an IL-12 immune activator) alone and with the addition of a PD-1 checkpoint inhibitor.

All trials will be randomized, double-blind, placebo-controlled assessments of PENNVAX-GP. They will be conducted at the University of California in San Francisco and Los Angeles.

PD-1 checkpoint inhibitors have proven effective in treating cancer and may have a role in the management of chronic infectious diseases. This trial seeks to demonstrate that an in vivo immunotherapy combining a PD-1 inhibitor and PENNVAX-GP will enhance the CD8 killer T cell response to HIV infected cells.

Development of Inovio's PENNVAX-GP immunotherapy, which widely targets multiple major clades of HIV – providing global coverage – has been funded through a $25 million NIAID contract awarded to Inovio and its collaborators. In addition, Inovio and its collaborators were awarded a five-year $16 million Integrated Preclinical/Clinical AIDS Vaccine Development (IPCAVD) grant in 2015 from NIAID.

PENNVAX-GP is currently being studied in a phase I trial (HVTN-098) to evaluate safety and immunogenicity in 94 healthy volunteers. In this study, PENNVAX-GP is being evaluated as a preventive vaccine. The newly funded study will assess the impact of this vaccine approach in a therapeutic setting.

Steven G. Deeks, MD, the grant and clinical trial's Principal Investigator, and Professor of Medicine in Residence at the University of California, San Francisco, said, "There is growing recognition that we will need to generate powerful CD8+ T cells that target vulnerable regions of the virus and which can migrate to the tissues where the virus hides. The preliminary data from other Inovio-sponsored studies makes me enthusiastic that this vaccine might fill an important niche in future curative strategies."

Dr. J. Joseph Kim, Inovio's President and CEO, said, "*We are thrilled to receive this NIH funding to test the combination of Inovio's HIV immunotherapy with a PD-1 inhibitor. Similar to what we are doing in the cancer field with INO-3112 and INO-5401, we believe that the one-two punch of generating potent killer T cells with our immunotherapies combined with PD-1/PDL-1 checkpoint therapies could be an important step in*

generating functional cure for these diseases.”

About HIV Infection

Nearly 36 million people have died from HIV-related causes and 35 million are living with HIV. HIV is a retrovirus that causes acquired immunodeficiency syndrome (AIDS), a condition in which progressive failure of the immune system allows life-threatening opportunistic infections and cancers to thrive. HIV is classified into clades, sub-types within which the virus has genetic similarities. The most prevalent clades are B (found mainly in North America and Europe), A and D (found mainly in Africa), and C (found mainly in Africa and Asia).

HIV clade C accounts for 48% of worldwide and 51% of African-HIV type 1 cases. It is the most rapidly spreading subtype of HIV. Although a highly active antiretroviral therapy regimen has dramatically transformed the treatment of the disease in developed countries, effective HIV vaccines are needed to stop the spread of disease and reduce the need for antiretroviral treatments, which can have harsh side effects and lose their efficacy over time.

About Inovio’s PENNVAX® HIV Vaccines and Immunotherapies

Inovio completed initial clinical studies of its HIV immunotherapy PENNVAX-B, targeting clade B viruses, to achieve proof of principle in generating potent immune responses using its SynCon® immunotherapy technology. In two published phase 1 studies, PENNVAX-B immunization generated high levels of activated, antigen-specific CD8+ killer T cells with proper functional characteristics. This ability uniquely positions PENNVAX as an important product candidate for both preventing

and treating HIV infections.

Using a $25 million contract from the NIH, Inovio designed its universal, multi-clade, multi-antigen PENNVAX-GP immunotherapy targeting the env, gag and pol antigens to provide coverage against all major HIV-1 clades. PENNVAX-GP is Inovio's lead preventive and therapeutic immunotherapy for HIV.

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, The Wistar Institute, University of Pennsylvania, 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, please visit **www.inovio.com**

CONTACT:
Bernie Hertel

+1 858-410-3101

bhertel@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 and 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, including the HIV immunotherapy PENNVAX-GP, 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 broad 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, and other regulatory filings from time to time. There can be no assurance that any product in Inovio’s pipeline will be successfully developed or manufactured, that final results of clinical studies 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.