NEWS RELEASE

Inovio's Ebola Vaccine Delivered Intradermally Demonstrates 100% Immunogenicity in a Clinical Study Published in The Journal of Infectious Diseases

2019-03-21

PLYMOUTH MEETING, Pa., March 21, 2019 /PRNewswire/ -- Inovio Pharmaceuticals, Inc. (NASDAQ: INO) announced today that its Ebola vaccine, INO-4201, was safe, tolerable, and generated strong T cell and antibody responses. This Phase 1 data was published in **The Journal of Infectious Diseases** and further supports the advancement of the intradermal delivery platform for emerging infectious diseases. Significantly, the study demonstrated that intradermal (skin) administration with Inovio's CELLECTRA® delivery device resulted in 100% of evaluable subjects generating antigen-specific antibody responses that persisted for more than one year in most subjects and generated T cell responses equivalent to or better than the group that received intramuscular delivery. The published data further validates the safety, potency, and product stability advantages of Inovio's vaccine and immunotherapy platform.

Dr. J. Joseph Kim, Inovio's President and CEO, said, "INO-4201 has already demonstrated protection in 100% of non-human primates following a challenge with a lethal dose of the Ebola virus. With strong preclinical and human data, Inovio is executing on our overall development strategy in advancing INO-4201 as a viable stockpile vaccine. Because Inovio's Ebola vaccine can be used to protect against Ebola infection and can be boosted multiple times without any anti-vector response, it could be employed to boost viral vector vaccines that cannot be effectively re-administered. We now look to secure partner funding to further advance our Ebola vaccine as a stand-alone vaccine as well as a boost for those previously immunized with viral vector vaccines."

Unlike viral vector vaccines which must be kept frozen, INO-4201 is stable at room temperature for more than one year. Non-live vaccine approaches that are simple to deliver and stable at room temperature are desirable in controlling Ebola virus outbreaks.

Inovio's Ebola vaccine was evaluated in five groups of healthy subjects. Of 70 evaluated subjects, 67 (96%) seroconverted and mounted a strong antibody response to the Ebola glycoprotein antigen following the three dose immunization regimen; 52 subjects (76%) seroconverted after only two doses.

Significantly, in the study arm using intradermal (skin) administration, 13 of 13 evaluable subjects (100%) generated antigen-specific

antibody responses after only two doses and all remained seropositive after three immunizations.

To date INO-4201 has been well-tolerated and has not demonstrated systemic serious adverse effects, such as fever, joint pain, and low white blood cell counts, reported in association with some viral vector-based Ebola vaccines currently in development.

More information on this study, fully funded by U.S. Defense Advanced Research Projects Agency (DARPA), can be found in the most recent edition of The Journal of Infectious Diseases in the article entitled, "Intradermal SynCon® Ebola GP DNA Vaccine is Temperature Stable and Safely Demonstrates Cellular and Humoral Immunogenicity Advantages in Healthy Volunteers," authored by Inovio and its collaborators.

About Inovio Pharmaceuticals, Inc.

Inovio is a late-stage biotechnology company focused on the discovery, development, and commercialization of DNA-based immunotherapies and vaccines that transform the treatment and prevention of cancer and infectious disease. Inovio's proprietary technology platform applies antigen sequencing and DNA delivery to activate potent immune responses to targeted diseases. The technology functions exclusively in vivo, and has been demonstrated to consistently activate robust and fully functional T cell and antibody responses against targeted cancers and pathogens. Inovio's most advanced clinical program, VGX-3100, is in Phase 3 for the treatment of HPV-related cervical pre-cancer. Also in development are Phase 2 immuno-oncology programs targeting HPV-related cancers, bladder cancer, and glioblastoma, as well as platform development programs in hepatitis B, Zika, Ebola, MERS, and HIV. Partners and collaborators include AstraZeneca, Regeneron, Roche/Genentech, ApolloBio Corporation, The Wistar Institute, The Bill & Melinda Gates Foundation, the University of Pennsylvania, Parker Institute for Cancer Immunotherapy, CEPI, DARPA, GeneOne Life Science, Plumbline Life Sciences, NIH, HIV Vaccines Trial Network, National Cancer Institute, Walter Reed Army Institute of Research, Drexel University, 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. 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, 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, 484-362-0076, **ben.matone@inovio.com**
Media:	Jeff Richardson, 267-440-4211, **jrichardson@inovio.com**

View original content to download multimedia:**http://www.prnewswire.com/news-releases/inovios-ebola-vaccine-delivered-intradermally-demonstrates-100-immunogenicity-in-a-clinical-study-published-in-the-journal-of-infectious-diseases-300816369.html**

SOURCE Inovio Pharmaceuticals, Inc.