



NEWS RELEASE

Inovio Pharmaceuticals Expands Positive Phase I Ebola Vaccine Trial to Identify Most Optimal Immunization Regimen

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Further enrollment to also build on safety database for Ebola and SynCon® immunotherapy technology, which has a favorable safety profile to date

PLYMOUTH MEETING, Pa., Aug. 11, 2016 (GLOBE NEWSWIRE) -- Inovio Pharmaceuticals, Inc. (NASDAQ:INO) today announced that the company is more than doubling study enrollment to further characterize and identify in humans the most optimal immunization regimen using intradermal (skin) delivery of its preventive Ebola DNA vaccine. Inovio is enrolling 125 subjects in a second stage of its phase I trial of INO-4212 after generating positive initial safety and immune response data in the first set of 75 healthy volunteers. The study will assess immune response characteristics generated with fewer intradermal administrations, lower doses, and with and without its DNA-based IL-12 immune activator.

The initial 75-subject stage of the trial evaluated INO-4212 in muscle and skin in five study arms in two and three doses, one including Inovio's DNA-based IL-12 immune activator. In a study arm using intradermal administration, 100% (13/13) of subjects generated antigen-specific antibody responses after only two doses. Similarly, in a study arm receiving the vaccine with intramuscular administration in combination with plasmid IL-12, 12 of 13 evaluable subjects (92%) demonstrated strong antibody responses after only two immunizations and 100% produced strong antibody responses after three immunizations. A majority of vaccinated subjects in each of the five cohorts produced strong Ebola antigen-specific T-cell responses.

Dr. J. Joseph Kim, Inovio's President & CEO, said, "Immune responses from our Ebola vaccine in the first group of vaccine recipients met our highest expectations. Our aim is to pursue a regulatory approval path for Ebola using the Animal Rule, which relies on showing safety in humans and efficacy in multiple animal species. To pursue this path, apart from showing efficacy in animals we will require data supporting an optimal immunization regimen able to generate robust antigen specific immune responses in humans. Our goal now is to characterize the best immunization regimen and continue building the safety database required for regulatory approval.

"We plan to meet with regulators regarding a path forward following the close of this study early next year with results from 200 patients and positive preliminary pre-clinical data from several animal models, which we already have in hand."

This expanded human study (CT.gov: NCT02464670) is being conducted by an Inovio-led consortium which was selected and awarded \$45 million by the U.S. Defense Advanced Research Projects Agency (DARPA) in 2015 to take a multi-faceted approach to prevent and treat Ebola infection.

To date INO-4212 has been well tolerated and not demonstrated systemic serious adverse effects, such as fever, severe joint pain, and low white blood cell counts, reported in association with some viral vector based Ebola vaccines currently in development. Moreover, unlike viral vectored vaccines, which must be kept frozen, INO-4212 was formulated in a refrigerated solution (2-8 C).

Under this DARPA-funded program, Inovio and its collaborators are developing multiple approaches against Ebola. This program allows for the development and early clinical testing of:

- Inovio's DNA-based vaccine INO-4212 against Ebola.
- Inovio's therapeutic Ebola dMAb® product. This new technology has properties complementary to Inovio's Ebola DNA vaccine to potentially protect against Ebola. For example, while a DNA vaccine may provide longer lasting protection, an Ebola dMAb product may provide more rapid therapeutic benefit (as shown in Inovio's Chikungunya and dengue programs); and
- A highly potent conventional protein-based therapeutic monoclonal antibody (mAb) product against Ebola virus infection, co-developed with MedImmune, the global biologics research & development arm of AstraZeneca.

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, Plumblin Life Sciences, 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 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, but not limited to, the fact that pre-clinical and clinical results referenced in this release may not be indicative of results achievable in other trials or for other indications, that the studies or trials may not be successful or achieve the results

desired, including safety and efficacy for VGX-3100 and INO-3112, that pre-clinical studies and clinical trials may not commence or be completed in the time periods anticipated, that results from one study may not necessarily be reflected or supported by the results of other similar studies and that results from an animal study may not be indicative of results achievable in human studies), 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, our ability to advance our portfolio of immuno-oncology products independently, 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, our ability to enter into partnerships in conjunction with our research and development programs, evaluation of potential opportunities, 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, 2015, our Form 10-Q for the quarter ended June 30, 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.

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