



NEWS RELEASE

Inovio's Ebola Vaccine Provides 100% Protection And Elicits Long-Lasting Immune Responses in Preclinical Studies

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Article in Journal of Infectious Diseases Supports Rationale

For Inovio's Ebola Vaccine Stockpile Program

PLYMOUTH MEETING, Pa., Oct. 15, 2018 (GLOBE NEWSWIRE) -- Inovio Pharmaceuticals, Inc. (NASDAQ:INO) announced today that its Ebola vaccine (INO-4212) provided 100% protection following a challenge with a lethal dose of the Ebola virus in a preclinical study. An article in the **Journal of Infectious Diseases** highlights that regimens of Inovio's INO-4212 vaccine delivered by intramuscular administration provided 100% protection against a lethal Ebola challenge in all preclinical subjects. Impressively, just two injections of a simple, dose-sparing intradermal administration generated strong immunogenicity and provided 100% protection against a lethal Ebola challenge in a separate study. Scientists observed that vaccination induced long-term immune responses in monkeys that were detectable for at least one year after the final vaccination.

Laurent Humeau, Ph.D., Inovio's Senior Vice President R&D, said, "Unlike all other Ebola vaccine candidates in development, INO-4212 is a vaccine that has shown to be stable at room temperature for one year. With this new data showing complete Ebola protection, coupled with impressive Phase 1 results for immune responses and safety, Inovio is well-positioned to execute on our overall development strategy in positioning INO-4212 as a viable stockpile vaccine. We are working with collaborators and potential new funders to advance INO-4212."

According to the World Health Organization (WHO), Ebola virus infection causes a severe hemorrhagic fever that has a more than 50% fatality rate. More than 11,000 people died in West Africa in a 2014-15 Ebola virus outbreak. Recently, the WHO reported that the rate of new Ebola cases in the Congo has more than doubled since September. The current epidemic is the 14th known outbreak of the Zaire strain of the Ebola virus, known in epidemiological terms as EBOV. It is the strain with the highest mortality rate; in most outbreaks, more than 60 percent of those who come down with the disease die. Recent advances have led to the development of promising experimental vaccine candidates that may be associated with side effects and/or may not be applicable in specific vulnerable populations, such as children, pregnant women and immunocompromised individuals. In addition, there is a need to boost these vaccines to provide long-term protection.

In a completed Phase 1 Ebola trial of healthy participants demonstrated that 95% (170/179) of evaluable subjects generated an Ebola-specific antibody immune response, with the mean antibody titer comparable or superior to those reported from viral vector-based Ebola vaccines. Importantly, Inovio's Ebola vaccine was well-tolerated with a favorable safety profile compared to viral vector-based Ebola vaccines, some of which have been associated with serious adverse events including myalgia, arthralgia, fever, and rash. Furthermore, their faster construct design, ability to continue to boost immune responses and protection with additional administrations, easier scalability of manufacturing, and better product thermal stability make DNA vaccines an attractive platform to rapidly respond to emerging global infectious diseases.

About Ebola

The Ebola virus causes periodic outbreaks of a highly contagious and lethal human infectious disease marked by severe hemorrhagic fever, with a mortality rate that ranges between 50% and 90%. The infection typically affects multiple organs in the body and is often accompanied by severe bleeding. The virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission. At present there are no FDA-approved pre- or post-exposure interventions available in the event of an outbreak, laboratory accident, or deliberate misuse. The Ebola virus is classified as a Category A Priority Pathogen by the Centers for Disease Control and Prevention. This designation prescribes an accelerated development pathway for FDA approval that determines efficacy based on two different validated animal studies followed by clinical evaluation in phase I and phase II trials to establish safety and immunogenicity for use in humans.

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. Inovio's proprietary platform technology applies next-generation 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 is the only immunotherapy company that has reported generating T cells whose killing capacity correlates with relevant clinical outcomes. 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 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, Parker Institute for Cancer Immunotherapy, CEPI, 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, including the planned initiation and conduct of clinical trials and the availability and timing of data from those trials, and our plans and expectations regarding partnerships. 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.

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