Inovio’s Positive Zika Vaccine Study Data Published in New England Journal of Medicine

Inovio Pharmaceuticals, Inc. {NASDAQ:INO} reported today on positive safety and immune response results from a first-in-man, multi-center phase 1 trial of a vaccine against the Zika virus.

The phase 1 trial of Inovio’s DNA-based Zika vaccine (GLS-5700) induced high levels of binding antibodies in 100% of participants.

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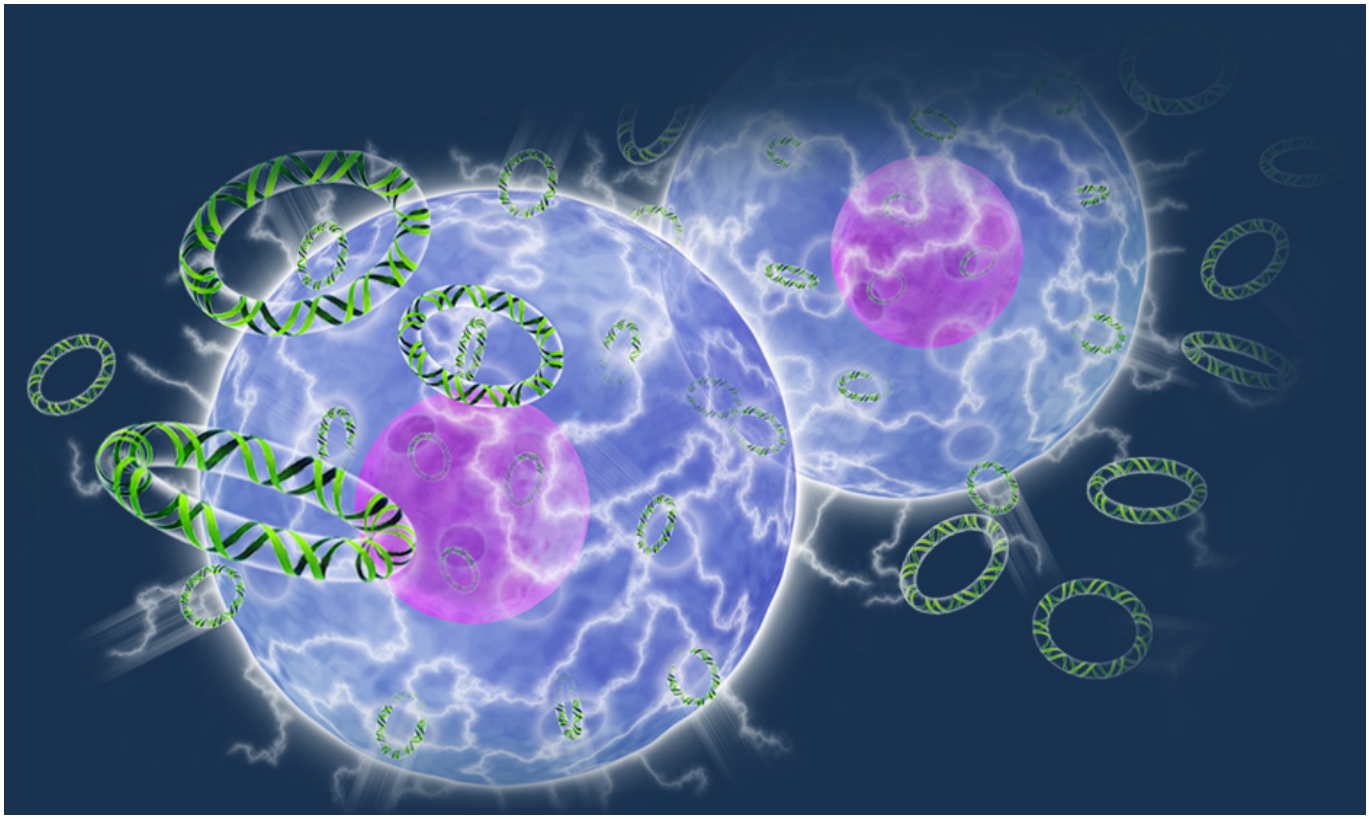

Inovio's Positive Zika Vaccine Clinical Study Data Published in New England Journal of Medicine

Phase 1 results show GLS-5700 induced high levels of antibodies in 100% of participants; Serum from vaccinated subjects prevented infection in virus challenge in animals

PLYMOUTH MEETING, Pa., October 5, 2017 – Inovio Pharmaceuticals, Inc. (NASDAQ:INO) reported today on positive safety and immune response results from a first-in-man, multi-center phase 1 trial of a vaccine against the Zika virus. The phase 1 trial of Inovio's DNA-based Zika vaccine (GLS-5700) induced high levels of binding antibodies in 100% of participants. Robust neutralising antibody and T cell immune response were also observed in vaccinated subjects. These positive results appear in the New England Journal of Medicine in the article: "Safety and Immunogenicity of an Anti-Zika Virus DNA Vaccine," by Inovio researchers and collaborators.

Dr. J. Joseph Kim, Inovio's President and CEO, said, *"Inovio is the first organisation in the world to report on positive Zika vaccine data from a clinical study. We've posted similar encouraging HIV, Ebola and MERS vaccine data arising from our product development engine of DNA-immunotherapies and vaccines. Results from this published study demonstrate that all human subjects responded to the vaccine and that the immune responses have the ability to confer protection in challenge models. A second phase 1 study, now fully enrolled in Puerto Rico, is designed with a placebo control to explore a potential trend towards clinical efficacy. Inovio is proud to be a pioneer of Zika vaccine development, and the first to generate positive human data that clearly supports advancement of DNA technology and our vaccine candidate."*

In this phase 1 study (ZIKA-001), a total of 40 participants (20 in each of two groups) received GLS-5700 in a 1 mg or 2 mg dose. The vaccine was administered in 0.1 ml intradermal injections administered by Inovio's CELLECTRA® 3P skin vaccine device. The GLS-5700 Zika vaccine induced binding antibodies in 100% of the participants after a three-dose vaccination regimen and in 95% after two doses of vaccine. In addition, neutralizing antibodies were observed in more than 95% of the serum samples that were assayed on neuronal-cell targets. Serum samples from vaccinated subjects when subsequently transferred to mice were found to be protective from death and illness in more than 90% of animals after they were challenged with a lethal dose of the Zika virus.

Inovio's second fully enrolled clinical study is a placebo-controlled, double-blind trial involving 160 healthy adult volunteers (80 subjects received vaccine and 80 subjects received placebo) to evaluate the safety, tolerability and immunogenicity of GLS-5700 in dengue virus-positive individuals. Inovio will also assess differences in Zika infection rates in participants given either placebo or vaccine as part of an exploratory efficacy endpoint.

Preclinical data published in the peer-reviewed journals npg Vaccines (2016) and Nature Communications (2017) showed that Inovio's Zika vaccine generated single-dose protection in 100% of mice and non-human primates from death as well as neurologic or testicular effects of the Zika virus.

Inovio is developing its Zika vaccine, GLS-5700, with GeneOne Life Science, Inc. (KSE: 011000) and academic collaborators from the U.S. and Canada who are also collaborating to advance clinical development of Inovio's Ebola and MERS vaccines.

A recent CDC study found that upwards of 5% of children born to pregnant women with Zika infection had abnormalities and these were noted even with infections as late as the third trimester. Babies born with congenital Zika syndrome resulting from Zika infection of an expectant mother often have severe microcephaly, a neurological condition in which babies are born with abnormally small heads. Other abnormalities include diminished brain tissue and eye damage, as well as restricted joint movement and rigid muscle tone. Recent research suggests they may also suffer hearing problems and seizure disorders such as epilepsy.

There is no approved therapy or vaccine for Zika infection, presenting a major unmet medical need given that the World Health Organization estimates that more than two billion people are directly at risk for infection. Importantly, infection with the Zika virus during pregnancy can cause a pattern of birth defects including microcephaly.

About Inovio's DNA Immunotherapy Technology Platform

Inovio is advancing the medical potential of a unique class of immunotherapy technology. Its DNA-based platform, which is the foundation of all Inovio products, including GLS-5700, is unique in its ability to leverage the body's naturally existing mechanisms to generate robust, highly targeted immune responses to prevent and treat disease – and to do so in the body with a favorable safety profile. Its SynCon® immunotherapy design and CELLECTRA® delivery system transform novel genetic blueprints into functional antibody and killer T-cell responses. Inovio has achieved significant antigen-specific immune responses against multiple diseases and is advancing a growing pipeline of cancer and infectious disease immunotherapies and vaccines.

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, 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

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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 including GLS-5700, 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 June 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. In addition, the forward-looking statements included in this press release represent Inovio's views as of the date hereof. Inovio anticipates that subsequent events and developments may cause its views to change. However, while Inovio may elect to update these forward-looking statements at some point in the future, the company specifically disclaims any obligation to do so, except as may be required by law. These forward-looking statements should not be relied upon as representing Inovio's views as of any date subsequent to the date of this release.

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