NEWS RELEASE

Inovio Pharmaceutical's DNA Vaccine for Zika Virus Induces Robust Immune Responses in Preclinical Study

2016-02-17

Biotech begins clinical manufacturing; expects to test Zika vaccine in humans in 2016

PLYMOUTH MEETING, Pa., Feb. 17, 2016 (GLOBE NEWSWIRE) -- Inovio Pharmaceuticals, Inc. (NASDAQ:INO) announced today that preclinical testing of its synthetic vaccine for the Zika virus induced robust and durable immune responses, demonstrating the potential for a SynCon® vaccine to prevent and treat infections from this harmful pathogen. Health authorities have observed neurological and autoimmune complications potentially associated with Zika virus, including microcephaly in newborns and Guillain-Barre syndrome. Inovio is developing its Zika vaccine with GeneOne Life Sciences (KSE:011000) and academic collaborators.

Dr. J. Joseph Kim, Inovio's President and CEO, said, "Using our SynCon® technology we rapidly generated a synthetic vaccine candidate that shows promise as a preventive and treatment. With robust antibody and killer T cell responses generated by our vaccine in mice, we will next test the vaccine in non-human primates and initiate clinical product manufacturing. We plan to initiate phase I human testing of our Zika vaccine before the end of 2016."

In this pre-clinical study, DNA vaccine constructs targeting multiple Zika virus antigens were synthetically generated using Inovio's SynCon vaccine technology. These SynCon constructs were administered using Inovio's CELLECTRA® electroporation delivery technology. Inovio's Zika DNA vaccine resulted in seroconversion, or the development of detectable specific antibodies in the blood, in all vaccinated mice. Researchers also observed that vaccination generated robust and broad T cell responses as analyzed by the standardized T cell ELISPOT assay. These findings are vital given the potential importance of neutralizing antibodies in preventing infection and the role T cells play in clearing infection by killing cells that harbor the virus.

Zika virus belongs to the flavivirus family, which includes dengue and West Nile virus (WNV). Inovio previously published robust immunogenicity and challenge protection data for its SynCon dengue and WNV vaccine candidates. Inovio’s Zika program builds on its extensive previous preclinical development experience with flavivirus-related vaccines.

About Zika Virus

First identified in Uganda, Zika virus subsequently spread to equatorial Asia and over the past two years has rapidly spread through the South Pacific, including Hawaii, and to South America, Central America, and the Caribbean. Zika virus is a flavivirus, a family of viruses including yellow fever, dengue, and West Nile virus, which are introduced to people through mosquito bites. Because the Aedes species of mosquitoes that spread Zika virus is found throughout the world there is concern that outbreaks will spread to new countries. There is also concern that Zika can spread sexually, as has been reported for some returning travelers. In February 2016 WHO stated that 39 countries had reported locally acquired circulation of the Zika virus since January 2007. Geographical distribution of the virus has steadily expanded.

The most common symptoms of Zika virus are fever, rash, joint pain, and conjunctivitis. More seriously, a possible link to a severe birth defect called microcephaly has recently been observed resulting from infected mothers. Microcephaly is a rare condition marked by an abnormally small head and incomplete brain development. There may also be a link with Guillain-Barré syndrome, a disease in which the body's immune system mistakenly attacks peripheral nerves. Symptoms start with muscle weakness. In severe cases the person is almost totally paralyzed and the disorder can be life threatening.

No vaccine or therapy currently exists for the Zika virus.

About GeneOne Life Science

GeneOne Life Science Inc. is an international DNA vaccine developer and leading contract manufacturer of DNA plasmid-based agents for preclinical and clinical trials for global companies and institutions. It researches and develops DNA vaccines to prevent and treat incurable diseases in South Korea and internationally. The company is headquartered in Seoul, South Korea. VGXI, Inc., GeneOne's wholly-owned manufacturing subsidiary located in Texas, is the largest pure-play cGMP DNA plasmid manufacturing facility in the world.

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. The company is advancing a growing clinical and preclinical stage product pipeline. Partners and collaborators include MedImmune, Roche, University of Pennsylvania, DARPA, GeneOne Life Science, Drexel University, NIH, HIV Vaccines Trial Network, National Cancer Institute, U.S. Military HIV Research Program, and University of Manitoba. 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 immune therapy and vaccine products, our ability to advance our portfolio of immune-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, 2014, our Form 10-Q for the quarter ended September 30, 2015, 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.

Investors:
Bernie Hertel
Inovio Pharmaceuticals
858-410-3101
bhertel@inovio.com

Media:
Jeff Richardson
Inovio Pharmaceuticals
267-440-4211
jrichardson@inovio.com

Source: Inovio Pharmaceuticals