# Inovio DNA Vaccine Protects 100% Against MERS Virus in Non-Human Primates

**Inovio Pharmaceuticals Inc. {NASDAQ: INO}** have made a very positive announcement with regards to their DNA Vaccine for protection against Middle East Respiratory Syndrome (MERS).

A recent outbreak resulted in 36 deaths in South Korea, but most victims are in the Middle East.

Early results in trials using non human primates gave 100% protection against the virus

**Inovio Pharmaceuticals DNA Vaccine Protects 100% Against Deadly MERS Virus in Non-Human Primates**

**Promising data on preventive vaccine appears in the peer-reviewed journal Science Translational Medicine**

PLYMOUTH MEETING, Pa. – August 19, 2015 – **Inovio Pharmaceuticals Inc. {NASDAQ: INO}** today announced its DNA vaccine targeting the virulent Middle East Respiratory Syndrome (MERS) induced 100% protection from a live virus challenge in a preclinical study.

This medical advancement is notable because there is no vaccine or effective treatment for the MERS virus, which is clearly able to transmit from human to human. Since 2012, MERS has infected 1,400 people and killed over 500. Recently, the

largest outbreak outside of Saudi Arabia of this emergent global health concern infected 186 people with 36 fatalities in South Korea.

In preclinical studies, Inovio and its collaborators evaluated its synthetic DNA-based MERS vaccine in mice, camels and monkeys, or non-human primates. In all three species, the vaccine induced robust immune responses capable of preventing the virus from infecting cells. The data from camels is an important finding because camels represent not only a host reservoir of the disease but act as a mode of transmission to humans. In monkeys, all vaccinated animals in the study were protected from symptoms of MERS disease when challenged with a live MERS virus. Inovio has reported on the preventive power of its synthetic DNA-based vaccines in a variety of infectious diseases including HIV, influenza, hepatitis B, Ebola and dengue.

Results from Inovio's MERS vaccine development efforts appear in the peer-reviewed journal Science Translational Medicine in an article entitled, "*A synthetic consensus anti-spike protein DNA vaccine induces protective immunity against Middle East Respiratory Syndrome Coronavirus in non-human primates*." Inovio's collaborators for this study include researchers from the University of Pennsylvania, Public Health Agency of Canada, NIH, University of Washington, and University of South Florida.

**Dr. J. Joseph Kim, President and CEO, Inovio**, said: "*Once again, our data demonstrates we can rapidly turn our SynCon® DNA-based immunotherapy platform to create innovative products with the potential to prevent and treat multiple infectious diseases and cancers. In this preclinical study, our synthetic*

*vaccine shows its capability to combat a disease for which there is no vaccine. We look forward to clinically testing this product as an effective shield against the deadly MERS virus*."

Under a previously announced collaboration agreement with GeneOne Life Science Inc. (KSE: 011000), Inovio's MERS vaccine product will advance into a clinical trial in healthy volunteers in the fourth quarter of this year. GeneOne will fund and conduct a phase I trial to evaluate the safety, tolerability and immunogenicity of the vaccine.

**About Inovio's SynCon® Immunotherapy and Vaccine Design**

Inovio's antigen-targeting DNA immunotherapies are designed to activate robust, durable and functional immune responses against cancers or infectious diseases. Our proprietary SynCon process also has a greater purpose: to break the immune system's tolerance to cancer or provide universal protection against unmatched mutating viruses. We identify immunologically important characteristics from multiple variants or strains of the disease, then synthetically create a novel, patentable genetic sequence for each target antigen. Our immunotherapies and vaccines enable the production of these consensus antigens in the body, activating a broader immune response "footprint" than is possible naturally or by other technologies.

**About Inovio Pharmaceuticals, Inc.**

Inovio is revolutionizing the fight against cancer and infectious diseases. Our immunotherapies uniquely activate best-in-class immune responses to prevent and treat disease,

and have shown clinically significant efficacy 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, 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.

**CONTACT**:

Bernie Hertel, Inovio Pharmaceuticals,

+1 858-410-3101,

bhertel@inovio.com