



NEWS RELEASE

Inovio's MERS Vaccine Generates High Levels of Antibodies and Induces Broad-based T Cell Responses in Phase 1 Study

2018-06-27

Phase 1/2 vaccine trial against the Middle East Respiratory Syndrome (MERS) will begin this summer in Korea; CEPI grant supports Inovio's MERS vaccine through Phase 2 testing

PLYMOUTH MEETING, Pa., June 27, 2018 (GLOBE NEWSWIRE) -- Inovio Pharmaceuticals, Inc. (NASDAQ:INO) today announced positive Phase 1 results of its collaborative vaccine study with INO-4700 (GLS-5300) against MERS (Middle East Respiratory Syndrome). Results for INO-4700, which is being co-developed by Inovio and GeneOne Life Science Inc. (KSE:011000), showed that the drug was well-tolerated and demonstrated overall high levels of antibody responses in roughly 95% of subjects, while also generating broad-based T cell responses in nearly 90% of study participants.

The Phase 1, open-label, dose-escalation MERS vaccine trial, in partnership with the Walter Reed Army Institute of Research in Maryland, displayed antibody responses by ELISA in 94% of subjects at week 14 (two weeks post-third dose). Additionally, there were no statistically significant dose-dependent differences in antibody response rates (91%, 95%, and 95% at doses of 0.67, 2, and 6 mg, respectively). Durable antibody responses to INO-4700 were also maintained through 60 weeks following dosing. Dr. Joel Maslow, GeneOne's Chief Medical Officer, presented the data Tuesday this week in Seoul, Korea at the WHO-IVI Joint Symposium for MERS-CoV Vaccine Development.

Dr. J. Joseph Kim, Inovio President and CEO, said, "Inovio is utilizing our versatile immunotherapy and vaccine platform to target and develop the most advanced preventive vaccine for MERS, a virulent viral infection with no medical countermeasure. This trial further demonstrates Inovio's commitment to fighting emerging viral threats while also continuing to validate consistent high levels of both immune and antibody responses across our infectious disease platform. We look forward to continuing this development in a partnership with GeneOne and CEPI for developing novel therapies for MERS."

In April 2018, Inovio was awarded \$56 million to develop a MERS vaccine through Phase 2 by The Coalition for Epidemic Preparedness Innovations (CEPI). The shared goal of Inovio and CEPI is for the MERS vaccine to be available for stockpile as soon as possible for emergency use. The CEPI funding also included support for Inovio's vaccine against the Lassa virus.

In collaboration with GeneOne Life Science, Inovio plans to begin a Phase 1/2 study for MERS in the third quarter of this year. The study will be conducted by GeneOne Life Science in Korea and fully funded by a \$34 million grant from the Samsung Foundation through the International Vaccine Institute.

In preclinical testing, INO-4700 induced 100% protection from a live virus challenge in a rhesus macaque non-human primate study. Inovio and its collaborators evaluated its MERS vaccine in mice, camels as well as non-human primates. As published in *Science Translational Medicine*, the vaccine induced robust immune responses in all three species. In monkeys, all vaccinated animals in the study were protected from symptoms of MERS when challenged with a live MERS virus.

About MERS

Middle East Respiratory Syndrome is caused by a coronavirus that is related to the virus which causes severe acute respiratory syndrome (SARS). While the SARS coronavirus infected and caused illness in more than 8,000 people worldwide, the disease was short-lived between 2002 and 2004 and had a case fatality rate of about 10%. Since the MERS-CoV was first identified in Saudi Arabia in 2012, as of May 2018 the World Health Organization indicates that laboratory-confirmed MERS cases have been reported for 2,220 people worldwide, with 790 deaths, for a case fatality rate of 36%. Local occasional transmission is still ongoing, primarily in Saudi Arabia where a hospital outbreak occurred earlier this year. Highlighting the global concern for MERS, in the summer of 2015 a single business person returned to South Korea from Saudi Arabia and was the index case for a South Korea epidemic in 17 hospitals around the country. That epidemic was comprised of 186 confirmed cases with a 20% case fatality rate.

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, ASPIRE, 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, the 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, our plans and expectations regarding partnerships and the plans of GENEOS Therapeutics, Inc. to raise capital. 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 March 31, 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.

CONTACTS:

Investors: Ben Matone, Inovio, 484-362-0076, ben.matone@inovio.com

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

Source: Inovio Pharmaceuticals, Inc.