NEWS RELEASE

INOVIO and GeneOne Life Science Report Positive Phase 1/2a Clinical Data With DNA Vaccine INO-4700 for MERS Coronavirus at the American Society of Gene & Cell Therapy (ASGCT) Conference

4/28/2020

- INO-4700 (GLS-5300) DNA vaccine demonstrates 100% binding and 92% neutralizing antibody responses against MERS-CoV
- INO-4800 DNA vaccine for COVID-19 currently in Phase 1 trial utilizes identical strategy targeting Spike protein and CELLECTRA intradermal delivery

PLYMOUTH MEETING, Pa. and SEOUL, South Korea, April 28, 2020 /PRNewswire/ -- INOVIO (NASDAQ:INO) and GeneOne Life Science (KSE:011000) today announced interim data through week 16 from a Phase 1/2a trial of DNA vaccine INO-4700 (also called GLS-5300) for MERS coronavirus (MERS-CoV). Vaccine recipients demonstrated strong antibody and T cell immune responses after 2 or 3 doses with 0.6 mg of INO-4700, a DNA vaccine that targets the MERS-CoV Spike (S) glycoprotein, delivered with intradermal CELLECTRA® device. The vaccination regimen was well-tolerated with no vaccine-associated severe adverse events (SAEs). The researchers at the Wistar Institute, Seoul National University Hospital, and the International Vaccine Institute (IVI) collaborated on this study with funding from IVI. These results were selected for an oral presentation at the American Society of Gene & Cell Therapy (ASGCT) Conference to be held virtually from May 12-15, 2020.

Dr. J. Joseph Kim, INOVIO's President & CEO, said, "The INO-4700 Phase 1/2a clinical trial data demonstrates that our MERS DNA vaccine is able to generate robust immune responses using INOVIO's intradermal CELLECTRA delivery system. This exciting data provides a great foundation for the ongoing COVID-19 vaccine advancement as it demonstrates the power of INOVIO's delivery system and the strength of our coronavirus experience. As we have designed our COVID-19 vaccine INO-4800 using the same strategy as INO-4700, including the selection of full length Spike protein as the target and the use of intradermal CELLECTRA device, we are hopeful that the ongoing Phase 1 clinical trial with INO-4800 would generate similar clinical immune responses and safety data as we have just reported for INO-4700."

Overall, for those receiving 0.6 mg of INO-4700, 88% demonstrated seroconversion after a 2 dose regimen at 0 and 8 weeks, while for those receiving a 3 dose regimen given at 0, 4 and 12 weeks, 84% seroverted after 2 doses and 100% after 3 doses, as measured by a binding antibody assay against the full-length S protein (ELISA). Additionally, 92% of the vaccine recipients in both groups displayed the ability to neutralize the virus using a neutralization assay (EMC2012-Vero neutralization). Robust T cell responses were observed in 60% of vaccine recipients after the 2 dose regimen and 84% of those in the 3 dose group (ELISpot assay). Interestingly, a single dose of 0.6 mg of INO-4700 intradermal vaccination resulted in 74% binding antibody response rate and 48% neutralization antibody response rate.

Dr. Jerome Kim, Director General of IVI, said, "IVI is pleased to join partners in reporting these findings as a result of our collaboration in the world's first vaccine candidate against MERS. These and subsequent clinical trials could pave the way for accelerated development of a DNA vaccine against MERS."

This is the 2nd study of INO-4700 (GLS-5300) in a clinical trial, the first being a 75-person study (MERS-001) of vaccine administered intramuscularly and followed by electroporation at either 0.67, 2 or 6 mg. Notably in the MERS-001 study, there was no significant difference between dose levels and vaccine induced immune responses were similar to those seen in recovered patients following natural infection (Lancet Infectious Disease, 2019). INO-4700 vaccination has previously been shown to provide 100% protection against MERS virus disease in a pathogenic monkey challenge model. INOVIO is planning to advance INO-4700 into a Phase 2 clinical trial in the Middle East with a previously announced funding of $56 million by the Coalition for Epidemic Preparedness Innovations (CEPI).

About INOVIO's Global Coalition Advancing INO-4800

INOVIO has assembled a global coalition of collaborators, partners and funders to rapidly advance INO-4800. R&D collaborators to date include the Wistar Institute, the University of Pennsylvania, Université Laval, and the University of Texas. INOVIO has partnered with Beijing Advaccine and the International Vaccine Institute to advance clinical trials of INO-4800 in China and South Korea, respectively. INOVIO is also assessing preclinical efficacy of INO-4800 in several animal challenge models with Public Health England (PHE) and Commonwealth Scientific and Industrial Research Organization (CSIRO) in Australia. INOVIO is also working with a team of contract manufacturers including VGXI, Inc., Richter-Helm, and Ology Biosciences to produce one million doses of INO-4800 by year-end and seeking additional external funding and partnerships to scale up the manufacturing capacities to satisfy the urgent global demand for a safe and effective vaccine. To date, CEPI, the Bill & Melinda Gates Foundation, and the US Department of Defense have contributed significant funding to the advancement and manufacturing of INO-4800.

About INO-4800

INO-4800 is INOVIO's DNA vaccine candidate created to protect against the novel coronavirus SARS-CoV-2, which causes COVID-19. INO-4800 was designed using INOVIO's proprietary DNA medicine platform rapidly after the publication of the genetic sequence of the coronavirus that causes COVID-19. INOVIO has deep experience working with coronaviruses and is the only company with a Phase 2a vaccine for a related coronavirus that causes Middle East Respiratory Syndrome (MERS).

About INOVIO's DNA Medicines Platform

INOVIO has 15 DNA medicine clinical programs currently in development focused on HPV-associated diseases, cancer, and infectious diseases, including coronaviruses associated with MERS and COVID-19 diseases being developed under grants from the Coalition for Epidemic Preparedness Innovations (CEPI). DNA medicines are composed of optimized DNA plasmids, which are small circles of double-stranded DNA that are synthesized or reorganized by a computer sequencing technology and designed to produce a specific immune response in the body.

INOVIO's DNA medicines deliver optimized plasmids directly into cells intramuscularly or intradermally using INOVIO's proprietary hand-held smart device called CELLECTRA®. The CELLECTRA device uses a brief electrical pulse to reversibly open small pores in the cell to allow the plasmids to enter, overcoming a key limitation of other DNA and other nucleic acid approaches, such as mRNA. Once inside the cell, the DNA plasmids enable the cell to produce the targeted antigen. The antigen is processed naturally in the cell and triggers the desired T cell and antibody-mediated immune responses. Administration with the CELLECTRA device ensures that the DNA medicine is efficiently delivered directly into the body's cells, where it can go to work to drive an immune response. INOVIO's DNA medicines do not interfere with or change in any way an individual's own DNA. The advantages of INOVIO's DNA medicine platform are how fast DNA medicines can be designed and manufactured, the stability of the products which do not require freezing in storage and transport, and the robust immune response, safety profile, and tolerability that have been demonstrated in clinical trials.

With more than 2,000 patients receiving INOVIO investigational DNA medicines in more than 6,000 applications across a range of clinical trials, INOVIO has a strong track record of rapidly generating DNA medicine candidates to meet urgent global health needs.

About GeneOne Life Science

GeneOne Life Science Inc. is an international developer of DNA and RNA vaccines, nucleic acid-based therapeutics, and small molecule therapies. GeneOne sponsored the MERS-001 and MERS-002 clinical trials against MERS-CoV and the ZIKA-001 and ZIKA-002 vaccine studies against the Zika virus. GeneOne's research group has developed DNA vaccines and products to prevent and treat incurable diseases as well as hematologic diseases, metabolic

diseases, and cancers. GeneOne is a recognized leader in the fight against Emerging Infectious Diseases (EIDs) with a pipeline to address a number of pathogenic organisms with a role in numerous international advisory committees regarding vaccine development against EIDs. The company is headquartered in Seoul, South Korea. VGXI, Inc., GeneOne's wholly-owned manufacturing subsidiary, located in Texas, is the leading cGMP DNA plasmid manufacturing facility in the world for the vaccine, cell therapy, and gene therapy industries. VGXI has manufactured numerous DNA vaccines against EIDs including the GLS-5300/INO-4700 and INO-4800 vaccines for MERS-CoV and COVID-19, respectively. For more information, visit **www.genels.com** and **www.vgxii.com**.

About the International Vaccine Institute (IVI)

The International Vaccine Institute (IVI) is a nonprofit inter-governmental organization established in 1997 at the initiative of the United Nations Development Programme (UNDP). Headquartered in Seoul, South Korea, IVI was the first international organization hosted by Korea. IVI has 35 signatory countries and the World Health Organization (WHO) on its treaty, including Republic of Korea, Sweden and India as state funders.

Our mandate is to make vaccines available and accessible for the world's most vulnerable people. We focus on infectious diseases of global health importance such as cholera, typhoid, shigella, salmonella, schistosomiasis, Group A Streptococcus, Hepatitis A, HPV, TB, HIV, MERS, COVID-19, as well as antimicrobial resistance. For more information, please visit **https://www.ivi.int**

About INOVIO

INOVIO is a biotechnology company focused on rapidly bringing to market precisely designed DNA medicines to potentially treat and protect people from diseases associated with HPV, cancer, and infectious diseases. INOVIO is the first and only company to have clinically demonstrated that a DNA medicine can be delivered directly into cells in the body via a proprietary smart device to produce a robust and tolerable immune response. Specifically, INOVIO's lead candidate VGX-3100, currently in Phase 3 trials for precancerous cervical dysplasia, destroyed and cleared high-risk HPV 16 and 18 in a Phase 2b clinical trial. High-risk HPV is responsible for 70% of cervical cancer, 91% of anal cancer, and 69% of vulvar cancer. Also in development are programs targeting HPV-related cancers and a rare HPV-related disease, recurrent respiratory papillomatosis (RRP); non-HPV-related cancers glioblastoma multiforme (GBM) and prostate cancer; as well as externally funded infectious disease DNA vaccine development programs in Zika, Lassa fever, Ebola, HIV, and coronaviruses associated with MERS and COVID-19 diseases. Partners and collaborators include Advaccine, ApolloBio Corporation, AstraZeneca, The Bill & Melinda Gates Foundation, Coalition for Epidemic Preparedness Innovations (CEPI), Defense Advanced Research Projects Agency (DARPA)/Department of Defense (DOD), GeneOne Life Science/VGXI, HIV Vaccines Trial Network, International Vaccine Institute (IVI), Medical CBRN Defense Consortium (MCDC), National Cancer Institute, National Institutes of Health, National Institute of Allergy and Infectious Diseases, Ology Bioservices, Plumbline Life Sciences, Regeneron,

Richter-Helm, Roche/Genentech, University of Pennsylvania, Walter Reed Army Institute of Research, and The Wistar Institute. INOVIO also is a proud recipient of 2020 Women on Boards "W" designation recognizing companies with more than 20% women on their board of directors. For more information, 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 DNA medicines, our expectations regarding our research and development programs, as well as commercialization activities, including the planned initiation and conduct of clinical trials, the availability and timing of data from those trials and our commercialization strategy and tactics. Actual events or results may differ from the expectations set forth herein as a result of a number of factors, including uncertainties inherent in preclinical studies, clinical trials, product development programs and commercialization activities and outcomes, 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, 2019, and other filings we make from time to time with the Securities and Exchange Commission. 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 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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