NEWS RELEASE

INOVIO Announces First Subject Dosed in Phase 1B Clinical Trial for its DNA Vaccine Against Lassa Fever, INO-4500, in West Africa

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Phase 1B clinical trial is first study for Lassa fever conducted in Africa
Goal is for vaccine to be available for emergency use as stockpile product following Phase 2
Progress on INO-4500 reflects INOVIO's focus on and continued commitment to the fight against infectious diseases
Trial fully funded by the Coalition for Epidemic Preparedness (CEPI)

PLYMOUTH MEETING, Pa., Feb. 23, 2021 /PRNewswire/ -- INOVIO (NASDAQ:INO), a biotechnology company focused on bringing to market precisely designed DNA medicines to treat and protect people from infectious diseases and cancer, today announced the first participant was dosed in a Phase 1B clinical trial for INO-4500, its DNA vaccine candidate for Lassa fever, in Ghana. The Phase 1B clinical trial (LSV-002), ongoing at the Noguchi Memorial Institute for Medical Research in Accra, Ghana, is the first vaccine clinical trial for Lassa fever to be conducted in West Africa, where the infection is endemic. INO-4500 is also the first vaccine candidate for Lassa fever to enter human trials.

INOVIO is advancing INO-4500 with full funding from the Coalition for Epidemic Preparedness Innovations (CEPI), a global partnership that leverages funding from public, private, philanthropic, and civil society organizations to support research projects to develop vaccines against emerging infectious diseases. INOVIO previously received a $56 million grant from CEPI in 2018, under which the company is developing vaccine candidates for Lassa fever and Middle East Respiratory Syndrome (MERS). INOVIO and CEPI are committed to making a vaccine available as soon as possible for emergency use as a stockpile product post-Phase 2 testing.

Dr. J. Joseph Kim, President and CEO of INOVIO, said, "We have observed that INO-4500 vaccination generates robust antibody and T cell immune responses in a Phase 1 clinical trial conducted in the U.S., and this continued advancement of INO-4500 into Phase 1B trial is another important step in a fight against Lassa fever. This trial also represents a significant advancement within INOVIO's infectious disease portfolio and further validates the

company's DNA medicines platform and proprietary CELLECTRA® delivery device."

Dr. Kim added, "This is the same device being used to deliver our DNA vaccine candidate, INO-4800, in the Phase 2 segment of our INNOVATE Phase 2/3 COVID-19 trial. We are grateful to CEPI for the continued support and confidence in our vaccine programs – and we look forward to advancing INO-4500 as a vaccine candidate against Lassa fever."

Dr Melanie Saville, Director of Vaccine R&D at CEPI, said, "We are delighted to see our partner INOVIO launch the first-ever Lassa vaccine trial on the African continent, with today's announcement marking an important milestone in the fight against this deadly hemorrhagic fever. With the emerging infectious disease remaining a serious public health threat across West Africa, including Ghana, it is crucial that populations can participate in vaccine trials to ensure sufficient data is generated so that they can be confidently rolled out in outbreak-prone areas in the future, dependent on safety and immunogenicity testing. Together, this work plays into broader research efforts led by CEPI to minimize the threat of the disease, including the launch of the largest-ever Lassa fever epidemiology research program launched in West Africa late last year."

Professor Kwadwo A. Koram, Principal Investigator of the clinical trial and head of Noguchi Medical Center, said, "I see this as a great opportunity to use the resources of the Institute for the benefit not only of the country but the sub-region at large. We are grateful to the sponsor, INOVIO Pharmaceuticals, and hope that this will be only the beginning of a long and fruitful collaboration in the fight against infectious diseases."

About INOVIO's Phase 1B Clinical Trial for INO-4500

INOVIO's Phase 1B clinical trial, LSV-002, will enroll approximately 220 adult participants who are 18-50 years old, with the primary endpoints of evaluating safety and immunogenicity in an African population. The dosing regimen involves two vaccinations at 0 and 28 days with either 1.0 mg or 2.0 mg dosing levels. In addition to providing valuable insights on the INO-4500 safety and immunogenicity profile, this trial will inform dose selection for subsequent Phase 2 studies in West Africa.

Since its establishment in 1979, the Noguchi Memorial Institute for Medical Research ("The Institute") has gained global recognition as a leading biomedical research institute in Africa, building capacity for prevention and control of endemic diseases, as well as emerging and re-emerging diseases, in Ghana and the West African sub-region. The Institute has been a leader in developing effective diagnosis capabilities and clinical research for the treatment and protection against HIV/AIDS, H1N1 Pandemic Flu, Lassa fever, Yellow fever, Ebola virus disease, and malaria. The lead clinical Principal Investigator for LSV-002 is Professor Dr. Kwadwo A. Koram, an expert and specialist in tropical medicines and epidemiologist with more than 20 years of research experience, including malaria vaccines.

About Lassa Fever

Lassa fever is an animal-borne, acute hemorrhagic viral illness primarily observed in parts of West Africa. Infection is spread through contact with infected rodents, as well as person-to-person transmission via bodily fluids (primarily in health care settings). The disease can cause a range of outcomes, including fever, vomiting, and swelling of the face, pain in the chest, back and abdomen, bleeding of various parts of the body including the eyes and nose, and death. Lassa virus infection in West Africa is estimated to affect 100,000 to 300,000 people annually and is responsible for 10-16% of hospital admissions in the region. The virus is responsible for approximately 5,000 deaths annually.

Because of difficulties in diagnosing Lassa fever, the lack of standardized surveillance assays, and the remote nature of many of the areas in West Africa where outbreaks typically occur, the numbers of reported cases and deaths are very likely significantly lower than the actual numbers of cases and deaths. Though the majority (about 80%) of Lassa virus-infected persons are asymptomatic or have mild symptoms, the infection can be quite serious to fatal in others. The case-fatality among patients hospitalized for Lassa fever is about 15-20% and, in some epidemics, case-fatality has reached 50% in hospitalized patients. There are no licensed vaccines or treatments specifically for Lassa fever.

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) and the U.S. Department of Defense. 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 observed in clinical trials.

With more than 3,000 patients receiving INOVIO investigational DNA medicines in more than 7,000 applications across a range of clinical trials, INOVIO has a strong track record of rapidly generating DNA medicine candidates with potential to meet urgent global health needs.

About INOVIO

INOVIO is a biotechnology company focused on rapidly bringing to market precisely designed DNA medicines to treat and protect people from infectious diseases, cancer, and diseases associated with HPV. 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)/Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND)/Department of Defense (DoD), HIV Vaccines Trial Network, International Vaccine Institute (IVI), Kaneka Eurogentec, Medical CBRN Defense Consortium (MCDC), National Cancer Institute, National Institutes of Health, National Institute of Allergy and Infectious Diseases, Ology Bioservices, the Parker Institute for Cancer Immunotherapy, Plumbline Life Sciences, Regeneron, Richter-Helm BioLogics, Thermo Fisher Scientific, 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**.

About CEPI

CEPI is an innovative partnership between public, private, philanthropic, and civil organizations, launched at Davos in 2017, to develop vaccines to stop future epidemics. CEPI has moved with great urgency and in coordination with WHO in response to the emergence of COVID-19. CEPI has initiated 11 partnerships to develop vaccines against the novel coronavirus. The programs will leverage rapid response platforms already supported by CEPI as well as new partnerships. The aim is to advance COVID-19 vaccine candidates into clinical testing as quickly as possible.

Before the emergence of COVID-19 CEPI's priority diseases included Ebola virus, Lassa virus, Middle East Respiratory Syndrome coronavirus, Nipah virus, Rift Valley fever and Chikungunya virus. CEPI also invested in platform technologies that can be used for rapid vaccine and immunoprophylactic development against unknown pathogens (Disease X). Follow our news **page** for the latest updates. Follow us on **Twitter** and **LinkedIn**.

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This press release contains certain forward-looking statements relating to our business, including our plans to develop and manufacture DNA medicines, our expectations regarding our research and development programs, and our ability to successfully manufacture and produce large quantities of our product candidates if they receive regulatory approval. 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, our ability to secure sufficient manufacturing capacity to mass produce our product candidates, 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 medicines, our ability to support our pipeline of DNA medicine 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, our Quarterly Report on Form 10-Q for the quarter ended September 30, 2020 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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