NEWS RELEASE

Inovio First to Advance Lassa Fever Candidate Vaccine Into a Clinical Trial

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Subjects dosed in First-in-Human study of INO-4500 funded by the Coalition for Epidemic Preparedness Innovations
Planned for emergency use as a stockpiled vaccine
PLYMOUTH MEETING, Pa. and OSLO, Norway, May 21, 2019 /PRNewswire/ -- Inovio Pharmaceuticals, Inc. (NASDAQ: INO), together with CEPI, today announced it has dosed subjects in a Phase 1, first-in-human clinical trial to evaluate INO-4500, its DNA candidate vaccine to prevent infection from the Lassa virus. Inovio plans to enroll approximately 60 volunteers in this placebo controlled, blinded, dose escalation study evaluating INO-4500 for safety, tolerability and immune responses. This Inovio trial represents the first Lassa candidate vaccine to enter the clinic. This Inovio-sponsored trial, as well as its INO-4500 program, is fully funded through a global partnership with CEPI – the Coalition for Epidemic Preparedness Innovations.

Melanie Saville, Director of Vaccine Development at CEPI, said, "This is an important development in our work to accelerate the development of vaccines against emerging infectious diseases. With marked increases in the number of cases documented in Nigeria over the last two years and outbreaks occurring annually, Lassa fever remains a serious public health threat across West Africa. We welcome Inovio's work and progress which could pave the way to reducing the great suffering caused by this disease."

Dr. J. Joseph Kim, Inovio's President and CEO, said, "Inovio's class-leading synthetic nucleic vaccines delivered intradermally with its proprietary CELLECTRA® efficacy enhancing systems are well suited to rapidly produce countermeasures against emerging viral threats potentially protecting large populations from a pandemic. Inovio has rapidly advanced several global health candidate vaccines, including those against HIV, Ebola, MERS, and Zika, and has reported above 90% immune response rates from multiple clinical studies. We join our partner CEPI in the shared quest to bring new vaccines to medicine and save lives."

In a previously published paper, Inovio reported that its DNA candidate vaccine against Lassa fever provided 100% protection in non-human primates challenged with a lethal dose of the virus in a pre-clinical study funded by a $3.5 million grant from the National Institute of Allergy and Infectious Diseases (NIAID). Lassa fever is an acute viral illness that occurs in West Africa and can cause recurrent large outbreaks with high case fatality rates in the region. There is no licensed vaccine or approved treatment for Lassa fever.

Leveraging results of this study, Inovio expects to advance its Lassa candidate vaccine into a Phase 2 field trial in endemic countries of West Africa later in 2019/2020. With satisfactory Phase 2 data, CEPI in cooperation with local regulatory authorities and the WHO, may stockpile the Inovio vaccine for future use throughout the region. For more information on this study.

Last year, Inovio received a $56 million grant from CEPI under which Inovio will develop vaccine candidates through Phase 2 against Lassa fever and MERS (Middle East Respiratory Syndrome.) The shared goal of Inovio and CEPI is for a Lassa vaccine to be available as soon as possible for emergency use as a stockpile post-Phase 2 testing.

Inovio's synthetic nucleic acid platform of immunotherapies and vaccines deliver optimized synthetic antigen genes into cells with CELLECTRA® immune enhancing systems, where they are translated into protein antigens that activate an individual's immune system to generate robust targeted T cell and antibody responses. Inovio's immunotherapies function exclusively in vivo, and have generated an antigen-specific immune response against targeted diseases in all clinical trials to date.

About Lassa Fever

Lassa fever, also known as Lassa hemorrhagic fever, is an acute viral disease which occurs mostly in West Africa. 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. This infection is spread through contact with infected rodents. Person to person transmission is also possible, via bodily fluids, albeit less common. Lassa virus infection in West Africa is estimated to affect 300,000 people annually, resulting in approximately 5,000 deaths, as disease and infection surveillance has been poor. Because of difficulties in diagnosing Lassa fever and the remoteness in many areas that the disease occurs in, the numbers of reported cases and deaths are very likely significantly lower than the true 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. There are no licensed vaccines or treatments specifically for Lassa. The case-fatality among patients hospitalized for Lassa fever is about 15% to 20%, and in some epidemics case-fatality has reached 50% in hospitalized patients -- e.g. in the 2015-2016 Nigeria portion of the West Africa outbreak. Of the survivors of Lassa fever, about one-third have sudden-onset hearing loss. In Nigeria, an unprecedented outbreak has been underway this year, with more cases recorded and reported in the first two months than in any previous full year there. From January 1 to December 31, 2018, a total 633 confirmed and 20 probable cases were reported to the Nigeria Centre for Disease Control with 171 deaths among confirmed cases and 20 in probable cases, yielding a 27% case-fatality rate in confirmed cases.

About CEPI

CEPI is an innovative partnership between public, private, philanthropic, and civil organisations launched in Davos in 2017 to develop vaccines to stop future epidemics. CEPI has received multi-year funding from Norway, Germany, Japan, Canada, Australia, and the Bill & Melinda Gates Foundation, and Wellcome. CEPI has also received single-year investments from the government of Belgium

and the United Kingdom. The European Commission foresees substantial financial contributions to support relevant projects through EC mechanisms. CEPI has reached over US$ 750 million of its $1 billion funding target. Since its launch in January 2017, CEPI has announced three calls for proposals. The first call was for candidate vaccines against Lassa virus, Middle East Respiratory Syndrome coronavirus (MERS-CoV), and Nipah virus. The second call was for the development of platforms that can be used for rapid vaccine development against unknown pathogens. The third call is for candidate vaccines against Rift Valley fever and Chikungunya viruses. To date, CEPI has committed to investing up to $350 million in 12 vaccine candidates (five against Lassa virus, four against MERS-CoV, three against Nipah virus) and three vaccine platforms to develop vaccines against Disease X. Learn more at **CEPI.net**. Follow us at @CEPIvaccines.

About Inovio Pharmaceuticals Inc.

Inovio is an innovative biotechnology company focused on the discovery, development, and commercialization of its synthetic nucleic technology targeted against cancers and infectious diseases. Inovio's proprietary technology platform applies antigen sequencing and 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'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 HPV-related cancers, bladder cancer, and glioblastoma, as well as platform development programs in hepatitis B, Zika, Ebola, MERS, and HIV. Partners and collaborators include AstraZeneca, Regeneron, Roche/Genentech, ApolloBio Corporation, GeneOne Life Science, The Bill & Melinda Gates Foundation, Coalition for Epidemic Preparedness Innovations, Defense Advanced Research Projects Agency, National Institutes of Health, National Institute of Allergy and Infectious Diseases, National Cancer Institute, HIV Vaccines Trial Network, Walter Reed Army Institute of Research, The Wistar Institute, and the University of Pennsylvania. For more information, visit **www.inovio.com**.

This press release contains certain forward-looking statements relating to our business, including our plans to develop DNA-based immunotherapies, 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. 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 immunotherapies, 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, 2018, our Quarterly Report on Form 10-Q for the quarter ended March 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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