NEWS RELEASE

INOVIO's Pan-COVID-19 Vaccine Candidate (INO-4802) Induces Broad Immunity Against Major Viral Variants in Preclinical Studies

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INOVIO's Pan-SARS-CoV-2 vaccine candidate INO-4802 is not matched to a single variant, unlike other variant vaccines in development; INO-4802 could potentially offer broader immune responses
Phase 1/2 clinical trials with INO-4802 are planned this year
PLYMOUTH MEETING, Pa., May 12, 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, cancer, and HPV-associated diseases, today announced that its next-generation Pan-COVID-19 vaccine candidate, INO-4802, induced potent neutralizing antibodies and T cell responses against the original Wuhan strain as well as against B.1.1.7 (UK variant), B.1.351 (South African variant) and P.1. (Brazilian variant) in preclinical models. These results demonstrate the potential of INOVIO's Pan-COVID-19 vaccine to induce cross-reactive immune responses against current and emerging viral variants as either a first-line vaccine, or potentially as a boost for individuals previously immunized with various Wuhan-matched vaccines.

Dr. Laurent M. Humeau, INOVIO's Chief Scientific Officer, said, "INOVIO is taking a dual-track approach in developing a COVID-19 vaccine because we recognize the need to support both pandemic and endemic considerations. In addition to our work on INO-4800, which we expect to enter a global Phase 3 trial this summer, we are also developing our next-generation Pan-COVID-19 variant vaccine, INO-4802, which is designed to protect against current and potentially future variants of concern. The study data we report today confirms our two-tiered development path is the best strategy for the short- and long-term fight against this virus."

First-generation COVID-19 vaccines were matched against the original Wuhan strain. These vaccines may have reduced efficacy against emerging COVID variants. In response, many of the next-generation vaccines under development are matched to a single variant currently circulating. INOVIO's Pan-COVID-19 vaccine approach is designed to provide cross-strain protection, immune coverage, reduced susceptibility to escape mutants, and non-

restricted geographical use against both known and potentially unknown variants. Preclinical data with INO-4802 in multiple models revealed both broader and increased levels of neutralizing antibodies against a panel of variants than strain-matched vaccines. Building on this initial work, INOVIO plans to conduct Phase 1/2 clinical trials this year with INO-4802.

To create INOVIO's Pan-COVID-19 vaccine candidate, variant sequences were identified over a four-month period starting in October 2020 from multiple geographic regions (Brazil, Canada, India, Italy, Japan, Nigeria, South Africa, United Kingdom, and the United States). Mutations in the spike sequences were aggregated for each region. The sequence results from these regions were then further engineered to determine a common set of overlapping mutations from emerging variations in the COVID spike protein sequences to generate INO-4802.

More information from this pre-clinical study can be found in the paper entitled: "Design and immunogenicity of a Pan-SARS-CoV-2 synthetic DNA vaccine," which has been published as a preprint in **BioRxiv** prior to peer review.

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 met primary and secondary endpoints for all evaluable subjects in REVEAL 1, in the first of two Phase 3 trials for precancerous cervical dysplasia, demonstrating ability to destroy and clear both high-grade cervical lesions and the underlying high-risk HPV 16 and 18. INOVIO is also evaluating INO-4800, a DNA vaccine candidate against COVID-19, in a Phase 2 clinical trial in the U.S., as well as Phase 2 trials in China and South Korea. 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**.

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This press release contains certain forward-looking statements relating to our business, including our plans to develop and commercialize DNA medicines, our expectations regarding our research and development programs, including the planned initiation and conduct of preclinical studies and clinical trials and the availability and timing of data from those studies and trials, 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 pre-clinical 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 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, 2020 , our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 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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