NEWS RELEASE

INOVIO Presents Clinical Results of its DNA Medicines INO-5401 + INO-9012 in Novel Combination with PD-1 Inhibitor Libtayo® (cemiplimab) in the Treatment of Newly Diagnosed Glioblastoma Multiforme at Society for Neuro-Oncology 2020 Annual Meeting

11/20/2020

Interim review in newly diagnosed glioblastoma patients provides OS18 data, demonstrates immunogenicity and tolerability in a majority of patients

PLYMOUTH MEETING, Pa., Nov. 20, 2020 /PRNewswire/ -- INOVIO (NASDAQ: INO), a biotechnology company focused on rapidly bringing to market precisely designed DNA medicines to treat and protect people from infectious diseases and cancer, announced today that data from the company's novel combination trial of DNA medicines INO-5401 and INO-9012 in combination with PD-1 inhibitor Libtayo® (cemiplimab) in the treatment of newly diagnosed glioblastoma (GBM), will be presented by Dr. David Reardon in the plenary session at the Society for Neuro-Oncology (SNO) 2020 Annual Meeting. The study demonstrated that INO-5401 + INO-9012 with Libtayo, radiation (RT) and temozolomide (TMZ) are tolerable, immunogenic, and may improve median survival for patients with newly diagnosed GBM. Survival data at 18 months showed that 70% (14/20) of MGMT promoter methylated GBM patients were alive, and 50% (16/32) of MGMT promoter unmethylated patients, which are the more difficult to treat group, were alive after 18 months. Median overall survival in the unmethylated GBM patients was 17.9 months, which compares favorably to historical controls; Median OS for methylated patients has not yet been reached and the study is ongoing.

Dr. David Reardon, Clinical Director of the Center for Neuro-Oncology at the Dana-Farber Cancer Institute and coordinating principal investigator of GBM-001 said, "This is a landmark combination trial in which a novel DNA vaccine is combined with a checkpoint inhibitor and radiation and chemotherapy. We look forward to continuing to review these data, with an eye towards those patients who are most likely to benefit from this innovative approach and to see whether, over time, there is an extension of survival in these very hard-to-treat patients. Coupling immune response with clinical outcome may prove insightful."

Interim data demonstrated that in the MGMT promoter unmethylated cohort, 19/22 (86%) subjects to date had an IFN-gamma T cell response that increased over baseline to one or more of the antigens encoded by INO-5401. In the MGMT promoter methylated cohort, 16/17 (94%) subjects to date had an IFN-gamma response that increased over baseline to one or more of the antigens encoded by INO-5401. The novel combination of INO-5401 + INO-9012 continues to demonstrate a well-tolerated safety profile when given not only with radiation and TMZ, but also with PD-1 blockade by Libtayo, which is being jointly developed by Regeneron and Sanofi.

Dr. Jeffrey Skolnik, INOVIO's senior vice president, clinical development, said, "INO-5401 + INO-9012, with Libtayo and RT/TMZ, generates cancer antigen-specific T cells that may be able to attack GBM and provide a survival advantage. We are using our knowledge of immunology to define a patient population for which this novel DNA medicine plus checkpoint inhibitor combination may offer a survival advantage, by continuing to assess all of our data: efficacy, safety and most important, immunogenicity and tissue expression data."

Additional data will be provided in the coming months, including correlative immunology and tissue data, as well as total study drug exposure and concomitant medication use.

INO-5401, INO-9012 and Libtayo, and the combination of these products have not been approved or evaluated by any Regulatory Authority worldwide for the treatment of newly diagnosed GBM.

Presentation Details

Abstract: LTBK-01

Title: "INO-5401 and INO-9012 delivered intramuscularly (IM) with electroporation (EP) in combination with cemiplimab (REGN2810) in newly diagnosed glioblastoma"

Presenting Author: Dr. David Reardon
Plenary Session Date and Time: 2020 SNO Annual Meeting, Plenary 1A, Friday, November 20, 2020 beginning at 11 a.m. EST

Study Design

The trial was designed to evaluate safety, immunogenicity and efficacy of INO-5401 and INO-9012 in combination with Libtayo, with radiation and chemotherapy, in subjects with newly diagnosed glioblastoma (GBM). This is a Phase 1/2, open-label, multi-center trial conducted in 52 evaluable patients with GBM. There are two cohorts in this trial. Cohort A includes 32 participants with a tumor with an unmethylated O6-methylguanine-deoxyribonucleic acid

(DNA) methyltransferase (MGMT) promoter. Cohort B includes 20 participants with a tumor with a MGMT methylated promoter. Both cohorts received INO-5401 and INO-9012 and Libtayo at the same doses and on the same dosing schedule, and both cohorts received radiation and TMZ. For more information of the clinical study, see **www.clinicaltrials.gov**, identifier NCT03491683.

About Glioblastoma Multiforme (GBM)

GBM is the most common and aggressive type of brain cancer and remains a devastating disease for both patients and caregivers. Its prognosis is extremely poor, despite a limited number of new therapies approved over the last 10 years. The median overall survival for patients receiving standard of care therapy is approximately 15 to 22 months and the median progression-free survival is approximately 7 months. In the U.S., the estimated annual incidence of GBM is 11,362 cases or 3.21 cases per 100,000 persons and the median age at diagnosis is 65 years.

About INO-5401 and INO-9012

INO-5401 encodes for INOVIO's SynCon® antigens for hTERT, WT1, and PSMA, and has the potential to be a powerful cancer immunotherapy in combination with checkpoint inhibitors. The National Cancer Institute previously highlighted hTERT, WT1, and PSMA among a list of important cancer antigens, designating them as high priorities for cancer immunotherapy development. These three antigens were reported to be over-expressed, and often mutated, in a variety of human cancers, and targeting these antigens may prove efficacious in the treatment of patients with cancer. INO-9012 encodes for IL-12, which is a T cell immune activator.

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 2,000 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), 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 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 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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