NEWS RELEASE

Inovio Initiates REVEAL 2 Global Phase 3 Clinical Study For the Treatment of HPV-Related Cervical Pre-cancer

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The second Phase 3 study initiation announcement made during the International HPV Awareness Day

PLYMOUTH MEETING, Pa., March 4, 2019 /PRNewswire/ -- Inovio Pharmaceuticals, Inc. (NASDAQ: INO) today announced the initiation and opening of sites to enroll the second portion of the company's Phase 3 program for VGX-3100, Inovio's DNA-based immunotherapy to treat cervical dysplasia caused by human papillomavirus (HPV). The study, named REVEAL 2, is the company's confirmatory stage Phase 3 clinical study and is designed to evaluate the efficacy and safety of VGX-3100. If approved after completion of the Phase 3 clinical trials, VGX-3100 will stand as the first immunotherapy for women with cervical dysplasia. The company made the announcement in concert with the celebration marking the 2019 International HPV Awareness Day. The annual campaign encourages everyone to take action to learn about HPV, and how to manage the risk of HPV related cancers and precancers. (For more information on HPV Day visit: **https://www.askabouthpv.org/**)

Dr. J. Joseph Kim, Inovio's President & CEO, said, "The early initiation of our REVEAL 2, our second Phase 3 study, marks another milestone for our lead product VGX-3100. I am confident in our team's experience and expertise to advance the REVEAL program forward to deliver on our goal to file a BLA for VGX-3100 in 2021. And most importantly, we remember that patients are waiting and our efforts are bringing an innovative, impactful therapy to people where surgery is their only option.

Dr. Kim added, "Inovio is also investigating VGX-3100 in Phase 2 clinical trials for treating anal and vulvar dysplasia with interim results expected later this year."

Inovio's Phase 3 program is assessing the efficacy of VGX-3100 to regress cervical HSIL (high-grade squamous intraepithelial lesions), a direct precursor to cervical cancer, and to eliminate the HPV infection that causes these lesions. The REVEAL studies are prospective, randomized (2:1), double-blind, placebo-controlled trials evaluating adult women with HPV 16/18 positive biopsy-proven cervical HSIL, otherwise known as cervical intraepithelial neoplasia (CIN) 2 or 3.

The primary endpoint is regression of cervical HSIL AND virologic clearance of HPV-16 and/or HPV-18 in the cervix. The studies will evaluate cervical tissue changes at approximately 9 months after beginning a three dose regimen of VGX-3100 administered at

months 0, 1, and 3. Secondary endpoints include safety; tolerability; regression of CIN 2/3 to CIN 1 or normal; virologic clearance of HPV; efficacy measured by non-progression to cancer; and clearance of HPV from non-cervical anatomic locations. For more information on these studies, please visit **clinicaltrials.gov** (search identifier NCT03185013 and NCT03721978 for REVEAL 1 and REVEAL 2, respectively).

Inovio previously reported that VGX-3100 eliminated high grade dysplasia in almost 50% of women in its Phase 2b randomized, placebo-controlled trial. In 80% of the women whose high grade dysplasia was eliminated, the HPV infection was also cleared by VGX-3100. Further data analysis revealed that the combination of HPV detection and cervical cytology (Pap smear) following dosing was predictive for both elimination of the high grade dysplasia and clearance of HPV.

In addition to advancing its HPV program trial enrollment, Inovio continues to pursue research into biomarkers with the intent of attaining the ability to predict clinical response to VGX-3100 that may ultimately aid in patient selection and physician guidance of patient care. These pre-treatment biomarkers could identify patients most likely to respond to treatment with VGX-3100, increasing absolute efficacy of the product.

About VGX-3100

VGX-3100 is a DNA-based immunotherapy under investigation for the treatment of HPV-16 and HPV-18 infection and pre-cancerous lesions of the cervix (Phase 3) and vulva and anus (Phase 2). VGX-3100 has the potential to be the first approved treatment for HPV infection of the cervix and the first non-surgical treatment for pre-cancerous cervical lesions. VGX-3100 works by stimulating a specific immune response to HPV-16 and HPV-18, which targets the infection and causes destruction of pre-cancerous cells. In a randomized, double-blind, placebo-controlled Phase 2b study in 167 adult women with histologically documented HPV 16/18 cervical HSIL (CIN2/3), treatment with VGX-3100 resulted in a statistically significantly greater decrease in cervical HSIL and clearance of HPV infection vs. placebo. The most common side effect was injection site pain, and no serious adverse events were reported. VGX-3100 utilizes the patient's own immune system to clear HPV-16 and HPV-18 infection and pre-cancerous lesions without the increased risks associated with surgery, such as loss of reproductive health and negative psychosocial impacts.

About Inovio Pharmaceuticals, Inc.

Inovio is a late-stage biotechnology company focused on the discovery, development, and commercialization of DNA-based immunotherapies and vaccines that transform the treatment and prevention of cancer and infectious disease. Inovio's proprietary technology platform applies next-generation antigen sequencing and DNA 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 precancer. 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 MedImmune, Regeneron, Roche/Genentech, ApolloBio Corporation, The Bill and

Melinda Gates Foundation, The Wistar Institute, the University of Pennsylvania, Parker Institute for Cancer Immunotherapy, CEPI, DARPA, GeneOne Life Science, Plumbline Life Sciences, Drexel University, NIH, HIV Vaccines Trial Network, National Cancer Institute, U.S. Military HIV Research Program, and Laval University. 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 electroporation-based drug and gene delivery technologies and DNA vaccines, 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 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, 2017, our Quarterly Report on Form 10-Q for the quarter ended September 30, 2018 and other regulatory filings we make from time to time. 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 licensed 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.

CONTACTS:

Investors: Ben Matone, 484-362-0076, **ben.matone@inovio.com**

Media: Jeff Richardson, 267-440-4211, **jrichardson@inovio.com**

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