



NEWS RELEASE

Inovio and QIAGEN Establish Collaboration to Develop Diagnostic Test for VGX-3100, Inovio's Novel Immunotherapy Targeting Advanced Cervical Pre-Cancer

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Liquid biopsy-based Precision Medicine test to guide patient selection for Inovio's VGX-3100

PLYMOUTH MEETING, Pa. and GERMANTOWN, Md. and HILDEN, Germany, May 16, 2019 /PRNewswire/ -- Inovio Pharmaceuticals Inc. (NASDAQ: INO) and QIAGEN N.V. (NYSE: QGEN; Frankfurt Prime Standard: QIA) today announced a collaboration to co-develop a diagnostic test to identify patients most likely to respond to VGX-3100, Inovio's immunotherapy to treat advanced cervical dysplasia associated with the human papillomavirus virus (HPV). This precision medicine partnership focuses on Inovio's VGX-3100, a late-stage product candidate currently in two pivotal Phase 3 clinical trials (REVEAL 1 and 2) with potential to become the first treatment for HPV infection of the cervix and the first non-surgical treatment for precancerous cervical lesions associated with the virus. Financial arrangements were not disclosed.

Dr. J. Joseph Kim, Inovio's President & CEO, said, "As we advance our Synthetic Nucleics platform we are always looking for ways to drive innovation within our own technology or via a creative partner like QIAGEN. QIAGEN is bringing their extensive track record of commercially developing and marketing novel diagnostic tests to this important collaboration. Inovio is developing VGX-3100 as a non-surgical treatment for women with cervical pre-cancer and pre-treatment biomarkers we have discovered could provide a targeted way to identify patients most likely to respond to treatment with VGX-3100, increasing absolute efficacy of the product."

"We are pleased to support Inovio by developing a liquid biopsy-based companion diagnostic to identify patients who would benefit from VGX-3100, which has potential to make a dramatic difference in the detection of HPV infections and treatment of precancerous disease. Our Sample to Insight workflows and experience in developing diagnostic solutions for Precision Medicine in immuno-oncology are well-suited to help Inovio address this large unmet medical need," said Peer M. Schatz, Chief Executive Officer of QIAGEN. "Our team has deep experience in HPV-related molecular testing and cervical cancer and is looking forward to applying this expertise in partnership with Inovio. This project is also a case study of a collaboration that started in the discovery phase, when Inovio selected QIAGEN Genomic Services to work on the discovery of novel biomarkers that now contribute to the power of this unique molecular assay. The project progressed into development and Inovio now aims to make regulatory submissions for VGX-

3100 in 2021.”

HPV is the most common viral infection of the reproductive tract and the major cause of cervical cancer, the fourth most common cancer among women. The World Health Organization (WHO) reported an estimated 570,000 new cases of cervical cancer and 311,000 deaths in 2018. Almost 300 million women globally are estimated to be infected with HPV, and about 30 million additional cases have progressed to the precancerous stage. The high-risk HPV 16 and HPV 18 genotypes are estimated to cause at least 70% of cervical cancers.

Inovio's VGX-3100 is a novel immunotherapy under clinical investigation for the treatment of infection with HPV 16 and HPV 18 and advanced cervical dysplasia (Phase 3), and the vulva and anus (Phase 2). VGX-3100 propels the patient's own immune system to clear the HPV 16 and HPV 18 infections and precancerous lesions without the increased risks associated with surgery.

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.

About QIAGEN

QIAGEN N.V., a Netherlands-based holding company, is the leading global provider of Sample to Insight solutions that enable customers to gain valuable molecular insights from samples containing the building blocks of life. Our sample technologies isolate and process DNA, RNA and proteins from blood, tissue and other materials. Assay technologies make these biomolecules visible and ready for analysis. Bioinformatics software and knowledge bases interpret data to report relevant, actionable insights. Automation solutions tie these together in seamless and cost-effective workflows. QIAGEN provides solutions to more than 500,000 customers around the world in Molecular Diagnostics (human healthcare), Applied Testing (primarily forensics), Pharma (pharma and biotech companies) and Academia (life sciences research). As of March 31, 2019, QIAGEN employed approximately 5,100 people in over 35 locations worldwide.

Inovio Forward-Looking Statement:

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, 2018, our Quarterly Report on Form 10-Q for the quarter ended March 31, 2019, 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.

QIAGEN Forward-Looking Statement:

Certain statements contained in this press release may be considered forward-looking statements within the meaning of Section 27A of the U.S. Securities Act of 1933, as amended, and Section 21E of the U.S. Securities Exchange Act of 1934, as amended. To the extent that any of the statements contained herein relating to QIAGEN's products, launches, regulatory submissions, collaborations, markets, strategy, taxes or operating results, including without limitation its expected sales, adjusted net sales and adjusted diluted earnings per share results, are forward-looking, such statements are based on current expectations and assumptions that involve a number of uncertainties and risks. Such uncertainties and risks include, but are not limited to, risks associated with management of growth and international operations (including the effects of currency fluctuations, regulatory processes and dependence on logistics); variability of operating results and allocations between customer classes; the commercial development of markets for our products to customers in academia, pharma, applied testing and molecular diagnostics; changing relationships with customers, suppliers and strategic partners; competition; rapid or unexpected changes in technologies; fluctuations in demand for QIAGEN's products (including fluctuations due to general economic conditions, the level and timing of customers' funding, budgets and other factors); our ability to obtain regulatory approval of our products; difficulties in successfully adapting QIAGEN's products to integrated solutions and producing such products; the ability of QIAGEN to identify and develop new products and to differentiate

and protect our products from competitors' products; market acceptance of QIAGEN's new products and the integration of acquired technologies and businesses; and the other factors discussed under the heading "Risk Factors" contained in Item 3 of our most recent Annual Report on Form 20-F. For further information, please refer to the discussions in reports that QIAGEN has filed with, or furnished to, the U.S. Securities and Exchange Commission (SEC).

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