Inovio expands into prostrate cancer – taking immunotherapy to the next level

Inovio Pharmaceuticals. {NASDAQ: INO} today announced they are "taking immunotherapy to the next level" by initiating a phase 1 trial for men with relapsed prostrate cancer.

This follows the success of trials using INO-5150 on non human primates.

PLYMOUTH MEETING, Pa., July 27, 2015 – **Inovio Pharmaceuticals. {NASDAQ: INO}** announced today that it has initiated a phase I trial to evaluate Inovio's DNA immunotherapy in men with biochemically relapsed prostate cancer.

The launch of this human trial follows strong pre-clinical results revealing that INO-5150 generated robust $CD8^+$ T cell responses in animal studies including non-human primates. The immune responses generated by INO-5150 were similar in character to immune responses generated by VGX-3100, Inovio's immunotherapy for human papillomavirus (HPV) that regressed pre-cancerous cervical lesions and eliminated HPV in a randomized, placebo-controlled phase II trial.

INO-5150 is a novel SynCon® immunotherapy for prostate cancer targeting two antigens, prostate specific antigen (PSA) and prostate specific membrane antigen (PSMA), present in the majority of prostate cancer cells. This phase I study will evaluate the safety, tolerability, and immunogenicity of

INO-5150 alone or in combination with INO-9012, Inovio's DNA-based IL-12 immune activator. The multi-centered study will also evaluate changes in PSA levels, an important biomarker in prostate cancer.

INO-5150 was generated using Inovio's proprietary SynCon® process to enable significant production of PSA and PSMA antigens with genetic sequences differentiated from native human PSA and PSMA sequences. This patented approach is designed to help the body's immune system overcome its "self-tolerance" to prostate cancer cells and mount a strong targeted $CD8^+$ killer T cell response to eliminate the cancerous cells displaying these antigens.

Dr. J. Joseph Kim, President and CEO, said, "*Inovio is focused on taking immunotherapy to the next level. Inovio is the only immunotherapy company that is generating T cells, in vivo, in high quantity that are fully functional whose killing capacity correlates with relevant clinical outcomes. With positive results from our phase II study of VGX-3100, Inovio's active immunotherapy technology is a promising approach to treat various solid tumors by targeting the most important antigens for a particular tumor. Today's launch of our SynCon® prostate cancer immunotherapy builds on Inovio's current trials for several difficult-to-treat cancers including head and neck, cervical, breast, lung, and pancreatic cancer*."

About Prostate Cancer

Prostate cancer is the second most frequently diagnosed cancer in men. Nearly three-quarters of the registered cases occur in developed countries. Accounting for nearly 300,000 deaths each

year, prostate cancer is the sixth leading cause of death from cancer in men. The development of a new treatment for prostate cancer would be a significant medical advance given that present treatment options (surgery, radiation and hormone deprivation), while somewhat effective, all carry deleterious side effects and are often not a long-term cure.

About Inovio Pharmaceuticals, Inc.

Inovio is revolutionizing the fight against cancer and infectious diseases. Our immunotherapies uniquely activate best-in-class immune responses to prevent and treat disease, and have shown clinically significant efficacy with a favorable safety profile. With an expanding portfolio of immune therapies, the company is advancing a growing preclinical and clinical stage product pipeline. Partners and collaborators include Roche, MedImmune, University of Pennsylvania, EORTC, DARPA, Gene One Life Science, Drexel University, NIH, HIV Vaccines Trial Network, National Cancer Institute, U.S. Military HIV Research Program, and University of Manitoba.

For more information: **www.inovio.com.**

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 and our capital resources. 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 (including, but not limited to, the fact

that pre-clinical and clinical results referenced in this release may not be indicative of results achievable in other trials or for other indications, that the studies or trials may not be successful or achieve the results desired, including safety and efficacy for VGX-3100, that pre-clinical studies and clinical trials may not commence or be completed in the time periods anticipated, that results from one study may not necessarily be reflected or supported by the results of other similar studies and that results from an animal study may not be indicative of results achievable in human studies), 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 broad pipeline of SynCon® active immune therapy and vaccine products, our ability to advance our portfolio of immune-oncology products independently, including INO-5150, and to commence a phase I clinical trial for INO-5150 in the first half of 2015, the adequacy of our capital resources, the availability or potential availability of alternative therapies or treatments for the conditions targeted by the company or its collaborators, including alternatives that may be more efficacious or cost-effective than any therapy or treatment that the company and its collaborators hope to develop, our ability to enter into partnerships in conjunction with our research and development programs, evaluation of potential opportunities, issues involving product liability, issues involving patents and whether they or licenses to them will provide the company 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 the company can finance or devote other significant resources that may be necessary to prosecute, protect or defend them, the level of corporate expenditures, assessments of the company's 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, 2014, our Form 10-Q for the quarter ended March 31, 2015, and other regulatory filings from time to time. There can be no assurance that any product in Inovio's pipeline will be successfully developed or manufactured, that final results of clinical studies 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.

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