

Advantagene Announces the Publication of Preclinical Study Supporting a Combination Immune Therapy Approach for the Treatment of Glioblastoma

AUBURNDALE, MA January 22, 2018 Advantagene, Inc., a clinical-stage biotechnology company developing a novel cancer immunotherapy platform for the treatment of solid tumors, today announced the publication of a GMCI™-checkpoint inhibitor combination study in the February issue of the journal *Neuro-Oncology* and can be accessed at the following link:

<https://academic.oup.com/neuro-oncology/article/20/2/225/4004892?guestAccessKey=d0fe1c17-51aa-4d76-9078-fa32fcbfa0d0> .

The study, “Preclinical Investigation of Gene-Mediated Cytotoxic Immunotherapy and Checkpoint Blockade in Glioblastoma,” provides evidence supporting the combination of two immuno-oncology agents in the treatment of glioblastoma, an aggressive form of brain tumor. The key finding from the study is that when Advantagene’s Gene Mediated Cytotoxic Immunotherapy (GMCI™) was combined with a PD-1 checkpoint inhibitor a significantly higher proportion of “long term survivors” were observed than in groups that received either treatment alone. Furthermore, mice that had been previously cleared of tumor by either GMCI alone or the combination of the products were protected when challenged with the same tumor, indicating that a persistent memory immune response was generated against the tumor.

The study was performed in collaboration with the laboratories of Drs. Sean Lawler, Ph.D., and E. Antonio Chiocca, M.D., Ph.D., at Brigham and Women’s Hospital and Harvard Medical School. “This study strongly supports the mechanistic rationale for this combination in the treatment of glioblastoma with GMCI as an immune stimulant and a PD-1 checkpoint inhibitor administered to prevent immune suppression by the tumor” stated Dr. Lawler.

A Phase 2 clinical study examining GMCI alone in first line-malignant glioma patients in combination with standard of care surgery, radiation, and temozolomide, published in 2016, showed a significant overall survival benefit. Dr. Chiocca, Chair of Neurosurgery at Brigham and Women’s Hospital said “Glioblastoma is a disease in dire need of effective treatments. The results from this preclinical study, when taken with the existing positive clinical data, strongly support evaluation of the combination of GMCI with a PD-1 checkpoint inhibitor in glioblastoma patients.”

About Advantagene, Inc.

Advantagene is a Massachusetts based biotechnology company developing its proprietary Gene Mediated Cytotoxic Immunotherapy (GMCI™) platform technology for the treatment of solid tumors. GMCI™ is an “off the shelf” low toxicity immunotherapy that stimulates a patient’s own immune system to generate a robust response against his or her cancer, causing tumor cell death and clearance. Pre-clinical and clinical evidence strongly suggests that this immunotherapy approach synergizes with chemotherapy and surgery and produces remarkable results, including complete tumor eradication. Given these results, the company hypothesizes

that tumor micro-environment disrupting immunotherapy in the form of GMCI™ will be a safe and efficacious approach to the treatment of patients with malignant glioma, including glioblastoma multiforme.

Advantagene is also conducting a registration clinical trial with its clinical GMCI™ candidate, ProstAtak®, for the treatment of newly diagnosed prostate cancer patients under a Special Protocol Assessment approved by the U.S. Food and Drug Administration. If proven efficacious, ProstAtak® will be the first and only therapeutic pharmaceutical available for newly diagnosed prostate cancer patients. The company is conducting additional GMCI™ clinical studies in pancreas, lung and brain cancers with impressive clinical results to date. For more information about Advantagene and its GMCI™ cancer immunotherapy program, please visit www.advantagene.com

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