Replimune Announces First Patients Dosed In A Phase 1/2 Clinical Trial Of Its RP1 Oncolytic Immunotherapy In Patients With Advanced Solid Tumors

November 14, 2017

Study to evaluate safety and efficacy as monotherapy and in combination with anti-PD-1 checkpoint blockade

Woburn, MA, November 14, 2017 – Replimune Group Inc., a biotechnology company developing next generation oncolytic immunotherapies, announced today that the first cohort of patients has been dosed in a phase 1/2 clinical trial of RP1 in patients with advanced solid tumors. RP1 is the first product candidate generated from the Company's Immulytic™ platform, designed to maximize systemic anti-tumor immune activation.

"RP1 combines multiple compelling mechanisms of action into one therapeutic agent," said Howard Kaufman, M.D., chief medical officer of Replimune. "We are enthusiastic about the potential for RP1 to activate both innate and adaptive immunity to induce a potent and broad based anti-tumor immune response directly in situ in the patient, an approach which is expected to be highly synergistic with immune checkpoint blockade."

The Phase 1/2 clinical trial is designed in two parts to assess the safety, tolerability and preliminary efficacy of RP1 alone and in combination with anti-PD1 therapy. The first part of the study, being conducted in patients with advanced solid tumors, will assess the safety of RP1 and determine the optimal dose for use in the second part of the study. Part 2 of the study will further evaluate safety and also assess the preliminary efficacy of RP1 administered in combination with anti-PD1 therapy in cohorts of patients with specific solid tumor types.

"The initiation of this first clinical trial with RP1 marks a major milestone for Replimune," said Robert Coffin, Ph.D., co-founder & CEO of Replimune. "We believe that RP1 and follow on therapies from our Immulytic™ platform have the potential to become a differentiated and foundational cornerstone of combination cancer immunotherapy."
Replimune's Immulytic™ platform is designed to maximize systemic anti-tumor immune activation, in particular to tumor neo-antigens, through robust viral mediated immunogenic tumor cell killing and the delivery of optimal combinations of immune activating proteins directly to tumors. In addition to direct tumor destruction, RP1 is intended to induce an anti-tumor immune response that is unique to the individual patient's tumor, offering the benefits of a personalized therapy but using an off-the-shelf, practical approach.

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About RP1 & Replimune's Pipeline
RP1 is Replimune's first Immulytic™ product to enter the clinic, and is based on a proprietary new strain of herpes simplex virus engineered for tumor selectivity and enhanced systemic potency, including through the expression of a potent fusogenic glycoprotein. This is intended to greatly increase tumor killing potency, result in highly immunogenic cell death, and to be highly synergistic with immune checkpoint blockade. Follow on products (RP2 & RP3), one of which is intended to enter clinical development in 2018, further express an anti-CTLA-4 antibody-like molecule and/or optimized immune co-stimulatory pathway activating ligands.

Immulytic™ products are intended to be administered by direct injection into solid tumors, including through imaging guidance for deeper tumors using approaches similar to those used to take biopsies. This maximizes virus mediated cell death, which is required for the optimal activation of systemic immunity. In addition, direct injection provides the most efficient delivery of virus encoded immune activating proteins into the tumor, limiting systemic exposure and reducing potential toxicities. The alternative of intravenous dosing increases dilution in the blood, decreasing efficacy and rendering anything other than very short-term dosing futile due to the rapid induction of antiviral immune responses.

About Oncolytic Immunotherapy
Oncolytic immunotherapy is an emerging class of cancer therapy which exploits the ability of viruses to selectively replicate in and kill tumors, while at the same time inducing a potent, patient-specific, anti-tumor immune response. Oncolytic viruses have the unique ability to generate an autologous vaccine to the patient's particular complement of tumor antigens, including neo-antigens, in situ in the patient with a truly off-the-shelf approach. While clear single agent clinical activity has been achieved with oncolytic immunotherapy, particular synergy may be observed in combination with immune checkpoint blockade and other immune-modulatory approaches.

About Replimune
Replimune Group Inc, headquartered in Woburn, MA, was founded in March 2015 to develop the next generation of 'oncolytic immunotherapies' for the treatment of cancer. Replimune is developing novel, proprietary products intended to improve both the direct anti-tumor effects of selective virus replication and the potency of the immune response to the tumor antigens released. The Company's Immulytic™ platform is designed to maximize systemic immune activation, in particular to tumor neoantigens, through robust viral mediated immunogenic tumor cell killing and the delivery of optimal combinations of immune activating proteins to the

tumor and draining lymph nodes. The approach is expected to be highly synergistic with immune checkpoint blockade and other approaches to cancer treatment. Replimune intends to progress these therapies rapidly through clinical development and to combine with other immuno-oncology products with complementary mechanisms of action at an early stage. For more information, please visit http://www.replimune.com.

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