Replimune Provides 2021 Year End Review and Overview of Expected 2022 Milestones

January 10, 2022

CERPASS clinical trial with RP1 in CSCC on track to complete enrollment mid-year with the primary analysis trigger six months thereafter

IGNYTE anti-PD1 failed melanoma, evaluating RP1 in combination with Opdivo® on track to release interim data in late 2022

Phase 2 development plan for RP2/3 to be presented in the first quarter of 2022

Replimune to provide corporate update at the 40th Annual J.P. Morgan Healthcare Conference on January 10, 2022

WOBURN, Mass., Jan. 10, 2022 (GLOBE NEWSWIRE) -- Replimune Group, Inc. (Nasdaq: REPL), a clinical stage biotechnology company pioneering the development of a novel class of tumor-directed oncolytic immunotherapies, today provided a corporate update, highlighting the progress of key programs.

“Data with RP1 in various high-value skin cancer indications has continued to mature in 2021,” said Philip Astley-Sparke, Chief Executive Officer of Replimune. “We have been thrilled to see the clear trends in safety and efficacy persist, with durability data that suggests RP1 has the profile to provide many patients with transformative long-term benefit. With our objective of establishing a broad skin cancer franchise with RP1, which has progressed to commercial planning, we have begun to validate the potential of our RP2 and RP3 oncolytic immunotherapies beyond skin cancers, including in tumor types that commonly metastasize to the liver. Replimune continues to build towards an exciting, data rich 2022, beginning later this quarter with a number of clinical updates, and visibility into the RP2/RP3 Phase 2 clinical development strategy.”

Anticipated Key Milestones for 2022

CERPASS – Registration-directed Phase 2 clinical trial in cutaneous squamous cell carcinoma (CSCC)

- **RP1 in combination with Libtayo® (cemiplimab-rwlc) in CSCC:** The Company is actively enrolling patients in a registration-directed, global, randomized, controlled, 180-patient Phase 2 clinical trial (CERPASS) evaluating RP1 in combination with Libtayo vs. Libtayo alone in patients with advanced CSCC. The Company expects to complete enrollment such that the trigger for the primary data analysis is expected in late 2022.

IGNYTE – Multi-cohort Phase 2 clinical trial of RP1 combined with Opdivo® (nivolumab)

- **Anti-PD-1 failed melanoma cohort:** The Company continues to enroll patients in the 125-patient cohort of the IGNYTE Phase 2 clinical trial in patients with anti-PD1 failed melanoma. The company expects to release interim data from this cohort in late 2022.

- **Non-melanoma skin cancer (NMSC) cohort:** The Company has completed enrollment of 30-patients with anti-PD-1 naïve NMSC and continues to enroll patients with anti-PD-1 failed NMSC. The Company remains on track to provide updated data from the anti-PD1 naïve patients and initial data from the anti-PD-1 failed patients in the first quarter of 2022.

- **Anti-PD(L)-1 failed non-small cell lung cancer (NSCLC) cohort:** Enrollment is open in a 30-patient cohort of RP1 in combination with Opdivo in anti-PD(L)-1 failed NSCLC patients, with initial data is expected to be released in late 2022.

ARTACUS – Phase 1b/2 clinical trial of RP1 as monotherapy in solid organ transplant recipients with CSCC

- Enrollment continues in this 65-patient clinical trial with potential registrational intent, assessing the safety and efficacy of RP1 in organ transplant recipients with skin cancer. The Company remains on track to present initial data from this clinical trial in the first quarter of 2022.

RP2 and RP3

- **RP2 alone and in combination with Opdivo in difficult-to-treat cancers:** The Company presented Phase 1 clinical data demonstrating deep and durable responses in difficult-to-treat cancers both as monotherapy and in combination with Opdivo in November 2021. The Company also initiated its expansion of the Phase 1 clinical trial of RP2 in combination with Opdivo, with a focus on patients with liver metastases from various prevalent tumor types including patients with lung,

breast and gastrointestinal cancers. The company expects to present initial data from the expansion patients in late 2022.

- **RP3 alone and in combination with Opdivo:** The Company is enrolling patients in a Phase 1 clinical trial for RP3, with initial data expected to be presented in the first quarter of 2022. The Company expects to start enrolling patients to be treated with RP3 in combination with Opdivo early in 2022, including patients with liver metastases from various prevalent tumor types such as lung, breast, head and neck cancer and gastrointestinal cancers. The company expects to present initial data from the expansion patients in late 2022.

- **RP2 and/or RP3 next stage development including in patients with liver metastases from a range of tumor types:** The Company remains on track to initiate a broad clinical development program with RP2 and/or RP3, intended to include a range of prevalent tumor types, including in patients with liver metastases, around mid-year 2022. Details of this plan remain on track to be presented in the first quarter of 2022.

J.P. Morgan Conference Presentation and Webcast

As previously announced, the Company will be present at the virtual meeting of the 40th Annual J.P. Morgan Healthcare Conference on Monday, Jan. 10 at 7:30 a.m. PT. A simultaneous webcast of the presentation will be available in the Investors section of Replimune's website at www.replimune.com. A replay will be available for 30 days following the conference.

About CERPASS

CERPASS is Replimune's registration-directed randomized, global Phase 2 clinical study to compare the effects of Libtayo ® alone versus a combination of Libtayo and Replimune's investigational oncolytic immunotherapy RP1. The clinical trial is enrolling 180 patients with locally advanced or metastatic cutaneous squamous cell carcinoma (CSCC) who are naïve to anti-PD-1 therapy. The clinical trial will evaluate complete response (CR) rate and overall response rate (ORR) as its two primary efficacy endpoints as assessed by independent review, as well as duration of response, progression-free survival (PFS), and overall survival (OS) as secondary endpoints. The study is being conducted under a clinical trial collaboration agreement with Regeneron in which the costs of the trial are shared and full commercial rights retained by Replimune. Libtayo is being jointly developed by Regeneron and Sanofi.
Libtayo is a registered trademark of Regeneron.

About IGNYTE

IGNYTE is Replimune's multi-cohort Phase 1/2 trial of RP1 plus Opdivo®. There are 4 tumor specific cohorts currently enrolling in this clinical trial including a 125-patient cohort in anti-PD-1 failed cutaneous melanoma. This cohort was initiated after completing enrollment in a prior Phase 2 cohort in the same clinical trial of approximately 30 patients with melanoma. The additional cohorts are in non-melanoma skin cancers which includes both naïve and anti-PD-1 failed CSCC, in anti-PD1 failed microsatellite instability high, or MSI-H/dMMR tumors and anti-PD(L)-1 failed non-small cell lung cancer, or NSCLC. This trial is being conducted under a collaboration and supply agreement with Bristol-Myers Squibb Company. Opdivo is a registered trademark of Bristol-Myers Squibb Company.

About RP1

RP1 is Replimune's lead product candidate and is based on a proprietary new strain of herpes simplex virus engineered and genetically armed to maximize tumor killing potency, the immunogenicity of tumor cell death, and the activation of a systemic anti-tumor immune response.

About RP2 & RP3

RP2 and RP3 are derivatives of RP1 that express additional immune-activating proteins. RP2 expresses an anti-CTLA-4 antibody-like molecule and RP3 additionally expresses the immune co-stimulatory pathway activating proteins CD40L and 4-1BBL. RP2 and RP3 are intended to provide targeted and potent delivery of these proteins to the sites of immune response initiation in the tumor and draining lymph nodes, with the goal of focusing systemic immune-based efficacy on tumors and limiting off-target toxicity.

About Replimune

Replimune Group, Inc., headquartered in Woburn, MA, was founded in 2015 with the mission to transform cancer treatment by pioneering the development of novel tumor-directed oncolytic immunotherapies. Replimune's proprietary RPx platform is based on a potent HSV-1 backbone with payloads added to maximize immunogenic cell death and the induction of a systemic anti-tumor immune response. The RPx platform has a unique dual local and systemic mechanism of action (MOA) consisting of direct selective virus-mediated killing of the tumor resulting in the release of tumor derived antigens and altering of the tumor microenvironment (TME) to ignite a strong and durable systemic response. This MOA is expected to be synergistic with most established and experimental cancer treatment modalities, and, with an attractive safety profile the RPx platform has the versatility to be developed alone or combined with a variety of other treatment options. For more information, please visit www.replimune.com.

Forward Looking Statements

This press release contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including statements regarding our expectations about the design and advancement of our clinical trials, the timing and sufficiency of our clinical trial outcomes to support potential approval of any of our product candidates, our goals to develop and commercialize our product candidates, patient enrollments in our existing and planned clinical trials and the timing thereof, the potential impact of the global coronavirus pandemic and the global economy on our operations and milestones, and other statements identified by words such as "could," "expects," "intends," "may," "plans," "potential," "should," "will," "would," or similar expressions and the negatives of those terms. Forward-looking statements are not promises or guarantees of future performance, and are subject to a variety of risks and uncertainties, many of which are beyond our control, and which could cause actual results to differ materially from those contemplated in such forward-looking statements. These factors include risks related to our limited operating history, our ability to generate positive clinical trial results for our product candidates, the costs and timing of operating our in-house manufacturing facility, the timing and scope of regulatory approvals, changes in laws and regulations to which we are subject, competitive pressures, our ability to identify additional product candidates, political and global macro factors including the impact of the coronavirus as a global pandemic and related public health issues, and other risks as may be detailed from time to time in our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q and other reports we file with the Securities and Exchange Commission. Our actual results could differ

materially from the results described in or implied by such forward-looking statements. Forward-looking statements speak only as of the date hereof, and, except as required by law, we undertake no obligation to update or revise these forward-looking statements.

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