FOR IMMEDIATE RELEASE

Compugen Announces First Patient Dosed with COM701, a First-in-Class Cancer Immunotherapy Antibody, in Phase 1 Clinical Trial

Phase 1 study will assess COM701 both as a single agent and in combination with an anti-PD-1 antibody in patients with advanced solid tumors

HOLON, ISRAEL – September 7, 2018 – Compugen Ltd. (Nasdaq: CGEN), a clinical-stage cancer immunotherapy company and a leader in predictive target discovery, today announced that the first patient has been dosed in its Phase 1 clinical trial of COM701, a first-in-class cancer immunotherapy antibody targeting PVRIG. PVRIG is a novel immune checkpoint identified by Compugen using its computational discovery capabilities.

"Dosing the first patient with COM701, a first-in-class drug opportunity targeting a novel immune checkpoint we identified with our computational predictive platform, is a landmark event for us. We look forward to clinically testing it," stated Anat Cohen-Dayag, Ph.D., Compugen's President and CEO. "It also serves as a proof of concept for our discovery capabilities and marks Compugen as a leader in the field of computational discovery. We will continue leveraging this core competency in expanding our therapeutic pipeline and achieving our corporate and business goals."

Drew W. Rasco, M.D., Associate Director of Clinical Research at the START Center for Cancer Care and a Principal Investigator in the Phase 1 COM701 study, said, "Immunotherapy has revolutionized the landscape for oncology treatments by providing a new treatment option leading to lasting benefits for patients. Yet, response rates vary greatly across different cancer indications, leaving a significant unmet medical need for many patients and a continuing challenge to discover new biological pathways that can result in the development of new cancer immunotherapies for non-responsive and refractory patients. COM701 preclinical data suggest that the newly-discovered PVRIG pathway may be a dominant pathway in certain cancer subpopulations, including those that are unresponsive to PD-1 or PDL-1 inhibitors. As such, it is important to evaluate COM701 in clinical trials with these patient populations who have exhausted available standard therapy."

Henry Adewoye, M.D., Chief Medical Officer of Compugen, said, “COM701 is a promising and differentiated asset in the crowded landscape of immuno-oncology trials. Our clinical and biomarker strategy for testing COM701 is premised on a robust biological rationale which suggests that targeting PVRIG may be necessary to induce a sufficient anti-tumor immune response in cancer patient subpopulations where both the PVRIG and TIGIT pathways are operative, thereby addressing the high unmet need of relapsed and refractory disease following treatment with existing immunotherapies. We look forward to exploring the full clinical potential of COM701.”

This Phase 1 open-label clinical trial is designed to assess the safety and tolerability of administering escalating doses of COM701 monotherapy as well as combination administration with a PD-1 inhibitor in patients with advanced solid tumors. Additionally, the trial will evaluate evidence of preliminary antitumor activity of COM701 as a monotherapy as well as in combination with a PD-1 inhibitor in patients with selected tumor types, including non-small cell lung cancer, ovarian cancer, breast cancer and endometrial cancer. The study will be conducted in multiple leading oncology clinical centers in the United States, which are expected to enroll approximately 140 patients. Additional information will be available shortly at www.clinicaltrials.gov.

About COM701

COM701 is a humanized hybridoma antibody that binds with high affinity to PVRIG, a novel B7/CD28-like immune checkpoint target candidate discovered by Compugen, blocking its interaction with its ligand, PVRL2. Blockade of PVRIG by COM701 has demonstrated potent, reproducible enhancement of T cell activation, consistent with the desired mechanism of action of activating T cells in the tumor microenvironment to generate anti-tumor immune responses. In addition, COM701 combined with antagonist anti-PD-1 antibodies has demonstrated synergistic effects on human T cell stimulation, indicating the potential of these combinations to further enhance immune response against tumors.

Preclinical data for COM701 suggest that PVRIG may be a dominant checkpoint in diverse patient populations with tumors that express elevated PVRL2 as compared to expression of the TIGIT ligand PVR. This include patients with breast, endometrial, and ovarian cancers. In addition, expression studies show that PVRIG and TIGIT, and their respective ligands, are expressed in a broad variety of tumor types, such as those noted above, as well as lung, kidney, and head & neck cancers. In these tumors the blockade of both TIGIT and PVRIG may be required to sufficiently stimulate an anti-tumor immune response, with or without additional PD-1 pathway blockade.

About Compugen

Compugen is a therapeutic discovery and development company utilizing its broadly applicable predictive discovery infrastructure to identify novel drug targets and develop first-in-class therapeutics in the field of cancer immunotherapy. The Company's therapeutic pipeline consists of immuno-oncology programs against novel drug targets it has discovered, including T cell immune checkpoints and myeloid target programs. Compugen's business model is to selectively enter into collaborations for its novel targets and related drug product candidates at various stages of research and development. The Company is headquartered in Israel with R&D facilities in both Israel and South San Francisco, CA. Compugen's ordinary shares are listed on Nasdaq and the Tel Aviv Stock Exchange under the ticker symbol CGEN. For additional information, please visit Compugen's corporate website at www.cgen.com.

Forward-Looking Statement

This press release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by the use of terminology such as "will," "may," "expects," "anticipates," "believes," "potential," "plan," "goal," "estimate," "likely," "should," "confident," and "intends," and describe opinions about possible future events. These forward-looking statements involve known and unknown risks and uncertainties that may cause the actual results, performance or achievements of Compugen to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Among these risks: Compugen's business model is substantially dependent on entering into collaboration agreements with third parties and Compugen may not be successful in generating adequate revenues or commercializing aspects of its business model. Moreover, the development and commercialization of therapeutic candidates involve many inherent risks, including failure to progress to clinical trials or, if they progress to or enter clinical trials, failure to receive regulatory approval. These and other factors, including the ability to finance the Company, are more fully discussed in the "Risk Factors" section of Compugen's most recent Annual Report on Form 20-F as filed with the Securities and Exchange Commission (SEC) as well as other documents that may be subsequently filed by Compugen from time to time with the SEC. In addition, any forward-looking statements represent Compugen's views only as of the date of this release and should not be relied upon as representing its views as of any subsequent date. Compugen does not assume any obligation to update any forward-looking statements unless required by law.

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