FOR IMMEDIATE RELEASE

Compugen Doses First Patient in COM701/Opdivo® (nivolumab) Phase 1b Cohort Expansion Study

- Study builds upon signals of durable antitumor activity in extensively pretreated patients, including a confirmed complete response in the dose escalation arm

- Biomarker-informed strategy targets ovarian, breast, endometrial and colorectal cancers

HOLON, ISRAEL – June 30, 2021 – 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 the combination expansion cohort of its ongoing Phase 1 clinical trial evaluating COM701, Compugen's first-in-class anti-PVRIG antibody, in combination with Opdivo® (nivolumab). The indications for the combination therapy expansion cohort, ovarian, breast, endometrial and colorectal cancers were selected based on preclinical biomarker assessments.

"The data generated from the combination study of COM701 with Opdivo® (nivolumab) in the dose escalation setting are encouraging, including a confirmed complete response in one patient and durable anti-tumor activity observed beyond one year in multiple highly refractory patients," said Anat Cohen-Dayag, Ph.D., President and CEO of Compugen. "The activity observed strengthens our confidence that dual blockade of PVRIG and PD-1 may be key to driving antitumor immune responses in certain patient populations and we look forward to continued evaluation of this potentially promising regimen in the indications selected for the expansion cohort. The dosing of the first patient in the cohort expansion phase of this study follows expansion of our collaboration with Bristol Myers Squibb and speaks to our steady execution in the clinic. As the only company with clinical-stage candidates against both PVRIG and TIGIT, we believe that this study strengthens our first-mover advantage in evaluating the DNAM axis as a potential new foundational immunotherapy axis in cancer immunotherapy."

The Phase 1b combination cohort expansion study is part of the Phase 1 open-label clinical trial designed to assess the safety, tolerability and preliminary anti-tumor clinical activity of administering escalating doses of COM701 monotherapy, as well as in combination with Bristol-Myers Squibb's Opdivo® in patients with advanced solid tumors. The Phase 1b combination cohort expansion arm is currently recruiting patients in the United States. Additional information is available at www.clinicaltrials.gov (NCT03667716).

About COM701

COM701 is a humanized antibody that binds with high affinity to PVRIG, a novel immune checkpoint discovered computationally by Compugen, blocking the interaction with its ligand, PVRL2. Blockade of PVRIG by COM701 has demonstrated in preclinical studies 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. PVRIG and TIGIT, also discovered by Compugen's computational discovery platform in 2009, constitute parallel immune checkpoint pathways that counteract DNAM, a costimulatory molecule on T cells and NK cells. As such, preclinical data suggest that the inhibition of PVRIG together with TIGIT and/or PD-1 has the potential to further enhance anti-tumor immune response and improve patient outcomes in a broad variety of tumor types.

About Compugen

Compugen is a clinical-stage discovery and development company utilizing its broadly applicable, predictive computational discovery platforms to identify novel drug targets and develop therapeutics in the field of cancer immunotherapy. Compugen's lead product candidate, COM701, a first-in-class anti-PVRIG antibody, is undergoing a Phase 1 clinical study for the treatment of solid tumors. Compugen's second fully owned clinical candidate, COM902, an antibody targeting TIGIT, is in a Phase 1 clinical study. Compugen's therapeutic pipeline also includes early-stage immuno-oncology programs focused largely on myeloid targets. Compugen is headquartered in Israel, with offices in South San Francisco, CA. Compugen's 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 Securities Act of 1933 and the Securities Exchange Act of 1934, as amended, and the safe-harbor provisions of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements are based on the current beliefs, expectations and

assumptions of Compugen. 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 similar expressions that are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Forward-looking statements include, but are not limited to, statements regarding our observions that strengthens our confidence that dual blockade of PVRIG and PD-1 may be key to driving antitumor immune responses in certain patient populations. 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: the global COVID-19 pandemic may continue to negatively impact the global economy and may also adversely affect Compugen’s business; clinical development involves a lengthy and expensive process, with an uncertain outcome and Compugen may encounter substantial delays or even an inability to begin clinical trials for any specific product, or may not be able to conduct or complete its trials on the timelines it expects; Compugen relies and expects to continue to rely on third parties to conduct its clinical trials and these third parties may not successfully carry out their contractual duties, comply with regulatory requirements or meet expected deadlines, and Compugen may experience significant delays in the conduct of its clinical trials as well as significant increased expenditures; 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; Compugen’s approach to the discovery of therapeutic products is based on its proprietary computational target discovery infrastructure, which is unproven clinically; and Compugen does not know whether it will be able to discover and develop additional potential product candidates or products of commercial value. These risks and other risks 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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