FOR IMMEDIATE RELEASE

Compugen Expands Intellectual Property Portfolio for COM701 with New U.S. Patent Covering Combination Use with anti-PD-1 Antibody

Previously granted U.S. Patent protects combination of COM701 and COM902

HOLON, ISRAEL – July 16, 2019 – Compugen Ltd. (NASDAQ: CGEN), a clinical-stage cancer immunotherapy company and leader in predictive target discovery, announced today that the United States Patent and Trademark Office (USPTO) has granted a new patent covering method of use of COM701, a first-in-class therapeutic antibody targeting PVRIG, in combination with anti-PD-1 antibodies.

U.S. Patent No. 10,351,625, titled "Anti-PVRIG Antibodies and Methods of Use," augments a previously issued patent (U.S. Patent no. 9,714,289) by expanding and protecting the use of COM701 for activating T cells in cancer patients to include the combination of COM701 with any anti-PD-1 antibody. Activating T cells results in stimulating the immune system, and as such is the basis for cancer immunotherapy treatment.

In addition, a separate method of use patent titled "Anti-TIGIT antibodies, anti-PVRIG antibodies and combinations thereof," (U.S. Patent no. 10,124,061) which was granted in November 2018 includes claims covering the combination of COM701 and COM902, Compugen's anti-TIGIT antibody, for activating T cells in cancer patients.

U.S. Patent No. 10,351,625 is expected to expire no earlier than February 2036 in the United States.

About COM701

COM701 is a humanized antibody that binds with high affinity to PVRIG, a novel immune checkpoint target candidate discovered by Compugen, blocking the 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 an intersection of the PVRIG and PD-1 inhibitory pathways and the potential of these combinations to further enhance immune response against tumors.

PVRIG and TIGIT constitute parallel immune checkpoint pathways that counteract DNAM-1, a costimulatory molecule on T cells and NK cells. 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, 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.

COM701 is in Phase 1 clinical trials in patients with advanced solid tumors, to evaluate monotherapy and combination therapy with a PD-1 inhibitor.

About Compugen

Compugen is a clinical-stage, 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 facilities in 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 advance through clinical development or 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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