FOR IMMEDIATE RELEASE

Compugen Presents Preclinical Data for COM902 Anti-TIGIT Program at SITC 2019

Data support potential clinical use as a cancer immunotherapy treatment in various combinations with COM701 and PD-1 inhibitors

HOLON, ISRAEL – November 5, 2019 – Compugen Ltd. (Nasdaq: CGEN), a clinical-stage cancer immunotherapy company and a leader in predictive target discovery, today disclosed preclinical results from its COM902 anti-TIGIT program supporting its potential clinical use in various combinations with PD-1 inhibitors and COM701, a first-in-class PVRIG inhibitor. The findings will be presented in a poster titled "COM902, a Novel Therapeutic Antibody Targeting TIGIT Augments T Cell Function and the Activity of PVRIG Pathway Blockade In Vitro and In Vivo" at the 34th Annual Meeting of the Society for Immunotherapy of Cancer (SITC 2019) in National Harbor, Maryland, on Saturday, November 9, 2019.

"These new preclinical data further substantiate our theory that TIGIT and PVRIG are part of a foundational immuno-oncology axis, the DNAM axis," said Anat Cohen-Dayag, Ph.D., President and CEO of Compugen. "We believe that a combined treatment of COM902 with COM701, our first-in-class PVRIG antibody, has the potential to enhance the clinical impact of cancer immunotherapy in patients unresponsive to approved treatments. We look forward to advancing COM902 to the clinic early next year."

Key findings in the poster include:

- Broad expression of TIGIT and PVRIG ligands, PVR and PVRL2 in solid tumors.
- Superior binding affinity of COM902 to T cells with similar and or greater in vitro function compared to several clinical anti-TIGIT antibodies.
- Increased T cell activation by COM902 on tumor infiltrating lymphocytes (TILs), which was further enhanced by combination with COM701.

- Reduced mouse melanoma tumor growth in TIGIT and PVRIG knockout mice with further tumor growth reduction in TIGIT/PVRIG double knockouts.
- COM902 inhibited tumor growth and increased survival when combined with anti-PVRIG or anti-PD-L1 antibodies in a mouse model of colon cancer.

The poster will be available on Compugen's website following the poster presentation.

About COM902

COM902, a high affinity, fully human antibody targeting TIGIT, was developed for combination treatment with COM701. Preclinical data demonstrate that TIGIT inhibition, either alone or in combination with other checkpoint inhibitors, can enhance T cell activation and increase anti-tumor immune responses. Parallel inhibition of TIGIT and PVRIG, the two coinhibitory arms of the DNAM-1 axis, results in synergistic effects on effector T cell function and tumor growth inhibition in various model systems that can be further increased with the addition of PD-1 blockade. Based on preclinical data these combinations may be clinically important for enhancing anti-tumor immune response and expanding the patient population responsive to checkpoint inhibition. The Company plans to initiate Phase 1 studies in patients with advanced malignancies in early 2020 pursuant to the FDA's clearance of an investigational new drug application in October 2019.

Compugen discovered TIGIT in 2009 leveraging its immune checkpoint computational discovery platform through which PVRIG was also discovered. The TIGT discovery was published by Compugen in October 2009 in the Proceedings of the National Academy of Sciences (PNAS).

About Compugen

Compugen is a clinical-stage therapeutic discovery and development company utilizing its broadly applicable, predictive computational discovery platforms 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 computationally, including T cell immune checkpoints and additional early-stage immune-oncology programs focused largely on myeloid targets. 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 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," "predicts," "projects," "continues," "targets," "expects," "anticipates," "believes," "potential," "plan," "goal," "estimate," "likely," "should," "could," "would," "confident," "intends," and similar expressions 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 the preclinical data of COM902 and potential clinical trials of COM902. 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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