Compugen Announces Lead Therapeutic Candidate COM902 for CGEN-15137/TIGIT Immuno-Oncology Program

Strong clinical rationale for combination of COM701 and COM902 as cancer immunotherapies in addition to monotherapy use

HOLON, ISRAEL, March 28, 2017 — Compugen Ltd. (NASDAQ: CGEN), a therapeutic discovery company, announced today the selection of COM902 as the lead clinical antibody candidate for its CGEN-15137/TIGIT T cell checkpoint inhibitor program in immuno-oncology. COM902 follows COM701 into the Company's preclinical development pipeline. COM701 is the Company's lead therapeutic antibody targeting PVRIG, for which IND is anticipated later this year. As previously disclosed, PVRIG and TIGIT represent two distinct but complementary arms of the same biological pathway, and inhibition of the two results in increased activation of tumor infiltrating lymphocytes (TILs). This provides a strong clinical rationale for the combination of COM701 and COM902, in addition to monotherapy use, as immunotherapies to treat various cancer types.

Anat Cohen-Dayag, PhD, CEO and President of Compugen, commented, "The addition of this lead clinical antibody candidate for CGEN-15137/TIGIT to our preclinical pipeline represents another important milestone as we continue to build toward becoming a clinical stage company. We began our TIGIT program in 2016 based on our data indicating the potential for enhanced efficacy for combination treatment with COM701, and with our prior finding that TIGIT and PVRIG operate in the same biological pathway. The knowledge and the expertise we gained through the development of COM701 were an important factor in the accelerated development and selection of COM902. COM902 is a high affinity antagonist antibody selected for its potential ability to activate immune responses, both alone and in combination with COM701."

Dr. Cohen-Dayag added, "Currently available immuno-oncology therapies are effective for only a select subset of cancer patients, and we believe that the combination of COM701 and COM902, as well as with other checkpoint inhibitors, could provide a new therapeutic venue for treating cancer patients, specifically those non-responsive to current therapies. As we continue our development toward the clinic, we look forward to sharing with you more data as it becomes available."

About TIGIT

TIGIT is an immune checkpoint in the B7/CD28 family which has recently gained broad industry interest in the field of immuno-oncology. TIGIT was discovered by Compugen utilizing its *in silico* predictive discovery infrastructure and experimentally validated as an immune checkpoint. These findings were published by Compugen in the October 2009 issue of the Proceedings of National Academy of Sciences (PNAS). In the same year, two other groups also published papers disclosing

TIGIT as a new checkpoint. Antibodies targeting TIGIT being developed by others entered Phase I clinical studies in 2016.

TIGIT can inhibit both T cell and NK cell activation when bound to its ligand, PVR (also known as CD155). TIGIT expression is increased on tumor infiltrating lymphocytes (TILs), and inhibition of T cell activation by TIGIT has been reported to be mediated by its ability to disrupt DNAM-1 (also known as CD226) costimulatory signals. Recent preclinical studies have shown that antibody antagonists of TIGIT can potently inhibit tumor growth in mouse cancer models when combined with PD-1 pathway blockade.

About Compugen

Compugen is a leading therapeutic discovery company whose mission is to utilize its broadly applicable predictive discovery infrastructure to discover novel drug targets and develop first-in-class therapeutics. Our current pipeline consists of early and preclinical stage immuno-oncology programs based on novel drug targets discovered internally, primarily immune checkpoint and myeloid protein target candidates. These programs focus on the development of first-in-class cancer immunotherapy drugs with the potential to harness the immune system to provide treatment solutions in areas of unmet medical need in various cancer types and patient populations, both as monotherapy and in combination with other drugs. In addition, our pipeline currently includes a preclinical fusion protein autoimmune product candidate. Compugen's business model is based on selectively entering into collaborations for its novel target candidates and related drug product candidates at various stages of research and development under revenue-sharing agreements. The Company is headquartered in Israel, with R&D facilities in Israel and South San Francisco. At the US facilities, therapeutic monoclonal antibodies are discovered and developed against the Company's novel drug target candidates. For additional information, please visit Compugen's corporate website at http://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," 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 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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