



FOR IMMEDIATE RELEASE

Compugen's CGEN-15001 Demonstrates Restoration of Immune Tolerance in Autoimmunity

New data shows restoration of antigen-specific immune tolerance and re-establishment of immune homeostasis

HOLON, ISRAEL, January 4, 2017 — Compugen Ltd. (NASDAQ: [CGEN](#)), a leading predictive drug discovery company, disclosed today new animal model results demonstrating restoration of immune tolerance by CGEN-15001, the Company's lead candidate for treatment of autoimmune diseases. Importantly, the immune tolerance established by CGEN-15001 was shown to be antigen-specific, indicating that treatment with CGEN-15001 has the potential to not only generate a durable response, but also to avoid the global immune suppression generated by other therapeutic agents for autoimmune diseases. CGEN-15001 is an Fc fusion protein based on a Compugen-discovered novel immune checkpoint protein.

Restoring long-lived immune tolerance and homeostasis, with the desired result of a durable therapeutic response in patients, is one of the greatest challenges of immunology and remains a major unmet need in the treatment of autoimmune diseases. The new findings being disclosed today, along with supporting data from earlier research by the Company, demonstrate that CGEN-15001, a first-in-class therapeutic candidate, has the potential to restore immune tolerance and re-establish immune homeostasis, thus potentially offering patients a durable therapeutic response and a safer treatment profile.

Anat Cohen-Dayag, Ph.D., CEO and President of Compugen, stated, "Autoimmune diseases, such as multiple sclerosis, rheumatoid arthritis, type 1 diabetes and psoriasis, are conditions in which the immune system attacks the body's healthy tissues due to loss of self-tolerance. Restoring this tolerance without impacting the immune system's ability to fight other diseases is the Holy Grail of immunology. Currently, most drugs indicated for autoimmune diseases are general immuno-suppressants, which may lead to serious side effects including infections and an elevated risk of cancer. Our results to date indicate that CGEN-15001 can provide a promising, novel therapeutic approach for treatment of a wide range of autoimmune diseases by restoring immune tolerance without compromising the protective function of the immune system. As previously disclosed by the Company, this effect of CGEN-15001 appears to be associated with its ability to enhance differentiation of regulatory T cells (Tregs), a population of immune cells that plays a pivotal role in maintaining immune tolerance. Therefore, we very much look forward to further advancing this exciting therapeutic opportunity into the clinic with an appropriate partner."

The data being disclosed today from recent studies conducted in collaboration with Professor Stephen Miller, from the Feinberg School of Medicine at Northwestern University, demonstrate that in animal models of relapsing-remitting multiple sclerosis (often used to evaluate potential

autoimmune disease therapies), immune tolerance can be transferred from diseased donor mice treated with CGEN-15001 to recipient naïve mice. More importantly, this immune tolerance was shown to be antigen-specific, as the transfer of T cells from diseased donor mice treated with CGEN-15001 resulted in protection of the recipient mice from developing the disease in response to the specific antigen driving the disease at the time of treatment with CGEN-15001.

In contrast, and under the same conditions, the transfer of T cells from diseased mice treated with a mouse version of CTLA4-Ig (a marketed immune checkpoint-based drug for autoimmunity) to recipient naïve mice did not protect the recipient mice from developing the disease, indicating no induction of immune tolerance with this drug. This lack of protection was observed despite the fact that both CGEN-15001 and CTLA4-Ig were similarly efficacious in decreasing the clinical symptoms in the diseased donor mice.

Professor Miller stated, "This observation is of significance since CGEN-15001 appears to not only act as an immune tolerance inducing agent, but also to act in an antigen-specific manner, thus having the potential to benefit patients with a long-lived drug free remission while avoiding the global immune suppression induced by other treatments. This data therefore supports a safety profile for CGEN-15001 with potentially low risk for infections and neo-malignancies which are unfortunately recognized side effects of many of the currently available drugs for autoimmunity."

About CGEN-15001

CGEN-15001 is an Fc fusion protein drug candidate for autoimmune diseases, consisting of the fusion of the extracellular region of CGEN-15001T to an IgG Fc domain. CGEN-15001T is a novel immune checkpoint discovered by Compugen using its broadly applicable predictive discovery infrastructure. CGEN-15001 was previously shown to be effective in treating several autoimmune diseases in animal models, including models of multiple sclerosis, rheumatoid arthritis, type 1 diabetes and psoriasis. In some of these models, a short period of treatment with CGEN-15001 was shown to induce a durable long-term response suggestive of an immune tolerance mechanism. Additional studies demonstrated that CGEN-15001 has an immunomodulatory function manifested in attenuating inflammatory responses and promoting regulatory and anti-inflammatory activities, including the differentiation of regulatory T cells (Tregs), a population of immune cells that plays a pivotal role in induction and maintenance of immune tolerance. Importantly, the long-term therapeutic effect of CGEN-15001 appears to be associated with its ability to enhance the differentiation of Tregs.

About Immune Tolerance

Immune tolerance is the normal healthy state in which the immune system is programmed to avoid attacking the body's own cells and tissues. Improper immune tolerance characterizes both cancer and autoimmunity. While in cancer the therapeutic goal is to break immune tolerance towards tumor antigens and thereby unleash the immune system to attack the tumor cells, in autoimmunity the goal is to restore immune tolerance towards the body's healthy cells and thereby protect such cells from an immune attack.

In autoimmunity, the immune system mistakenly identifies the body's own cells or tissues as foreign invaders, due to breach of self-tolerance, leading to various autoimmune diseases such as multiple sclerosis, rheumatoid arthritis, type 1 diabetes, or psoriasis. Reprogramming the

immune system to restore tolerance and re-establish homeostasis can lead to a sustained resolution of autoimmunity and disease remission. In contrast, current therapeutic approaches that rely on suppressing the immune system can compromise its capacity to fight infectious diseases and malignancies, leading to the potential of severe side effects. Therefore, induction and maintenance of immune tolerance is widely recognized as a key unmet need in the treatment of autoimmune diseases.

Targeting immune checkpoints to restore immune tolerance in autoimmunity is a promising approach anticipated to bring a paradigm shift in the treatment of autoimmunity similar to advances now being made by immune checkpoint-based therapies in immuno-oncology.

About Compugen

Compugen is a leading therapeutic discovery company utilizing its broadly applicable predictive discovery infrastructure to identify novel drug targets and develop first-in-class biologics. The primary focus of the Company's current pipeline is on immune checkpoint target candidates discovered by the Company, potentially providing the basis for a next wave of therapeutics for cancer immunotherapy. Compugen's business model is based on selectively entering into collaborations for its novel target candidates and 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, monoclonal antibody therapeutic candidates are discovered and developed against the Company's novel target candidates. For additional information, please visit Compugen's corporate website at <http://www.cgen.com>.

Forward-Looking Statements

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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