FOR IMMEDIATE RELEASE

Compugen Discloses Development of Enhanced LINKS Platform Utilized for the Discovery of Myeloid Targets for Cancer Immunotherapy

Myeloid target candidates predicted in silico using enhanced LINKS platform are now being experimentally validated

HOLON, ISRAEL – August 30, 2016 – Compugen Ltd. (NASDAQ: CGEN), a leading predictive drug discovery company, today disclosed that its LINKS computational platform, initially designed for the characterization and differentiation of existing novel drug target candidates, has been enhanced to include the *in silico* discovery of new immuno-oncology drug targets, with a specific focus on the discovery of myeloid targets within the tumor microenvironment (TME). LINKS now allows the Company to broaden its existing repertoire of immune checkpoint targets, which already includes a few myeloid targets, predicted by algorithms and methodologies previously developed by the Company. The myeloid targets, now being experimentally validated by the Company, have the potential to transform cancer treatment in patients that are non-responsive to treatments with current checkpoint inhibitors.

This further development of LINKS, a component of the Company's broad predictive discovery infrastructure, included the integration of additional public and proprietary data in order to allow the identification and analysis of specific immune cell types derived from the TME, and, in particular, myeloid cells. Through the integration of multiple data types across a range of conditions, diseases, stimuli and specific myeloid sub-populations, the enhanced LINKS platform has now demonstrated the capability to predict new *in silico* myeloid target candidates that have potential utility in cancer immunotherapy.

LINKS, first disclosed in June 2015, was originally designed to allow comprehensive characterization and differentiation of drug target candidates of various types through the integration and analysis of multi-dimensional patient data, including genomic, gene expression and clinical data. The LINKS platform provides disease context and facilitates association of novel drug targets with specific disease conditions, clinical attributes, disease-associated mechanisms-of-action and other key characteristics. The first use of the platform was to differentiate, prioritize and provide further information on the novel immune checkpoint target

candidates on T cells or predicted to act on T cells that had already been discovered by Compugen, which are the primary focus of the Company's Pipeline Program.

Dr. Anat Cohen-Dayag, President and CEO of Compugen, explained, "Myeloid biology is an emerging and promising area within the field of immuno-oncology, with only a few known therapeutic targets. Therefore, we and our scientific advisors expect that our discovery of additional myeloid targets will provide opportunities for development of powerful new immuno-oncology therapeutics for patients with cancers possessing a strong immune suppressive environment or that are refractory to available immune checkpoint inhibitors. These opportunities would include both monotherapy and combination therapy, potentially with the combined use of our own pipeline candidates, thus providing the opportunity for multiple differentiated treatment options."

Dr. Cohen-Dayag continued, "The few myeloid cell target candidates already in our current therapeutic pipeline were predicted by us in the past as part of our first focused discovery effort for B7/CD28 immune checkpoints. With the recently enhanced LINKS platform, we have already predicted additional myeloid targets within the tumor microenvironment, which we are currently experimentally validating. This provides another example of the unique advantage of having a broadly applicable *in silico* target discovery infrastructure which can be quickly enhanced to focus more deeply on specific areas of interest."

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 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," and "intends," and describe opinions about 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 as well as other documents that may be subsequently filed by Compugen from time to time with the Securities and Exchange Commission. 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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