

**FORM 6-K**  
**SECURITIES AND EXCHANGE COMMISSION**

**Washington, D.C. 20549**

**Report of Foreign Private Issuer**

Pursuant to rule 13a-16 or 15d-16 of the Securities Exchange Act of 1934  
for the month of February 2012

Compugen Ltd.  
(Translation of registrant's name in English)

72 Pinchas Rosen Street, Tel-Aviv 69512, Israel  
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports  
under cover Form 20-F or Form 40-F.

Form 20-F  X

Form 40-F \_\_\_\_

On February 2, 2012, Compugen Ltd. (the "Registrant") issued a Press Release,  
filed as Exhibit 1 to this Report on Form 6-K, which is hereby incorporated by  
reference herein.

**SIGNATURE**

Pursuant to the requirements of the Securities Exchange Act of 1934, the  
Registrant has duly caused this report to be signed on its behalf by the  
undersigned, thereunto duly authorized.

Compugen Ltd.  
(Registrant)  
By: Ms. Dikla Czaczkes Axselbrad  
Title: Chief Financial Officer  
Date: February 2, 2012



## **Compugen Cancer Target Results Demonstrate Significant Potential for Cancer Immunotherapy**

*Expression levels of CGEN-15001T on various solid, hematological cancer cells and immune cells combined with its immunomodulatory activities support its potential use as a powerful drug target for cancer immunotherapy*

Tel Aviv, Israel, February 2, 2012 --- Compugen Ltd. (NASDAQ: CGEN) announced today results demonstrating the therapeutic potential of CGEN-15001T as a drug target for treatment of multiple cancers by means of monoclonal antibody ("mAb") therapy. These results indicate that CGEN-15001T is expressed on numerous types of cancer, such as carcinomas, sarcomas, melanoma and hematological cancers as well as on immune cells. These findings, together with previous results supporting its active immunomodulatory effect, strongly support CGEN-15001T's potential as a powerful drug target for treatment of various solid and hematological cancers, an area of great interest to the pharmaceutical industry.

CGEN-15001T is a membrane protein, which was predicted by Compugen to be a B7/CD28-like protein. The B7/CD28 protein family is known to be involved in regulation of the immune system in immune related disorders and in cancer. Initial validation results previously demonstrated that CGEN-15001T is expressed in both prostate cancer cells as well as in immune cells residing within the tumor. The results being reported today are based on recently completed studies using an antibody specifically recognizing CGEN-15001T. These studies were designed to analyze in greater detail the protein expression levels of CGEN-15001T in multiple cancers of interest. In these studies CGEN-15001T's expression was demonstrated in various solid cancers in addition to prostate cancer, including melanoma, hepatocellular carcinomas, pancreatic islet cell carcinomas, and also in hematological malignancies such as Hodgkin's lymphoma, and T and B cell lymphomas. This expression on multiple cancer types is consistent with the expression of other known B7 proteins.

Furthermore, the expression of CGEN-15001T was observed in various subpopulations of immune cells, mainly macrophages and mast cells, in both tumor and normal tissue samples. This expression profile suggests a potential immunomodulatory role for CGEN-15001T in cancer therapy. This was further demonstrated by preclinical data obtained with CGEN-15001, which is the extracellular domain of CGEN-15001T fused to an Fc antibody fragment. In these studies performed by Compugen, CGEN-15001 was shown to inhibit activation of T cells, promote Th1/Th2 shift, and potentially induce immune tolerance, suggesting that this protein may help the cancer "silence" the immune responses towards the cancer cells. Blocking this function of CGEN-15001T through therapeutic antibodies would remove the suggested silencing effect of CGEN-15001T on the tumor, and would therefore enable the immune system to attack and destroy the tumor, thus serving as a very promising approach for cancer immunotherapy.

Taken together, the expression profile of CGEN-15001T and its proposed immunomodulatory profile suggest that a single therapeutic antibody against CGEN-15001T may attack cancer cells through three key mechanisms. One mechanism is by

direct targeting and killing of the cancer cells expressing CGEN-15001T. Since CGEN-15001T is expressed on numerous cancers, an antibody against CGEN-15001T has therapeutic potential for various cancer indications. Another mechanism of the therapeutic antibody may be achieved by blocking the inhibition of the immune system induced by CGEN-15001T, whether expressed on the cancer cells and/or the immune cells within the tumor. And third, the same mAb for CGEN-15001T may promote the immune system component which acts against the tumor (Th1), while inhibiting the component which promotes the cancer (Th2). The significant potential of having all three mechanisms in a single therapeutic antibody to CGEN-15001T is being pursued actively by Compugen as part of its expanded mAb activities within its Pipeline Program.

Dr. Anat Cohen-Dayag, CEO of Compugen, remarked, "Immunotherapy is one of the most promising new approaches for the treatment of various cancers, and within this field, mAb immunotherapy appears to be the most rapidly growing segment. The mechanisms by which mAbs fight cancer are very versatile, including "tagging" the malignant cell so that it is better recognized by the immune system, and blocking signals that promote growth and survival of cancer cells.

Dr. Cohen-Dayag concluded, "We are extremely pleased to report that our studies to date with CGEN-15001T, the first of our nine novel B7/CD28-like proteins to undergo these studies, indicate that a mAb against this novel target provides the opportunity for treating multiple cancer indications of various origins through several mechanisms of action, in order to promote an immune attack on cancer cells."

#### **About Compugen's Monoclonal Antibody Targets Discovery Platform**

Compugen's Monoclonal Antibody Discovery Platform is used to identify new promising targets for mAb therapy, which are a significant challenge for the industry. The platform relies heavily on the Company's LEADS and MED capabilities, two computational biology infrastructure platforms that serve as core components for the development of Compugen's discovery platforms, and in the case of the B7/CD28 family-like proteins, the Company's Protein Family Members Discovery Platform. The LEADS platform provides a comprehensive view of the human transcriptome, proteome, and peptidome and serves as a rich infrastructure for the discovery of novel genes, transcripts and proteins. The MED Platform is an integrated database composed of the results from more than 70,000 public microarray experiments, normalized and organized into approximately 1,400 therapeutically relevant conditions (i.e. normal tissues, malignant tissues, tissues from drug treated patients, etc.) and allows the simultaneous examination of the expression of genes and pathways across all 70,000 microarray experiments.

In addition to incorporating MED and LEADS, the mAb Targets Discovery Platform utilizes multiple data sources and algorithms to predict a large number of novel membrane proteins that can serve as targets for antibody therapeutics, such as for various cancer and autoimmune diseases. The selection of appropriate candidates from this large body of predicted membrane proteins is accomplished using sub-modules of algorithms and other computational tools developed specifically for each disease state or protein family.

#### **About Compugen**

Compugen is a leading therapeutic product discovery company focused on therapeutic proteins and monoclonal antibodies to address important unmet needs in the fields of immunology and oncology, either for Compugen or its partners. Unlike traditional

high throughput trial and error experimental based drug candidate discovery, Compugen's discovery efforts are based on systematic and continuously improving *in silico* (by computer) product candidate prediction and selection followed by experimental validation, with selected product candidates being advanced in its Pipeline Program to the pre-IND stage. Compugen's *in silico* predictive models utilize a broad and continuously growing infrastructure of proprietary scientific understandings and predictive platforms, algorithms, machine learning systems and other computational biology capabilities. The Company's business model primarily involves collaborations covering the further development and commercialization of Compugen-discovered product candidates and various forms of "discovery on demand" arrangements, in both cases providing Compugen with potential milestone payments and royalties on product sales or other forms of revenue sharing. In 2002, Compugen established an affiliate, Evogene Ltd. ([www.evogene.com](http://www.evogene.com)) ([TASE: EVGN.TA](http://TASE:EVG.N.TA)), to utilize certain of the Company's *in silico* predictive discovery capabilities in agricultural biotechnology. For additional information, please visit Compugen's corporate website at [www.cgen.com](http://www.cgen.com).

This press release may contain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements include words such as "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. Some of these risks are: changes in relationships with collaborators; the impact of competitive products and technological changes; risks relating to the development of new products; and the ability to implement technological improvements. These and other factors are discussed in the "Risk Factors" section Compugen's Annual Report on Form 20-F for the year ended December 31, 2010 as filed 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.

**Company contact:**

Tsipi Haitovsky  
Global Media Liaison  
Compugen Ltd.  
Email: [tsipih@netvision.net.il](mailto:tsipih@netvision.net.il)  
Tel: +972-52-598-9892