

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 December 2010

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 December 06, 2010, 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: December 06, 2010



New Studies Support Therapeutic Potential of Compugen Discovered Target for Multiple Myeloma Treatment

Results of recent studies of CGEN-928 by IMBCR being presented at the American Society of Hematology (ASH) Conference

Antibody directed against CGEN-928 markedly inhibits the growth of multiple myeloma cells and enhances the anti-myeloma effects of standard of care therapies

Tel Aviv, Israel, December 6, 2010 --- Compugen Ltd. ([NASDAQ:CGEN](#)) announced today results from recently completed studies that further demonstrate the therapeutic potential of CGEN-928 as a drug target for treatment of multiple myeloma (MM) through mAb therapy. These new studies were carried out by the Institute for Myeloma & Bone Cancer Research (IMBCR) and are being presented at the 52nd American Society of Hematology (ASH) now taking place in Orlando, FL.

CGEN-928, a previously uncharacterized protein, was earlier shown by Compugen to be broadly expressed in multiple myeloma tumor cells. In addition, these earlier studies demonstrated that CGEN-928 is uniquely present in advanced disease stages of MM as well as in drug-resistant and aggressive MM, indicating potential targeting of the more aggressive disease stages and types, currently an unmet medical need. Based on the positive results of these initial studies, Compugen initiated a number of functional studies at the IMBCR to explore CGEN-928's involvement in MM tumor biology.

The recently completed studies demonstrated that a polyclonal antibody which specifically recognizes CGEN-928, decreases MM tumor cell proliferation and induces apoptosis, a process in which cells undergo a programmed cell death. These positive results were seen in both MM cells from patients and in MM cell lines and indicate that an antibody specific for CGEN-928 may cause the specific killing of MM cells. Furthermore, an enhanced decrease in *in vitro* MM tumor cell growth was demonstrated when combining the CGEN-928 antibody with each of three existing MM standard of care drugs (bortezomib, melphalan, and dexamethasone), compared to the drugs alone. These studies suggest a potential synergistic effect of combining the targeting of CGEN-928 with standard of care drugs, thus providing a potentially enhanced clinical response with the combination therapy. The overall results of the studies done to date for CGEN-928, both of expression and functionality, strongly support its continued development as a potential target for monoclonal antibody based therapy for MM.

Dr. James R. Berenson, a leading multiple myeloma specialist and the Medical & Scientific Director of The Institute for Myeloma & Bone Cancer Research in California, where most of this research was conducted, stated, "The results we obtained with CGEN-928 in multiple myeloma provide a basis for development of antibody-based therapy against this target for MM, which shows promise both as a single therapy as well as a combination therapy which improves the activity of other antimyeloma drugs. In addition, this novel target may be a new marker for this common blood-based malignancy especially for the unmet medical need of detecting and treating cells that are most aggressive and resistant to currently available drugs."

Dr. Zurit Levine, Compugen VP of R&D, stated, “As recently announced, although Compugen’s core predictive discovery capabilities are broadly applicable, we currently have oncology and immunology therapeutics as our main fields of focus. Therefore, we are extremely pleased to see both the increasing rate of predicted therapeutic candidates in these fields being added to our validation pipeline - with more than twenty such molecules being added in the last few months - and the additional very positive experimental results from leading experts for our previously validated molecules, such as being reported here for CGEN-928 and reported last month for CGEN-15001.”

About Multiple Myeloma

Multiple myeloma is a malignancy of the bone marrow. The tumor is composed of plasma cells, which are specialized immune cells that under normal conditions produce antibodies, and therefore are a key component of a healthy immune system. However, in multiple myeloma, the plasma cells in the bone marrow become cancerous and begin to divide without control, destroying normal bone tissue and often causing severe pain, fractures and skeletal deformities. Other complications of the disease include anemia, infections and hypercalcemia, all of which can lead to death. Multiple myeloma is the second most prevalent blood cancer after non-Hodgkin's lymphoma. It represents approximately 1% of all cancers and 2% of all cancer deaths. Although the peak age of onset of multiple myeloma is 65 to 70 years of age, recent statistics indicate both increasing incidence and earlier age of onset.

About Compugen’s Monoclonal Antibody Targets Discovery Platform

Compugen’s Monoclonal Antibody Targets Discovery Platform relies heavily on Compugen’s LEADS and MED capabilities, two computational biology infrastructure platforms that serve as core components for the development of Compugen’s discovery platforms. 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. It includes extensive gene information and annotation, such as: splice variants, antisense genes, SNPs, novel genes, RNA editing, etc. At the protein level, LEADS provides full protein annotation, including homologies, domain information, subcellular localization, peptide prediction, and novelty status. The MED Platform is an integrated database composed of the results from more than 40,000 public and proprietary microarray experiments, normalized and organized into approximately 1,400 therapeutically relevant conditions (i.e. normal tissues, malignant tissues, tissues from drug treated patients, etc.). Utilizing a sophisticated query interface, the proprietary MED platform allows the simultaneous examination of the expression of genes and pathways across all 1,400 conditions and tissues as well as all 40,000 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 drug and diagnostic product candidate discovery company. Unlike traditional high throughput trial and error experimental based discovery, Compugen’s discovery efforts are based on *in silico* (by computer) product candidate prediction and selection utilizing a broad and continuously growing infrastructure of proprietary scientific understandings and predictive platforms, algorithms, machine learning systems and other computational biology tools to address important unmet therapeutic and diagnostic needs - either for Compugen or its partners. Compugen’s growing number of collaborations covering the further development and commercialization of Compugen discovered product candidates all provide Compugen with potential milestone payments and royalties on product sales or other forms of revenue sharing. These collaborations may be entered into before product candidate discovery is undertaken pursuant to “discovery on demand” type arrangements, or with respect to existing product

candidates, collaborations can be initiated prior to or at the proof of concept stage, or after additional preclinical activities have been undertaken by Compugen. In 2002, Compugen established an affiliate, Evogene Ltd. (www.evogene.com) (TASE: EVGN.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.

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 identified and more fully explained under the heading "Risk Factors" in Compugen's annual reports filed with the Securities and Exchange Commission.

Company contact:

Marjie Hadad
Global Media Liaison
Compugen Ltd.
Email: marjie@cgen.com
Tel: +972-54-536-5220