

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 July 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 July 01, 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: July 01, 2010



Compugen Discovered Protein Shown to Abolish Recurring Relapses in Multiple Sclerosis Animal Model

CGEN-15001 also demonstrates pronounced delay of disease onset and significant decrease in disease symptoms

Existence of B7/CD28 family member initially predicted by Compugen's LEADS Platform and proprietary algorithm for predicting novel protein family members

Tel Aviv, Israel, July 1, 2010 --- Compugen Ltd. ([NASDAQ: CGEN](#)) announced today that administration of CGEN-15001 in an animal model of multiple sclerosis (MS) has been shown to completely abolish spontaneous relapses. In addition, administration of this novel molecule prior to disease onset demonstrated a pronounced delay of disease onset and a significant decrease in disease symptoms. These results, together with complementary results from earlier studies, strongly support a significant potential therapeutic utility for CGEN-15001 in the treatment of multiple sclerosis and other autoimmune diseases, such as rheumatoid arthritis, systemic lupus erythematosus, inflammatory bowel disease, and type 1 diabetes.

CGEN-15001 is a soluble recombinant fusion protein comprised of the extracellular region of a Compugen discovered B7/CD28 family member, designated CGEN-15001T. CGEN-15001T, which itself has potential medical utilities - such as serving as a target for antibody therapeutics - was discovered by Compugen through the use of its LEADS platform and a proprietary algorithm designed to predict novel members of known protein families. Patents have been filed for both CGEN-15001 and CGEN-15001T.

The recently completed study of CGEN-15001 utilized the relapsing-remitting autoimmune encephalomyelitis mouse model. This well-recognized animal model of multiple sclerosis manifests an autoimmune CNS demyelinating disease with clinical and pathologic similarity to human relapsing-remitting multiple sclerosis. Relapsing-remitting multiple sclerosis is the most common form of MS affecting approximately 85% of the 2.5 million people worldwide diagnosed with MS. Relapses in multiple sclerosis patients result in recurring attacks of clinical symptoms which lead to a worsening of existing symptoms or to the appearance of new symptoms. Thus, prevention of relapses is a major goal in the development of treatments for multiple sclerosis, and the demonstrated therapeutic effect of CGEN-15001 in the presence of this established disease, as demonstrated in this animal model, is highly relevant for its potential use in human therapy.

Professor Stephen Miller from Northwestern University, a leading scientist in this field who supervised the studies, stated, "The capacity of CGEN-15001 to prevent the development of disease in this well-recognized animal model for multiple sclerosis, and more significantly to ameliorate its progression when administered in the presence of pre-existing disease is quite dramatic. Furthermore, these beneficial effects were shown to be long lasting and persisted through the study, indicating that CGEN-15001 may prevent disease progression as efficiently as immune tolerance induction, a process whereby the immune system no longer attacks the self antigens that cause the disease. These findings, together with those demonstrated in our earlier studies, are unique among the molecules targeting the B7 family of co-stimulatory molecules that have been published to date."

Compugen's VP R&D, Dr. Zurit Levine stated, "In addition to being an extremely exciting discovery, this is a good example of how our extensive infrastructure of predictive capabilities can be utilized for 'discovery on demand' purposes. In this case, we were interested in finding a new member of the B7 protein family, a family of proteins that are widely believed to have substantial therapeutic potential. However, it was our belief that relying only on commonly used discovery approaches, such as sequence and functional homology, which underlie most such efforts by others, would be unlikely to yield all unknown members for this family."

Dr. Levine continued, "We utilized, therefore, a different predictive discovery approach combining certain components of our LEADS infrastructure platform with a proprietary algorithm that had been developed to predict *in silico* novel members of a known protein family based on genomic information, protein structure and additional characteristics. This led to the prediction and selection of a number of novel proteins, including CGEN-15001T, and the discovery of CGEN-15001T led to the identification of the CGEN- 15001 protein."

About the B7/CD28 protein family

Members of the B7/CD28 family have been intensively studied over the past decade and have brought much excitement to the field of immune regulation. The activation and development of an adaptive immune response is initiated by the engagement of a T-cell antigen receptor with an antigenic peptide-MHC complex. The outcome of this engagement is determined by both positive and negative co-stimulatory signals, generated mainly by the interaction between the B7 family and their receptor CD28 family. A growing body of evidence indicates that the dysfunction of immune regulation contributes to the development of autoimmune diseases.

Positive and negative co-stimulatory pathways play critical roles in immune regulation and are considered potential targets for modulating chronic inflammation in autoimmune diseases. To date, one soluble recombinant fusion protein, that selectively blocks the co-stimulatory signal mediated by the B7/CD28 pathway, has been cleared for marketing in the U.S. for the treatment of moderate to severe rheumatoid arthritis, and is in clinical trials for other autoimmune indications. In addition, a number of clinical and preclinical studies of this protein family are underway at various companies.

About LEADS

The LEADS platform provides a comprehensive predictive 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 and RNA editing. At the protein level, LEADS provides full protein annotation, including homologies, domain information, subcellular localization, peptide prediction and novelty status.

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) prediction and selection utilizing a growing number of field focused proprietary discovery platforms accurately modeling biological processes at the molecular level. Compugen's growing number of collaborations with major pharmaceutical and diagnostic companies cover both (i) the licensing of product candidates discovered by Compugen during the validation of its discovery platforms and in its internal research, and (ii) "discovery on demand" agreements where existing or new Compugen discovery platforms are utilized to predict and select product candidates as required by our partner. 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.

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