

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 October 2009

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 October 13, 2009 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 Axsellbrad
Title: Chief Financial Officer
Date: October 13, 2009



Compugen and Bayer Schering Pharma to Collaborate on Compugen Discovered Oncology Target and Splice Variants

**Agreement provides Bayer Schering Pharma with option
for worldwide exclusive license to monoclonal antibody and
other therapeutics related to such targets**

**Existence of targets was predicted *in silico* using
Compugen's Monoclonal Antibody Targets Discovery Platform**

Tel Aviv, Israel, October 13, 2009 --- Compugen Ltd. (NASDAQ: CGEN) announced today that they have signed a collaboration agreement with Bayer Schering Pharma AG, Germany ("Bayer") covering the further evaluation of a Compugen discovered tumor target and its splice variants. Following an initial six month joint research stage, the agreement provides Bayer with an option for an exclusive worldwide royalty bearing license for development of monoclonal antibodies and other therapeutic agents addressing these novel target molecules. The existence of the target and its splice variants was initially predicted *in silico* by Compugen through the use of its Monoclonal Antibody (mAb) Targets Discovery Platform; the predicted molecules were then validated experimentally.

The newly discovered tumor target and its splice variants are previously unknown splice variants of a known cancer target for which therapeutic agents are currently in pre-clinical development by other organizations. Like the known cancer target, this protein molecule and its variants are all trans-membrane proteins. However, each of the Compugen molecules has a unique sequence at the extracellular domain of the protein that enables the development of monoclonal antibodies specific to each of the respective splice variants. Therefore each splice variant could represent a novel target for monoclonal antibody therapy.

A common feature of Compugen's discovery platforms, such as the mAb Targets Discovery Platform used in this discovery, is the ability to predict and select multiple potential product candidates for each indication of interest. The availability of multiple candidates, in this case a number of different splice variants, should increase the probability of success for the overall program.

Dr. Anat Cohen-Dayag, co-CEO of Compugen said, "Usage of our mAb Targets Discovery Platform is now providing us with a growing inventory of novel target candidates, such as the specific targets covered by this agreement, displaying differential expression in a range of tumor vs. healthy samples. Discovery of target candidates is a key step in the development of monoclonal antibody biotherapeutics for both solid tumors such as ovarian cancer, lung cancer, and colon cancer, as well as hematological malignancies such as multiple myeloma, acute and chronic leukemia and Non Hodgkin lymphoma; and, we are now seeing a growing interest in both our existing target candidates and further applications of the platform. We are therefore very enthusiastic about the clinical and commercial potential for this unique discovery platform and are especially pleased to enter into this collaboration with Bayer Schering Pharma, a world leading pharmaceutical company."

About Compugen's Monoclonal Antibody (mAb) Targets Discovery Platform

During the past two decades, monoclonal antibodies have emerged as an important and rapidly growing new drug class, and identifying the appropriate targets is recognized as the key discovery requirement. In addition, this class of drugs has demonstrated a higher probability of success in clinical development in comparison with other drug classes. Compugen's mAb Targets Discovery Platform relies on Compugen's LEADS and MED capabilities, two proprietary infrastructure platforms that power, together or separately, a number of the Company's ten existing product candidate discovery platforms. LEADS provides a comprehensive view of the human transcriptome, proteome, and peptidome, allowing the discovery of numerous novel genes, proteins, and peptides. It includes extensive gene and protein information and annotation, such as splice variants, antisense genes, SNPs, novel genes, chimeric genes and RNA editing. The MED Platform provides 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 MED platform allows the examination of the expression of genes and pathways across all 1,400 tissues and conditions simultaneously.

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) prediction and selection utilizing a growing number of field focused proprietary discovery platforms accurately modeling biological processes at the molecular level. The resulting product candidates are then validated through *in vitro* and *in vivo* experimental studies and out-licensed for further development and commercialization under various forms of revenue sharing agreements. Compugen's collaborations include Bayer Schering Pharma, Biosite, Medarex, Inc., Merck & Co., Inc., Merck Serono, Ortho-Clinical Diagnostics (a Johnson & Johnson company), Roche, Siemens Healthcare Diagnostics, Inc., and Teva Pharmaceutical Industries. 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 Web site 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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