

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 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 October 29, 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: October 29, 2010



Compugen Licenses Novel Oncology Target to Seattle Genetics

Agreement provides Seattle Genetics with research license and option for exclusive commercial license to monoclonal antibody-based therapeutics targeting Compugen-discovered target

Existence of target initially predicted in silico using Compugen's Monoclonal Antibody Targets Discovery Platform

Tel Aviv, Israel, October 29, 2010 --- Compugen Ltd. ([NASDAQ: CGEN](#)) announced today that it has signed a research collaboration agreement with Seattle Genetics, Inc., USA, covering a Compugen-discovered oncology target. The agreement provides Seattle Genetics with an initial evaluation period and an option for an exclusive worldwide milestone and royalty bearing license for development and commercialization of monoclonal antibody therapeutics addressing this novel target. The existence of the target, which is a previously unknown splice variant of a known oncology target, was initially predicted *in silico* through the use of Compugen's Monoclonal Antibody (mAb) Targets Discovery Platform. The predicted molecule's existence and overexpression in several of the most prevalent solid cancers was recently demonstrated in independent experimentally based studies.

Dr. Anat Cohen-Dayag, president & CEO of Compugen stated, "We are very enthusiastic about this new collaboration, our first with Seattle Genetics, a leading company in the rapidly growing field of monoclonal antibodies and antibody drug conjugates. The Compugen novel target that is the subject of this agreement has shown potential in a number of important unmet areas of cancer treatment."

Dr. Cohen-Dayag continued, "We also are pleased to see the continuing and growing interest of the industry with respect to our mAb Targets Discovery Platform. This unique capability, which addresses the key unmet market need in the rapidly growing antibody therapeutic field, is now serving as both the source of targets for collaborations, such as the one being announced today and our ongoing collaboration with Bayer Schering Pharma, and also to predict and select, in combination with other Compugen tools and capabilities, an inventory of potential targets for further internal development under the new program disclosed earlier this week in our quarterly press release."

Martin Gerstel, Compugen's chairman added, "As described in the quarterly release, our business model provides three potential pathways for development and commercialization of our product candidate discoveries. Collaborations can be entered into before our prediction and selection of candidates is undertaken pursuant to 'discovery on demand' agreements, or with respect to existing Compugen product candidates, collaborations can be initiated prior to or at the proof of concept stage, or after additional preclinical activities have been undertaken by us. In all cases these agreements provide Compugen with potential milestone payments and royalties on product sales or other revenue sharing arrangements. The decision as to which pathway we choose in each specific case will depend on many factors, such as proprietary knowledge or technology of a potential partner that could expedite and increase the probability of success of development or commercialization; the anticipated overall relationship with the potential partner; our assessment

of the risk/reward profile of further development by us; and available financial terms at each point in time.”

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

Compugen’s mAb 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 cancers 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.

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