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 April 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 April 22, 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: April 22, 2010

Compugen Announces New Drug Discovery Platform to Predict Peptides that Block Protein – Protein Interactions

12th Discovery Platform disclosed by company provides additional broadly applicable capability for "discovery on demand" collaborations

Tel Aviv, Israel, April 22, 2010 --- Compugen Ltd. (NASDAQ: CGEN) announced today the development of its Protein-Protein Interaction Blockers (PPI Blockers) Discovery Platform, designed for the prediction of peptides to block disease associated protein-protein interactions. In a pilot validation run, predicted peptides showed positive results for drug targets in two cancer related pathways of interest to the industry.

The PPI Blockers Discovery Platform consists of two main components. The first component creates a predicted protein-protein interaction map for the protein target of interest in a selected biological pathway. This map is based on both the target's known protein partners and additional proteins predicted by Compugen as potential partners through the analysis of human and non-human proteomes and interaction data.

The second component, applied to all relevant key proteins of the pathway, is based on identifying computationally the predicted protein-protein binding segments through sequence and structural characteristics. The identification of these segments allows the design and selection of peptides that could serve as drugs by blocking all or a portion of the interacting site. These peptide blockers may either serve as therapeutic peptides or be used as epitopes for the development of therapeutic antibodies. A key advantage of the platform is that it is designed to predict peptides that block a wide range of target proteins and can do so without any knowledge of the three-dimensional structure of the target.

Dr. Zurit Levine, Compugen's VP R&D, stated, "Both the interaction with another protein ('protein-protein interaction') and the formation of a specific conformation through the interaction of separate segments of the same protein ('intra-molecular interaction') are required for proteins to exert their function. Therefore blocking one or both of these phenomena as an approach for drug therapy is of intense research worldwide. However, relying on conventional large-scale experimental discovery methods such as screening thousands of compounds or peptides per target has resulted in an extremely low discovery rate of molecules with the required inhibitory effects."

Dr. Levine continued, "With the development of the PPI Blockers Discovery Platform to predict peptide blockers for protein-protein interaction, and the availability of our previously announced DAC Blockers Platform to predict peptides to block intra-protein binding, Compugen now has the capability to design blocking peptides for both of these key biological phenomena. It is anticipated that this approach will be applicable to a wide

range of indications, based on the association of potential target proteins or protein-protein interactions to unmet clinical needs. These two discovery platforms, together with Compugen's ten other discovery platforms, provide unique and powerful capabilities for enhanced product candidate discovery by Compugen and for potential use in additional 'discovery on demand' collaborations."

About Protein – Protein Interactions
Protein-protein interactions are central to many key biological functions and thus are attractive targets for a host of diseases. Therefore, the therapeutic applications of inhibiting protein-protein interactions are potentially wide-ranging. However, most efforts so far to discover molecules that modulate protein-protein interactions have been largely unsuccessful, and researchers have long considered them to be "undruggable".

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 a partner. In 2002, Compugen established an affiliate, Evogene Ltd. (www.evogene.com) (TASE: EVGN), 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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