COMPUGEN LTD
Form 6-K
July 31, 2007

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 2007

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 31, 2007 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: /s/ Ronit Lerner

Title: Chief Financial Officer

Date: July 31, 2007

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Exhibit 1

Compugen Announces Discovery Engine for Identifying Existing Drugs with Predicted New Indications

Nine Therapeutic Candidates Now Undergoing Validation

Tel Aviv, Israel - July 31, 2007 - Compugen Ltd. (NASDAQ: CGEN) announced today the development of a new discovery engine for the identification of existing drug molecules that are predicted to have important therapeutic indications that are currently not known, and the selection of nine product candidates from the initial use of this engine.

The initial use of the discovery engine by Compugen resulted in the identification of over 100 potential new therapeutic products based on new indications for existing drugs. After applying various criteria, including an intensive intellectual property review process, nine new therapeutic candidates with indications that differ substantially from the indications already approved or known for the underlying chemical entities were selected for in vitro and in vivo studies. To date, three of these novel therapeutic candidates have successfully completed in vitro screening and have been advanced to in vivo studies.

The tremendous commercial and medical value in finding new indications for existing drugs has been well recognized by the industry for many years. One very important advantage of this approach is that it may be possible to advance from demonstration of efficacy in vivo directly to Phase II clinical trials, since in many cases safety will have already been established. For this reason, a number of companies have been very active in this area.

Compugen`s new discovery engine analyzes an enormous amount of information and raw data from many different experimental and drug and disease specific sources, including gene expression from tens of thousands of human chip experiments, known or predicted protein networks, gene regulation data, known or predicted associations between genes and pathologies and other experimental results. This new engine allows the integrated analysis of this plethora of information utilizing one comprehensive computational biology platform, thus allowing the linking of experimental results and other data and knowledge from a great many disease areas.

Product discovery efforts by others in this area have focused on "drug repositioning", that is, attempts to find a possible new indication for a specific drug. This usually involves some form of high throughput experimentation whereby the drug of interest is screened in a variety of different disease and/or tissue conditions. In comparison, the Compugen *in silico* discovery platform described above is designed to lead to the identification of those drugs predicted to have new indications from amongst all available drugs either in commercial use or undergoing clinical trials.

When desired, the Compugen approach could be directed to find new uses for specific drugs. However, when focusing the discovery efforts on one specific drug as in traditional drug repositioning, it is of course extremely unlikely that this drug of interest will provide the best - or even an acceptable - new medical and commercial opportunity - compared with the likelihood of such an outcome when considering new indications for any existing drug. In addition, if a new

potential indication is identified for the drug of interest in drug repositioning, there is no reason to expect that this specific drug will be the best available drug for that new indication.

Compugen`s new discovery engine is based in large part on a recently developed computational biology platform, called MED, which allows the integration and subsequent querying of data of multiple types and sources. Now that this platform is available, the plan is to continue to update it with new data as it becomes available, and then to continue to repeat new indications discovery runs with the enhanced engine. In addition, this very powerful and unique platform is currently being utilized in certain other engine development programs at Compugen.

"As with our other programs and discovery engines - for example our recently announced engine for discovering therapeutic candidates for modulating GPCR`s - this new therapeutics discovery engine replaces a largely experimental discovery process with a process consisting of *in silico* prediction followed by experimental validation," said Yossi Cohen, M.D., Compugen`s Vice President of Research and Development. "By doing this, we have once again shown the ability to develop platforms which make important diagnostic and therapeutic discoveries - in this case existing drugs that are likely to have novel indications - through a systematic and hypothesis driven process, which I expect to get better and better with time," Dr. Cohen concluded.

About Compugen

Compugen`s mission is to be the world leader in the discovery and licensing of product candidates to the drug and diagnostic industry. The Company`s powerful discovery engines enable the predictive discovery of numerous potential therapeutics and diagnostic biomarkers. This capability results from the Company`s decade-long pioneering efforts in the deeper understanding of important biological phenomena at the molecular level through the incorporation of ideas and methods from mathematics, computer science and physics into biology, chemistry and medicine. To date, Compugen`s diagnostic and therapeutic product discovery efforts and its initial discovery engines have focused mainly within the areas of cancer, immune-related and cardiovascular diseases. The Company's primary commercialization pathway for its product candidates is to enter into milestone and revenue sharing out-licensing and joint development agreements with leading therapeutic and diagnostic companies. Compugen has established an agricultural biotechnology affiliate - Evogene, and a small-molecule drug discovery affiliate - Keddem Bioscience. 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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