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 2008

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 16, 2008 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 16, 2008

Exhibit 1

For Release

Compugen Planning Proof of Concept Human Trial for Breast Cancer Drug Candidate in 2009

New indication for known CNS Drug initially predicted by Discovery Platform

Tel Aviv, Israel, July 16, 2008 – Compugen Ltd. (NASDAQ: CGEN) announced today that it has begun the planning for a proof of concept human trial for breast cancer therapy in 2009 for CGEN-50001, a known central nervous system ("CNS") drug. In recently completed *in vitro* and *in vivo* validation studies, co-administration of CGEN-50001 was shown to significantly increase the effect of Tamoxifen, a frequently used drug for the treatment of estrogen receptor (ER) positive breast cancer. This previously unknown action of CGEN-5001 was initially predicted *in silico* by Compugen's New Indications Discovery Platform. Compugen has filed a patent for this usage.

In an accepted xenograft mice model of breast cancer, a greater reduction in tumor size was demonstrated when Tamoxifen was used in combination with CGEN-50001, in comparison with Tamoxifen alone. In addition, CGEN-50001 appeared to induce cancer cell death and an anti-proliferative effect in ER positive and negative breast cancer cell-lines with a greater effect on ER positive breast cancer cells. Although these validation studies were performed only with Tamoxifen, the same results have been predicted to likely occur with other drugs impacting the same pathway.

CGEN-50001 is a small molecule drug which has been used in the clinic for many years for CNS related indications and has a well established safety profile. In Compugen's initial usage of its previously announced New Indications Discovery Platform, it was predicted that CGEN-50001 would likely strengthen the effect of anti-breast cancer drugs which target the estrogen receptor, such as Tamoxifen.

Yossi Cohen, M.D., Vice President for R&D, said, "Breast cancer is by far the most common cancer amongst women and therefore has been for many years the target of extensive research. The idea that an existing drug now used for completely unrelated medical conditions might prove of significant benefit for some types or stages of breast cancer is of course extremely exciting. In addition, the results to date for CGEN-50001 further validate the predictive power of our New Indications Discovery Platform which enables linking new therapeutic applications for drugs in the market or in development. We are currently evaluating moving forward with validation studies for additional drugs with potential new indications as predicted by this powerful discovery platform."

Martin Gerstel, Chairman of Compugen, stated, "The wide diversity and growing validation of our initial drug and diagnostic discovery platforms continue to demonstrate the value of Compugen's decade long commitment to pioneering predictive understandings of life at the molecular level. Based on the capabilities resulting from this commitment - in terms of deeper scientific understandings and predictive models, algorithms and other computational biology tools, and a truly unique R&D team - these platforms are now resulting in a rapidly increasing intellectual property portfolio of drug and diagnostic product candidates."

About Compugen's New Indications Discovery Platform

This recently disclosed discovery platform relies on Compugen's MED infrastructure platform and other in-silico discovery algorithms. The platform enables the integration and subsequent querying of data of multiple types and sources and is designed to lead to the *in silico* identification of those drugs predicted to have new indications from amongst all available drugs either in commercial use or undergoing clinical trials. Included in this integrated analysis are large amounts of experimental information and raw data from multiple gene, protein, drug and disease related sources. These include 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.

About Compugen

Compugen's mission is to be the world leader in the discovery and licensing of product candidates to the drug and diagnostic industries under milestone and revenue sharing agreements. The Company's increasing inventory of powerful and proprietary discovery platforms is enabling the predictive discovery, field after field, of numerous therapeutic and diagnostic product candidates. These discovery platforms are based on the Company's decade-long focus on the predictive understanding of important biological phenomena at the molecular level. Compugen's current collaborations include Biosite, Medarex, Inc., Merck & Co., Inc., Ortho-Clinical Diagnostics (a Johnson & Johnson company), Roche, Siemens Healthcare Diagnostics, Inc., and Teva Pharmaceutical Industries. In 2002, Compugen established an affiliate, Evogene Ltd. (TASE: EVGN.TA), to utilize the Company's *in-silico* predictive discovery capabilities in the agricultural biotechnology field. For additional information, please visit Compugen's corporate Website at www.cgen.com and Evogene's corporate Website at www.evogene.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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