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 November 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 November 9, 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 Axselbrad
Title: Chief Financial Officer
Date: November 9, 2009

Compugen Announces Discovery of Genetic Biomarker for Predisposition to Type 2 Diabetes

Biomarker discovered using Compugen's GeneVa® Platform

Tel Aviv, Israel, November 9, 2009 --- Compugen Ltd. (NASDAQ: CGEN) announced today the discovery and experimental confirmation of a genetic biomarker, CGEN-40001 for predisposition to type 2 diabetes, the most common form of diabetes. This new biomarker was discovered using Compugen's GeneVa® platform, which consists of an *in silico* database of approximately 350,000 predicted genetic variations in the human genome, with each predicted variation consisting of multiple consecutive nucleotides.

Predisposition markers are of particular value in diseases like type 2 diabetes, where specific lifestyle and health factors are known to play an important role. Following diagnosis, high-risk patients may benefit from more aggressive management either through lifestyle modification or drug treatment. There are an estimated 24 million people in the U.S. with diabetes, 90% of whom are affected by type 2 diabetes. During the past few years, extensive efforts by others searching for genetic markers for type 2 diabetes have utilized numerous genome-wide association studies, involving thousands of patients globally. Several validated genetic markers have been found; however, combining all the discovered biomarkers still explains only a small fraction of the heritability of the disease, so the need for additional markers continues to exist.

From the approximately 350,000 multiple nucleotide genetic variations predicted by the GeneVa® platform, a very small set of variations was selected as being potentially related to type 2 diabetes in Caucasians. This very small set, consisting of only 135 variations, was then tested in a genotyping experiment. In this study, CGEN-40001, a novel 15bp insertion in PFKP (a key regulatory enzyme in glycolysis), demonstrated the predicted correlation with type 2 diabetes in Caucasians. This correlation was then validated in a second study based on an independent set of samples. According to the two studies performed by Compugen, approximately 15% of the Caucasian population has at least one copy of this insertion. Furthermore, the studies showed that the presence of this insertion increases the risk of type 2 diabetes by 50-80%.

About Type 2 Diabetes

Diabetes mellitus type 2 is a chronic, life-long disorder that is characterized by high blood glucose in the context of insulin resistance and relative insulin deficiency. When glucose builds up in the blood rather than being absorbed into cells, it can lead to diabetic complications. Over time, diabetes can lead to blindness, kidney failure and nerve damage. Diabetes is also an important factor in accelerating the hardening and narrowing of arteries (atherosclerosis), which generally leads to strokes, coronary heart disease and other large blood vessel diseases. If left uncontrolled, the consequences can be life-threatening. However, type 2 diabetes is manageable and can be prevented. "First-line" treatment consists of diet, weight control and physical activity.

At present, an estimated 8% of the U.S. population suffers from diabetes, 90% of whom are affected by type 2 diabetes. Moreover, prevalence rates in the U.S. have more than doubled since 1990, leading the U.S. Center for Disease Control to characterize this continuing increase as an epidemic. Worldwide, more than 150 million people are estimated to have this disorder; this number is expected to double by 2025.

About Compugen's GeneVa® Platform
Compugen's GeneVa® platform incorporates an *in silico* database of approximately 350,000 predicted human genetic variations. Each of these predicted variations consists of multiple consecutive nucleotides (in general varying between 2 and 500 nucleotides) and can be in the form of insertions, deletions and/or copy-number variations in the genome. Thus, these GeneVa® variations are much larger than the more commonly known SNP's (Single Nucleotide Polymorphisms), millions of which are known to occur in the human genome, and with each SNP involving a change in only one nucleotide. It is generally believed that larger variations should have a more significant impact.

GeneVa® utilizes special purpose algorithms and other computational biology tools to select from the large database of genetic variations those variations that are predicted to be associated with the specific clinical phenotypes of interest, such as response or non-response to a specified drug of interest, or predisposition to a specified disease. Another key feature of the platform is a proprietary genotyping capability that allows the testing of multiple genetic variations on hundreds of DNA samples in a precise and cost-effective manner.

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 current 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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