

**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 June 2011

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 June 21, 2011, 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: June 21, 2011



## **Compugen Announces Initial Validation of Additional B7/CD28 Protein Family Based Product Candidate**

***CGEN-15021 based on one of nine B7/CD28 family members identified through use of Compugen's Protein Family Members Discovery Platform***

***B7/CD28 Protein family members play key roles in regulating immune response and have significant therapeutic potential in autoimmune diseases and cancer***

Tel Aviv, Israel, June 21, 2011 --- Compugen Ltd. ([NASDAQ: CGEN](#)) announced today *in vitro* validation of a second product candidate based on Compugen-discovered novel members of the B7/CD28 co-stimulatory protein family. Proteins belonging to the B7/CD28 family are of high industry interest in view of their key roles in regulating immune response and are viewed as having significant therapeutic potential in multiple areas of important medical need, including autoimmune diseases, transplantation and cancer.

Last year, Compugen disclosed its Protein Family Members Discovery Platform, which relies on Compugen's LEADS and MED infrastructure platforms and other specialized algorithms for the discovery of novel protein members belonging to various clinically important protein families. The initial prediction and selection activities of this platform have focused on immune related protein families for which additional members are difficult to discover using traditional discovery methods. Analysis of the *in silico* results from these activities with respect to the B7/CD28 protein family have to date resulted in the identification of nine molecules predicted to be previously unknown members of this intensely and widely studied protein family.

The successful *in vitro* validation and disclosure of CGEN-15021 follows the previously announced CGEN-15001, which was the first product candidate based on a Compugen-discovered novel B7/CD28 family member to undergo extensive validation activities. CGEN-15001 has already demonstrated its therapeutic potential for treatment of multiple sclerosis and rheumatoid arthritis in numerous *in vivo* studies. Compugen continues to move forward with the development of CGEN-15001 in its Pipeline Program, and is also in discussions with possible partners for its commercialization.

Both CGEN-15021 and CGEN-15001 are fusion proteins, each comprised of the extracellular region of a Compugen-discovered B7/CD28 protein fused to an Fc, an antibody fragment often used to create soluble therapeutic proteins. Both of these product candidates have demonstrated, as predicted, inhibition of T cell activation, suggesting significant therapeutic potential in the modulation of autoimmune diseases. Furthermore, CGEN-15021T and CGEN-15001T, the two novel B7/CD28 family membrane proteins that these product candidates are based on, are predicted to be over-expressed in solid cancers, suggesting their potential utility as targets for oncology, in addition to the use of their respective fusion proteins in autoimmune diseases.

The validation of CGEN-15021, the new Fc-fused protein product candidate, was performed in Prof. Stephen Miller's laboratory at Northwestern University, as was CGEN-15001. These activities, including further studies on CGEN-15001 and the evaluation of the other Compugen-discovered B7/CD28 protein family members, are being performed under an expanded agreement with Prof. Miller and Northwestern University.

Dr. Zurit Levine, Compugen's VP of R&D, stated, "We are extremely pleased to report the validation of another novel member of this widely studied protein family, which is of substantial interest to the industry for the development of new therapies for autoimmune and inflammatory diseases, as well as cancer. This finding, and the industry interest being shown with respect to CGEN-15001, confirms our Protein Family Members Discovery Platform as an important addition to our broadly applicable predictive discovery infrastructure, and the potential value of its initial discoveries.

### **About the B7/CD28 Protein Family of positive and negative co-stimulatory proteins**

Members of the B7/CD28 families have been intensively studied over the past decade and have brought much excitement to the field of immune regulation. The activation and development of an adaptive immune response is initiated by the engagement of a T-cell antigen receptor with an antigenic peptide-MHC complex. The outcome of this engagement is determined by both positive and negative co-stimulatory signals, generated mainly by the interaction between members of the B7 family ligands and their receptors, mainly members of the CD28 family. A growing body of evidence indicates that the dysfunction of immune regulation contributes to the development of autoimmune diseases.

Positive and negative co-stimulatory pathways play critical roles in immune regulation and are considered potential targets for modulating chronic inflammation in autoimmune diseases. To date, one soluble recombinant fusion protein that selectively blocks the co-stimulatory signal mediated by the prototype B7/CD28 pathway has been cleared for marketing in the U.S. for the treatment of moderate to severe rheumatoid arthritis, and is in clinical trials for other autoimmune indications. In addition, a number of clinical and preclinical studies for therapeutic agents targeting these protein families are underway at various companies.

### **About Compugen**

Compugen is a leading drug and diagnostic product candidate discovery company, currently focused on biologics based therapy in the fields of immunology and oncology. 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. In 2002, Compugen established an affiliate, Evogene Ltd. ([www.evogene.com](http://www.evogene.com)) ([TASE:EVGN.TA](http://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](http://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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