UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16
UNDER THE SECURITIES EXCHANGE ACT OF 1934

For the month of September 2018

Commission File Number 000-30902

COMPUGEN LTD.

(Translation of registrant's name into English)

26 Harokmim Street
Holon 5885849, Israel
(Address of Principal Executive Offices)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-For Form 40-F:

Form 20-F ☑ Form 40-F ☐

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1): ☐

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7): ☐

Compugen Ltd.

On September 20, 2018, Compugen Ltd. (the "**Company**") issued a press release, attached hereto as Exhibit 99.1 to this Form 6-K and incorporated by reference herein.

The information contained in this Report on Form 6-K is hereby incorporated by reference into the Company's Registration Statement on Form F-3, File No. 333-213007.

Exhibits

Exhibit Number	**Description of Exhibit**
99.1	Press Release dated September 20, 2018 – "Compugen Announces Clinical Milestone Payment in Cancer Immunotherapy Collaboration with Bayer Following Dosing of First Patient in BAY 1905254 Phase 1 Trial."

Signatures

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.

Date: September 20, 2018

By: /s/ Donna Gershowitz
Donna Gershowitz
General Counsel

Exhibit 99.1

FOR IMMEDIATE RELEASE

Compugen Announces Clinical Milestone Payment in Cancer Immunotherapy Collaboration with Bayer Following Dosing of First Patient in BAY 1905254 Phase 1 Trial

Compugen entitled to $7.8 million milestone payment

HOLON, ISRAEL – September 20, 2018 – Compugen Ltd. (Nasdaq: CGEN), a clinical-stage cancer immunotherapy company and leader in predictive target discovery, was informed that Bayer AG dosed the first patient in the Phase 1 clinical trial of BAY 1905254, a first-in-class immuno-oncology therapeutic antibody targeting the ILDR2 protein, in patients with advanced solid tumors. Under the terms of the collaboration and license agreement, Compugen is entitled to a milestone payment of $7.8 million at first patient dosing. ILDR2 is a new immune checkpoint protein identified by Compugen using its predictive target discovery platform.

"ILDR2 was one of the first immune checkpoint targets discovered through our discovery platforms and the first to enter into a R&D collaboration and license agreement with a pharma partner," stated Anat Cohen-Dayag, PhD, President and CEO of Compugen. "Bayer has been an outstanding partner and we greatly appreciate their excellent R&D team and commitment to advancing this program to the clinic."

"BAY 1905254 and our internally-developed COM701 are the first drug candidates to enter Phase 1 trials addressing new drug targets discovered computationally by Compugen. This represents a breakthrough achievement for Compugen and proof-of-concept of the power of our computational discovery capabilities. We hope that each of these drug candidates will become a life changing treatment option for patients unresponsive to existing cancer immunotherapies," Dr. Cohen-Dayag added.

About ILDR2 and BAY 1905254

ILDR2 is a novel B7/CD28-like immune checkpoint target discovered computationally by Compugen. Preclinical studies demonstrated inhibitory effects of ILDR2 on T cells, consistent with it being an immune checkpoint ligand. Additional expression and functional studies suggest that ILDR2 acts as an inhibitor of the priming step of T cell activation, thereby muting T cell response to cancer.

BAY 1905254 is a fully human antibody that blocks the immunosuppressive activity of ILDR2. BAY 1905254 exhibits anti-tumor activity as a monotherapy in various mouse models, and also demonstrates additive anti-tumor effects in combination with other cancer therapy approaches in those models, indicating the possibility for multiple combination uses in cancer immunotherapy.

About Compugen

Compugen is a clinical-stage, therapeutic discovery and development company utilizing its broadly applicable predictive discovery infrastructure to identify novel drug targets and develop first-in-class therapeutics in the field of cancer immunotherapy. The Company's therapeutic pipeline consists of immuno-oncology programs against novel drug targets it has discovered, including T cell immune checkpoints and myeloid target programs. Compugen's business model is to selectively enter into collaborations for its novel targets and related drug product candidates at various stages of research and development. The Company is headquartered in Israel with R&D facilities in both Israel and South San Francisco, CA. Compugen's ordinary shares are listed on Nasdaq and the Tel Aviv Stock Exchange under the ticker symbol CGEN. For additional information, please visit Compugen's corporate website at www.cgen.com.

Forward-Looking Statement

This press release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by the use of terminology such as "will," "may," "expects," "anticipates," "believes," "potential," "plan," "goal," "estimate," "likely," "should," "confident," and "intends," and describe opinions about possible 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. Among these risks: Compugen's business model is substantially dependent on entering into collaboration agreements with third parties and Compugen may not be successful in generating adequate revenues or commercializing aspects of its business model. Moreover, the development and commercialization of therapeutic candidates involve many inherent risks, including failure to progress to clinical trials or, if they progress to or enter clinical trials, failure to receive regulatory approval. These and other factors, including the ability to finance the Company, are more fully discussed in the "Risk Factors" section of Compugen's most recent Annual Report on Form 20-F as filed with the Securities and Exchange Commission (SEC) as well as other documents that may be subsequently filed by Compugen from time to time with the SEC. In addition, any forward-looking statements represent Compugen's views only as of the date of this release and should not be relied upon as representing its views as of any subsequent date. Compugen does not assume any obligation to update any forward-looking statements unless required by law.

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