
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 OF
THE SECURITIES EXCHANGE ACT OF 1934**

For the month of **October 2021**

Commission File Number: **001-36187**

EVOGENE LTD.

(Translation of Registrant's Name into English)

**13 Gad Feinstein Street, Park Rehovot, Rehovot
P.O.B 4173, Ness Ziona, 7414002, Israel**
(Address of principal executive offices)

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

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On October 27, 2021, Evogene Ltd., or Evogene, announced the signing of a clinical trial agreement between its subsidiary Biomica Ltd., or Biomica, and Rambam Health Care Campus, or Rambam, for initiating a first in-human proof-of-concept study of Biomica's microbiome-based immuno-oncology drug. A copy of the press release is furnished as Exhibit 99.1 to this Report of Foreign Private Issuer on Form 6-K, or this Form 6-K, and is incorporated herein by reference.

The contents of Exhibit 99.1 to this Form 6-K, excluding the statements of Biomica's CEO and Rambam's Head of Phase 1 Clinical Trials contained therein, are incorporated by reference into the registration statements on Form F-3 (File No. 333-253300) and on Form S-8 (File Nos. 333-193788, 333-201443, 333-203856 and 333-259215) of Evogene, filed with the Securities and Exchange Commission, to be a part thereof from the date on which this report is submitted, to the extent not superseded by documents or reports subsequently filed or furnished.

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.

EVOGENE LTD.
(Registrant)

By: /s/ Dorit Kreiner

Dorit Kreiner
Chief Financial Officer

Date: October 27, 2021

EXHIBIT INDEX

EXHIBIT NO.

DESCRIPTION

[99.1](#)

[Press Release: Biomica & Rambam Health Care Campus Sign Agreement for Clinical Trial of Biomica's Microbiome-Based Immuno-Oncology Drug.](#)



**Biomica & Rambam Health Care Campus Sign Agreement for
Clinical Trial of Biomica's Microbiome-Based Immuno-Oncology Drug**

Biomica expects to initiate first-in-human, proof-of-concept study later this year

Rehovot & Haifa, Israel – October 27, 2021 – Biomica Ltd., an emerging biopharmaceutical company developing innovative microbiome-based therapeutics and a subsidiary of Evogene Ltd. (NASDAQ: EVGN, TASE: EVGN), and Rambam Health Care Campus today announced the signing of a clinical trial agreement (CTA) for initiating a first in-human proof-of-concept (POC) for BMC128, Biomica's drug candidate.

The study is titled, "A Phase 1, Open-Label Study to Evaluate the Safety and Tolerability of BMC128 in Combination with anti-PD-1 in Patients with Non-small Cell Lung Cancer (NSCLC), Melanoma or Renal Cell Carcinoma (RCC)." The study is designed primarily to evaluate the safety and tolerability of Biomica's microbiome-based immuno-oncology drug candidate, BMC128, in combination with immune checkpoint inhibitor (ICI) immunotherapy (an anti PD-1 agent).

The initiation of this study is pending approval by the Israeli Ministry of Health (MoH).

Dr. Elran Haber, CEO of Biomica, stated: "We are very excited to work with one of Israel's leading healthcare institutions, the Rambam Health Care Campus, and we look forward to initiating our first in-human POC study for BMC128, for the treatment of refractory cancer patients. Based on the compelling preclinical results achieved to-date, we are thrilled to take this next step in advancing BMC128 through the clinical development process. We hope that this important collaboration will be followed by further partnerships with additional leading medical institutions."

Dr. Ruth Perets, Head of Rambam's Oncology Phase 1 Clinical Trials, stated: "We are thrilled to lead this clinical trial, aiming to target the important issue of ICI resistance. ICIs have revolutionized the field of oncology, providing prolonged survival in many malignancies. However, resistance to ICI eventually occurs in most patients, and evidence suggests that the gut microbiota plays a role in ICI resistance. We are excited to test the ability of BMC128 to overcome ICI resistance and help provide patients meaningful and long responses to treatment."

As previously reported, treatment with BMC128 in combination with ICI immunotherapy, significantly enhanced anti-tumor activity in various preclinical models. This resulted in an increased response of tumors to anti-PD1, as demonstrated in an improved Objective Response Rate (ORR) and Percent Tumor Growth Inhibition (%TGI). Response to BMC128 was correlated with a desired anti-tumor immunological profile. BMC128 changed the course of response to ICI, leading to stimulation of the immune system which shifted cold-tumors into hot-tumors.

Biomica’s immuno-oncology program is based on the premise that the gut microbiome affects the efficacy of cancer immunotherapy, specifically that of the ICI involving the blockade of PD-1 or PD-L1 and CTLA-4 as suggested in scientific literature^{1,2}. Fecal microbial transplantation has been recently reported to increase response in patients resistant to immune-checkpoint therapy^{3,4}. However, the specific microbial entities driving this response are currently unknown.

BMC128 is a rationally designed microbial consortium identified and selected through a detailed functional microbiome analysis using *PRISM*, a proprietary high-resolution microbiome analysis platform powered by Evogene’s *MicroBoost AI* platform.

About BMC128:

Developed as a Live Bacterial Product (LBP), BMC128 is a rationally-designed LBP consortium comprised of four unique bacterial strains, natural inhabitants of the human intestinal tract, that harbor specific functional capabilities with the potential to enhance immunological therapeutic responses and facilitate anti-tumor immune activity through multiple biological processes.

Rationally-designed consortia are multi-strain products designed to restore diversity and specific functionality to a host’s microbial community with individually selected, cultured bacteria.

¹ Zitvogel et al. 2018, Science 359 (6382)
² Thompson J, et al. Microbiome & immunotherapy: Antibiotic use is associated with inferior survival for lung cancer patients receiving PD-1 inhibitors. J Thorac Oncol 12(suppl 2):S1998, 2017
³ Baruch E, et al. 2021. Fecal microbiota transplant promotes response in immunotherapy-refractory melanoma patients. Science, 371 (6529)
⁴ Davar D, et al. 2021. Fecal microbiota transplant overcomes resistance to anti-PD-1 therapy in melanoma patients. Science, 371 (6529)

About Biomica Ltd.:

Biomica is an emerging biopharmaceutical company developing innovative microbiome-based therapeutics utilizing a dedicated Computational Predictive Biology platform (CPB), licensed from Evogene. Biomica aims to identify and characterize disease-related microbiome entities and to develop novel therapeutics based on these understandings. The company is focused on the development of therapies for antibiotic resistant bacteria, immuno-oncology, and microbiome-related gastrointestinal (GI) disorders. Biomica is a subsidiary of Evogene Ltd. (NASDAQ: EVGN, TASE: EVGN.TA). For more information, please visit www.biomicamed.com.

About Rambam Health Care Campus

Rambam Health Care Campus is a 1,000-bed academic government hospital serving more than two million residents of Northern Israel. Rambam Medical and Research Centers is at the forefront of cutting-edge technologies and innovative translational medical research. The facility has excelled in the development of innovative “bench-to-bedside” solutions in a broad range of medical fields, including cardiovascular devices; orthopedic, surgical, ophthalmic, and endoscopic tools; genetic breakthrough technologies; stem cell technologies; precision personalized medicine; and much more. Rambam has established itself as a pioneering force in the growing field of Big Data for medical applications—both in terms of data collection and data analysis—and was one of four hospitals chosen by Israel’s Ministry of Health to establish a national biobank system to facilitate clinical cancer research. Rambam is collaborating with fellow scientists at the Technion-Israel Institute of Technology – with which Rambam is affiliated, and many universities and medical centers worldwide, including John Hopkins Medical Center, Beth Israel Harvard Deaconess Hospital, Sloan Kettering and Stanford University. For more information, please visit <https://www.rambam.org.il>

About Evogene Ltd.:

Evogene (NASDAQ: EVGN, TASE: EVGN.TA) is a leading computational biology company focused on revolutionizing product discovery and development in multiple life-science based industries, including human health and agriculture, through the use of our broadly applicable Computational Predictive Biology (CPB) platform. The CPB platform, incorporating a deep understanding of biology leveraged through the power of Big Data and Artificial Intelligence, has been designed to computationally discover and uniquely guide the development of life-science products based on microbes, small molecules and genetic elements. Utilizing the CPB platform, Evogene and its subsidiaries are now advancing product pipelines for human microbiome-based therapeutics through Biomica Ltd., medical cannabis through Canonic Ltd., ag-biologicals through Lavie Bio Ltd., ag-chemicals through AgPlenus Ltd., and ag-solutions for castor oil production through Casterra Ag Ltd. For more information, please visit www.evogene.com.

Forward Looking Statements

This press release contains "forward-looking statements" relating to future events. These statements may be identified by words such as "may", "could", "expects", "intends", "anticipates", "plans", "believes", "scheduled", "estimates" or words of similar meaning. For example, Biomica and Evogene are using forward-looking statements in this press release when they discuss the performance of a POC clinical trial for Biomica's BMC128 drug candidate, the potential effects and benefits of BMC128 in the treatment of cancer and the potential for Biomica to enter additional partnerships with leading medical institutions. Such statements are based on current expectations, estimates, projections and assumptions, describe opinions about future events, involve certain risks and uncertainties which are difficult to predict and are not guarantees of future performance. Therefore, actual future results, performance or achievements of Evogene and its subsidiaries may differ materially from what is expressed or implied by such forward-looking statements due to a variety of factors, many of which are beyond the control of Evogene and its subsidiaries, including, without limitation, those risk factors contained in Evogene's reports filed with the applicable securities authorities. Evogene and its subsidiaries disclaim any obligation or commitment to update these forward-looking statements to reflect future events or developments or changes in expectations, estimates, projections and assumptions.

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