

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 December 2011

BioLineRx Ltd.

(Translation of Registrant's name into English)

P.O. Box 45158

19 Hartum Street

Jerusalem 91450, 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 whether the registrant by furnishing the information contained in this form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934:

Yes

No

On December 13, 2011, the Registrant will issue the press release which is filed as Exhibit 1 to this Report on Form 6-K. This report on Form 6-K is being incorporated by reference into all effective registration statements filed by us under the Securities Act of 1933.

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.

BioLineRx Ltd.

By: /s/ Philip Serlin
Philip Serlin
Chief Financial and Operating
Officer

Dated: December 12, 2011



BioLineRx to Develop and Commercialize Novel Peptide Drug Candidates Discovered by Compugen

*Framework agreement initiated with three Compugen-discovered peptides
mutually selected for further development by BioLineRx*

Jerusalem and Tel Aviv, Israel - December 13, 2011 – BioLineRx (NASDAQ: BLRX; TASE: BLRX), a biopharmaceutical development company, and Compugen Ltd. (NASDAQ: CGEN), a drug discovery company, announced today that they have entered into a collaboration agreement for the purpose of developing and commercializing mutually selected Compugen-discovered drug candidates for the treatment of various diseases, ranging from acute and chronic inflammatory diseases through cardiac diseases, retinopathy and cancer. According to the agreement, Compugen will provide promising drug candidates, primarily peptides, which were identified using its predictive drug discovery platforms, while BioLineRx will develop these candidates through Phase II clinical trials, with the goal of ultimately licensing them to pharmaceutical companies for advanced clinical development and commercialization.

The collaboration has been initiated with the mutual selection of three Compugen-discovered peptides. Two of the peptides, named CGEN-855 and CGEN-856, have already undergone proof of concept animal studies and will enter BioLineRx's main product pipeline as BL-7060. These peptides will focus on preventing and treating cardiovascular diseases by controlling inflammation and reducing hypertension. The third peptide, CGEN-25017, which has also undergone proof of concept animal studies, will enter BioLineRx's pipeline as BL-8010, and is intended for the treatment of diseases characterized by excessive growth of new blood vessels, such as retinopathy and cancer. In addition, the parties will continue to evaluate other Compugen-discovered drug candidates for development by BioLineRx.

Dr. Kinneret Savitsky, CEO of BioLineRx said, "We are extremely pleased to enter into this strategic partnership with Compugen for the development and commercialization of novel drug candidates. This mutually beneficial agreement is in keeping with our Company strategy of seeking promising therapeutic candidates for our product pipeline and developing them through Phase II clinical trials. We feel that this collaboration is a natural and efficient synergy of the strengths and expertise of each of the two partners, and we are confident that this alliance will prove extremely beneficial to both companies."

Dr. Anat Cohen-Dayag, Compugen's President & CEO, stated, "The new partnership between Compugen and BioLineRx is based on combining certain novel peptides discovered through use of the computational predictive discovery approach and capabilities of Compugen, with the proven drug validation and development skills of BioLineRx. We are very pleased with the establishment of this additional pathway for the development and future licensing at the clinical stage of a number of promising Compugen peptide discoveries for unmet medical needs."

Dr. Cohen-Dayag continued, “Compugen focuses on the discovery and development of novel protein and antibody therapeutics in the fields of oncology and immunology. However, as part of the process of establishing our broadly applicable predictive discovery capabilities, a number of promising potential therapeutic peptides and other potential drug candidates were discovered that are not in these main areas of focus. The goal of this collaboration with BioLineRx and others which have been, or will be, announced, is to advance certain of these promising discoveries, without the need for further Compugen financial resources, but with Compugen sharing in the value created.

About CGEN-855, CGEN-856 and CGEN-25017

CGEN-855 is a novel peptide agonist of the FPRL1 G-protein coupled receptor (GPCR), discovered by Compugen’s GPCR Peptide Ligand Discovery Platform. FPRL1 is expressed by various immune system cells, and its activation promotes resolution of inflammation, leading to pronounced anti-inflammatory activity. Accordingly, CGEN-855 has shown anti-inflammatory activity when tested in animal models of acute inflammation and has exhibited a cardioprotective effect in models of acute myocardial infarction in mice and rats. CGEN-855 was also shown to be beneficial in an animal model of inflammatory bowel disease. These results support the therapeutic potential of CGEN-855 in treatment of acute and chronic inflammation, as well as cardiovascular diseases.

CGEN-856 is a novel ligand of the MAS GPCR receptor, one of the key components of the renin-angiotensin system which controls blood pressure and water balance in the body. This peptide was discovered by Compugen’s GPCR Peptide Ligand Discovery Platform. CGEN-856 induced relaxation of rat and murine aortas, reduced *in vivo* cardiac remodeling induced by isoproterenol or ischemia, and displayed anti-hypertensive effects as well as cardiac and renal anti-fibrotic effects. CGEN-856 may thus be a useful therapeutic agent in conditions such as hypertension, heart failure, cardiac remodeling, myocardial infarction, renal fibrosis and other cardiovascular pathologies.

CGEN-25017 is a novel peptide antagonist of the Angiopoietin/Tie-2 pathway which is crucial for angiogenesis, blood vessel maturation, and vascular endothelium integrity. The peptide has shown positive therapeutic effects in an animal model of retinopathy, a retinal disease which is the leading cause of blindness in the developed world, and is characterized by ocular angiogenesis, i.e. overgrowth of blood vessels in the retina. CGEN-25017, which was initially discovered using Compugen’s Disease-Associated Conformation (DAC) Blockers Discovery Platform, had previously demonstrated significant inhibitory activity in an animal model of retinopathy and in two other models of angiogenesis. Based on its anti-angiogenic properties, CGEN-25017 has potential therapeutic utility for additional diseases involving pathological angiogenesis such as cancer and inflammatory conditions, including psoriasis and rheumatoid arthritis.

About BioLineRx

BioLineRx Ltd. is a publicly-traded biopharmaceutical development company. It is dedicated to building a portfolio of products for unmet medical needs or with advantages over currently available therapies. BioLineRx's current portfolio consists of five clinical stage candidates: BL-1020 for schizophrenia has commenced a Phase II/III study; BL-1040 for prevention of pathological cardiac remodeling following a myocardial infarction has completed a Phase I/II study and has been out-licensed to Ikaria Inc. for a total deal value of \$282.5 million, in addition to sales royalties; BL-5010 for non-surgical removal of skin lesions has completed a Phase I/II study; BL-1021 for neuropathic pain is in Phase I development and BL-7040 for treating Inflammatory Bowel Disease (IBD) has completed Phase I. In addition, BioLineRx has nine products in various pre-clinical development stages for a variety of indications, including central nervous system diseases, oncology, infectious diseases, cardiovascular and autoimmune diseases.

BioLineRx's business model is based on acquiring molecules mainly from biotechnological incubators and academic institutions. The Company performs feasibility assessment studies and development through pre-clinical and clinical stages, with partial funding from the Israeli Government's Office of the Chief Scientist (OCS). The final stage includes partnering with medium and large pharmaceutical companies for advanced clinical development (Phase III) and commercialization. For more information on BioLineRx, please visit www.biolinerx.com.

About Compugen

Compugen is a leading therapeutic product discovery company focused on therapeutic proteins and monoclonal antibodies to address important unmet needs in the fields of immunology and oncology, either for Compugen or its partners. Unlike traditional high throughput trial and error experimental based drug candidate discovery, Compugen's discovery efforts are based on systematic and continuously improving *in silico* (by computer) product candidate prediction and selection followed by experimental validation, with selected product candidates being advanced in its Pipeline Program to the pre-IND stage. Compugen's *in silico* predictive models utilize a broad and continuously growing infrastructure of proprietary scientific understandings and predictive platforms, algorithms, machine learning systems and other computational biology capabilities. The Company's business model primarily involves collaborations covering the further development and commercialization of Compugen-discovered product candidates and various forms of "discovery on demand" arrangements, in both cases providing 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) (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.

Various statements in this release concerning BioLineRx's and Compugen's future expectations, plans and prospects, including without limitation, statements relating to the ability to discover, develop and commercialize novel protein and antibody therapeutics constitute "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 both BioLineRx and 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 more fully discussed in the "Risk Factors" section of BioLineRx's Form 20-F filed with the Securities and Exchange Commission on July 15, 2011, and Compugen's Annual Report on Form 20-F for the year ended December 31, 2010 as filed with the Securities and Exchange Commission. In addition, any forward-looking statements represent BioLineRx's or Compugen's views only as of the date of this release and should not be relied upon as representing their views as of any subsequent date. BioLineRx and Compugen do not assume any obligation to update any forward-looking statements unless required by law.

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