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 November 2017

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BioLineRx Ltd.
(Translation of registrant's name into English)

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2 HaMa'ayan Street
Modi'in 7177871, Israel
(Address of Principal Executive Offices)

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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 November 2, 2017, the registrant will issue the press release which is filed as Exhibit 1 to this Report on Form 6-K.

This Form 6-K, including all exhibits hereto, is hereby incorporated by reference into all effective registration statements filed by the registrant 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 Executive Officer

Dated: November 2, 2017

Exhibit 1

For immediate release

BioLineRx Announces Oral Presentation at ASH of Data Supporting BL-8040 as Robust Mobilizer of Hematopoietic Stem Cells (HSC) Associated with Long-Term Engraftment

- Preclinical data demonstrate that BL-8040 mobilizes a significant number of these HSCs compared to G-CSF, thus potentially improving graft quality -

Tel Aviv , Israel, November 2, 2017 - BioLineRx Ltd. (NASDAQ/TASE:BLRX), a clinical-stage biopharmaceutical company focused on oncology and immunology, disclosed today preclinical data of BL-8040, its lead oncology platform, demonstrating that human CD34+ cells purified from BL-8040-mobilized grafts contain high numbers of a specific type of HSC (CD34+CD38−CD45RA−CD90+ CD49f+) associated with long-term engraftment, compared to cells mobilized by granulocyte colony stimulating factor (G-CSF). The study further showed that BL-8040-mobilized HSCs can successfully engraft the bone marrow and spleen of immunodeficient mice. In addition, a robust long-term engraftment of BL-8040-mobilized human CD34+ cells was seen in these mice. The data will be presented as an oral presentation at the 59th American Society of Hematology (ASH) Annual Meeting and Exhibition in Atlanta, GA, taking place December 9-12, 2017, the premier event in malignant and non-malignant hematology.

HSCs are cells found in the bone marrow, peripheral blood, or umbilical cord blood, that are responsible for generation and replenishment of all blood cell progenitors and eventually mature cells. HSC engraftment is therefore beneficial for a variety of therapeutic purposes, such as transplantation for people with blood or bone marrow cancer, or for the therapy of blood or immune system disorders. The success of long-term HSC engraftment depends largely on the amount and quality of a specific type of HSC (CD34+CD38−CD45RA−CD90+ CD49f+), but these specific cells are rare, making it difficult to collect large numbers of these HSCs.

“HSCs are important for the treatment of various blood cancers, as well as blood and bone marrow pathologies. In addition, the specific subpopulation of HSCs investigated in this study may improve the longevity of stem-cell engraftment. Unfortunately, stem-cell harvesting with current standard of care (G-CSF) generally contains low numbers of these rare cells,” said Philip Serlin, Chief Executive Officer of BioLineRx. “The results of this study, showing the ability of BL-8040, our leading oncology platform, to collect high numbers of these rare HSCs and the potential for long-term engraftment, may be beneficial for a variety of indications including stem cell mobilization and transplantation. We are excited for the potential differentiation relating to these data as we move forward with our phase 3 pivotal study in stem-cell mobilization for autologous bone-marrow transplantation, expected to commence by the end of this year.”

The talk at ASH entitled “The CXCR4 antagonist BL-8040 Induces a Robust Mobilization of CD34+CD38−CD45RA−CD90+ CD49f+ HSCs with Long-Term and Secondary Myeloid and Lymphoid Repopulating Activity” will be delivered by Professor Amnon Peled from the Hadassah Medical Center and Biokine Therapeutics.

About BL-8040

BL-8040 is a short peptide for the treatment of acute myeloid leukemia, solid tumors, and stem cell mobilization. It functions as a high-affinity antagonist for CXCR4, a chemokine receptor that is directly involved in tumor progression, angiogenesis, metastasis and cell survival. CXCR4 is over-expressed in more than 70% of human cancers and its expression often correlates with disease severity. In a number of clinical and pre-clinical studies, BL-8040 has shown robust mobilization of cancer cells from the bone marrow, thereby sensitizing these cells to chemo- and bio-based anti-cancer therapy, as well as a direct anti-cancer effect by inducing cell death (apoptosis). In addition, BL-8040 has also demonstrated robust stem-cell mobilization, including the mobilization of colony-forming cells, T, B and NK cells. BL-8040 was licensed by BioLineRx from Biokine Therapeutics and was previously developed under the name BKT-140.

About BioLineRx

BioLineRx is a clinical-stage biopharmaceutical company focused on oncology and immunology. The Company in-licenses novel compounds, develops them through pre-clinical and/or clinical stages, and then partners with pharmaceutical companies for advanced clinical development and/or commercialization.

BioLineRx’s leading therapeutic candidates are: BL-8040, a cancer therapy platform, which has successfully completed a Phase 2a study for relapsed/refractory AML, is in the midst of a Phase 2b study as an AML consolidation treatment and is expected to initiate a Phase 3 study in stem cell mobilization for autologous transplantation; and AGI-134, an immunotherapy treatment in development for multiple solid tumors, which is expected to initiate a first-in-man study in the first half of 2018. In addition, BioLineRx has a strategic collaboration with Novartis for the co-development of selected Israeli-sourced novel drug candidates; a collaboration agreement with MSD (known as Merck in the US and Canada), on the basis of which the Company has initiated a Phase 2a study in pancreatic cancer using the combination of BL-8040 and Merck’s KEYTRUDA®; and a collaboration agreement with Genentech, a member of the Roche Group, to investigate the combination of BL-8040 and Genentech’s atezolizumab in several Phase 1b/2 studies for multiple solid tumor indications and AML.

For additional information on BioLineRx, please visit the Company's website at www.biolinerx.com, where you can review the Company's SEC filings, press releases, announcements and events. BioLineRx industry updates are also regularly updated on Facebook, Twitter, and LinkedIn.

Various statements in this release concerning BioLineRx's future expectations 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 BioLineRx 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 most recent annual report on Form 20-F filed with the Securities and Exchange Commission on March 23, 2017. In addition, any forward-looking statements represent BioLineRx'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. BioLineRx does not assume any obligation to update any forward-looking statements unless required by law.

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