BioLineRx Announces Abstract on Pilot Study Data from Phase 2 Combination Clinical Trial Evaluating Motixafortide in First-Line Pancreatic Cancer (PDAC) at American Society of Clinical Oncology (ASCO) 2024 Annual Meeting

- New analysis of biopsy samples demonstrated a significant increase in CD8+ T-cell density in tumors from all 11 patients treated -

- 7 of 11 patients in the pilot phase experienced a partial response, with 6 confirmed; 10 of 11 patients experienced disease control -

- Poster Presentation on Saturday, June 1, 2024 in Chicago, Illinois -

TEL AVIV, Israel, May 24, 2024– BioLineRx Ltd. (NASDAQ/TASE: BLRX), a commercial stage biopharmaceutical company pursuing life-changing therapies in oncology and rare diseases, today announced that an abstract including new data from the single-arm pilot phase of the investigator-initiated, randomized CheMo4METPANC Phase 2 combination clinical trial was accepted for presentation at the 2024 American Society of Clinical Oncology (ASCO) Annual Meeting, taking place May 31-June 4, 2024 in Chicago, Illinois. The CheMo4METPANC trial is evaluating the company's CXCR4 inhibitor motixafortide, the PD-1 inhibitor cemiplimab, and standard-of-care chemotherapies gemcitabine and nab-paclitaxel, versus gemcitabine and nab-paclitaxel alone, in first-line pancreatic cancer (PDAC).

Updated results of the pilot study portion of the Phase 2 study include a new analysis of paired pre- and on-treatment biopsy samples that demonstrated an increase in CD8+ T-cell density in tumors from all 11 patients treated with the combination of motixafortide, cemiplimab and standard-of-care chemotherapies gemcitabine and nab-paclitaxel (P = 0.007). As of February 6, 2024, 7 patients achieved partial response (64%), including 6 confirmed partial responses, and 10 patients (91%) had disease control compared to historic partial response and disease control rates of 23% and 48%, respectively, with gemcitabine and nab-paclitaxel. Preliminary median progression-free survival (PFS) was 9.6 months compared to historic median PFS of 5.5 months with gemcitabine and nab-paclitaxel.

"We continue to be encouraged by the data from the pilot phase of this ongoing Phase 2 study, including the initial efficacy results, as well as new findings that the combination therapy including motixafortide demonstrated increased CD8+ T-cell density in the tumors of all patients treated," said Philip Serlin, Chief Executive Officer of BioLineRx Ltd. "The biopsy sample findings continue to confirm immune cell activation and tumor microenvironment modulation observed in previous clinical evaluation. We look forward to our continued collaboration with Columbia University on this clinical research, and to advancing a potential

new therapeutic option for pancreatic cancer, which is urgently needed for this difficult-to-treat disease."

Based on the encouraging results from the pilot phase of the study, the CheMo4METPANC Phase 2 trial was amended to become a randomized study, with planned enrollment increasing from 30 to 108 patients. Sponsored by Columbia University, the trial is the first large, multi-center, randomized study evaluating motixafortide with a PD-1 inhibitor and first-line PDAC chemotherapies.

Poster Presentation at ASCO 2024
McCormick Place, Chicago, Illinois

Poster Session Details

Primary Track: Gastrointestinal Cancer—Gastroesophageal, Pancreatic and Hepatobiliary
Title: CheMo4METPANC: A randomized phase 2 study with combination chemotherapy (gemcitabine and nab-paclitaxel), chemokine (C-X-C) motif receptor 4 inhibitor (motixafortide), and immune checkpoint blockade (cemiplimab) compared to chemotherapy alone in metastatic treatment-naïve pancreatic adenocarcinoma
Presenter: Gulam Abbas Manji, MD, PhD, Columbia University Herbert Irving Comprehensive Cancer Center
Abstract: TPS4208 (see abstract)
Poster # 174a
Date: Saturday, June 1, 2024
Time: 1:30 PM CDT
Location: Hall A

About CheMo4METPANC Phase 2 Clinical Trial
The multi-center CheMo4METPANC Phase 2 clinical trial (ClinicalTrials.gov Identifier: NCT04543071) is a randomized, investigator-initiated clinical trial in first line metastatic pancreatic cancer. Sponsored by Columbia University, and supported equally by BioLineRx and Regeneron, the study is evaluating the combination of CXCR4 inhibitor motixafortide, PD-1 inhibitor cemiplimab, and standard of care chemotherapies gemcitabine and nab-paclitaxel, versus gemcitabine and nab-paclitaxel alone, in 108 patients. The trial's primary endpoint is progression free survival (PFS). Secondary objectives include safety, response rate, disease control rate, duration of clinical benefit and overall survival.

About Pancreatic Cancer
Pancreatic cancer has a low rate of early diagnosis and a poor prognosis. In the United States in 2024, an estimated 66,000 adults will be diagnosed with the disease, which accounts for approximately 3% of all cancers in the U.S. and about 7% of all cancer deaths.[1] Worldwide, an estimated 496,000 people were diagnosed with the disease in 2020. In the U.S., if the cancer is detected at an early stage when surgical removal of the tumor is possible, the 5-year relative survival rate is 44%. About 12% of people are initially diagnosed at this stage. If the cancer has

spread to surrounding tissues or organs, the 5-year relative survival rate is 15%. For the 52% of patients who are initially diagnosed with metastatic cancer, the 5-year relative survival rate is 3%.[2] In particular, hepatic (liver) metastases are a critical risk factor driving poor prognoses for patients with metastatic PDAC. These data highlight the need for the development of new therapeutic options.

About Motixafortide in Cancer Immunotherapy
Motixafortide inhibits CXCR4, a chemokine receptor and a well validated therapeutic target that is over-expressed in many human cancers including pancreatic ductal adenocarcinoma (PDAC). Motixafortide leverages the expression of the CXCR4 receptor on different immune cells and potentiates the immune system against the tumor. Among CXCR4-expressing immune cells, some exhibit anti-tumoral activity, such as effector T cells and some exhibit pro-tumoral activity and support tumor growth. By blocking the CXCR4 receptor, motixafortide was shown in a Phase 2 study in pancreatic cancer patients to enhance anti-tumoral activity and to ameliorate the pro-tumoral activities by modulating the effector/suppressor cell ratio towards a proinflammatory profile.

About BioLineRx
BioLineRx Ltd. (NASDAQ/TASE: BLRX) is a commercial stage biopharmaceutical company pursuing life-changing therapies in oncology and rare diseases. The company's first approved product is APHEXDA® (motixafortide) with an indication in the U.S. for stem cell mobilization for autologous transplantation in multiple myeloma. BioLineRx is advancing a pipeline of investigational medicines for patients with sickle cell disease, pancreatic cancer, and other solid tumors. Headquartered in Israel, and with operations in the U.S., the company is driving innovative therapeutics with end-to-end expertise in development and commercialization, ensuring life-changing discoveries move beyond the bench to the bedside.

Learn more about who we are, what we do, and how we do it at www.biolinerx.com, or on Twitter and LinkedIn.

Forward Looking Statement
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 "anticipates," "believes," "could," "estimates," "expects," "intends," "may," "plans," "potential," "predicts," "projects," "should," "will," and "would," and describe opinions about future events. These include statements regarding management's expectations, beliefs and intentions regarding, among other things, expectations with regard to clinical trials of motixafortide. These forward-looking statements involve known and unknown risks, uncertainties and other factors 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. Factors that could cause BioLineRx's actual results to differ materially from those expressed or implied in such forward-looking statements include, but are not limited to: the initiation, timing, progress and results of BioLineRx's preclinical studies, clinical trials, and other therapeutic candidate

development efforts; BioLineRx's ability to advance its therapeutic candidates into clinical trials or to successfully complete its preclinical studies or clinical trials; whether BioLineRx's collaboration partners will be able to execute on collaboration goals in a timely manner; whether the clinical trial results for APHEXDA will be predictive of real-world results; BioLineRx's receipt of regulatory approvals for its therapeutic candidates, and the timing of other regulatory filings and approvals; the clinical development, commercialization and market acceptance of BioLineRx's therapeutic candidates, including the degree and pace of market uptake of APHEXDA for the mobilization of hematopoietic stem cells for autologous transplantation in multiple myeloma patients; whether access to APHEXDA is achieved in a commercially viable manner and whether APHEXDA receives adequate reimbursement from third-party payors; BioLineRx's ability to establish, operationalize and maintain corporate collaborations; BioLineRx's ability to integrate new therapeutic candidates and new personnel; the interpretation of the properties and characteristics of BioLineRx's therapeutic candidates and of the results obtained with its therapeutic candidates in preclinical studies or clinical trials; the implementation of BioLineRx's business model and strategic plans for its business and therapeutic candidates; the scope of protection BioLineRx is able to establish and maintain for intellectual property rights covering its therapeutic candidates and its ability to operate its business without infringing the intellectual property rights of others; estimates of BioLineRx's expenses, future revenues, capital requirements and its needs for and ability to access sufficient additional financing, including any unexpected costs or delays in the commercial launch of APHEXDA; risks related to changes in healthcare laws, rules and regulations in the United States or elsewhere; competitive companies, technologies and BioLineRx's industry; statements as to the impact of the political and security situation in Israel on BioLineRx's business; and the impact of the COVID-19 pandemic, the Russian invasion of Ukraine, the declared war by Israel against Hamas and the military campaigns against Hamas and other terrorist organizations, which may exacerbate the magnitude of the factors discussed above. 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 26, 2024. 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.

1. American Cancer Society. *Key Statistics for Pancreatic Cancer.* Atlanta, Ga: American Cancer Society; 2024.
2. ASCO Cancer.Net. Cancer.Net Editorial Board Approval March 2023.

CONTACTS:

UNITED STATES
John Lacey, BioLineRx
IR@biolinerx.com

ISRAEL
Moran Meir, LifeSci Advisors, LLC
moran@lifesciadvisors.com