

PROSPECTUS SUPPLEMENT
(to Prospectus dated January 2, 2024)

Up to \$9,145,000 of Common Stock

This prospectus supplement amends and supplements the information in the prospectus, dated January 2, 2024, filed as part of our registration statement on Form S-3, as amended (File No. 333-275935), or the Registration Statement, as supplemented by our prospectus supplements dated January 2, 2024, February 24, 2025, August 13, 2025 and June 16, 2026, or collectively, the Prior Prospectuses, relating to the offering, issuance and sale by us of our shares of common stock, par value \$0.0001 per share, or the Common Stock, from time to time that may be issued and sold under the At The Market Offering Agreement, dated December 7, 2023, or the Sales Agreement, by and between us and H.C. Wainwright & Co., LLC, or Wainwright, as sales agent. Through the date hereof, we have sold an aggregate of \$3,708,127 of shares of our Common Stock through the sales agent under the Sales Agreement and the Prior Prospectuses.

This prospectus supplement should be read in conjunction with the Prior Prospectuses, and is qualified by reference thereto, except to the extent that the information herein amends or supersedes the information contained in the Prior Prospectuses. This prospectus supplement is not complete without, and may only be delivered or utilized in connection with, the Prior Prospectuses, and any future amendments or supplements thereto.

We are filing this prospectus supplement to amend the Prior Prospectuses to update the maximum aggregate offering price of shares of our Common Stock that may be offered and sold under the Registration Statement pursuant to General Instruction I.B.6 of Form S-3. As a result of these limitations and the current public float of our shares of Common Stock and in accordance with the terms of the Sales Agreement, we may offer and sell shares of Common Stock having an aggregate offering price of up to \$9,145,000 from time to time through Wainwright, which does not include the shares of Common Stock having an aggregate sales price of approximately \$3,708,127 that were sold pursuant to the Prior Prospectuses to date. In the event that we may sell additional amounts under the Sales Agreement and in accordance with General Instruction I.B.6, we will file another prospectus supplement prior to making such additional sales.

The aggregate market value of our shares of Common Stock held by non-affiliates pursuant to General Instruction I.B.6 of Form S-3 is \$38,560,317.12, which was calculated based on 24,718,152 shares of Common Stock outstanding held by non-affiliates and at a price of \$1.56 per share of Common Stock, the closing price of our shares of Common Stock on May 28, 2026, a date that is within 60 days of filing this prospectus supplement. We have sold an aggregate of approximately \$3,708,127 of securities pursuant to General Instruction I.B.6 of Form S-3 during the 12-calendar month period that ends on, and includes, the date of this prospectus supplement. As a result of the limitations of General Instruction I.B.6 of Form S-3, and in accordance with the terms of the Sales Agreement, we currently have the capacity to sell shares of our Common Stock under the Sales Agreement having an aggregate offering price of up to \$9,145,000 from time to time through Wainwright.

Our Common Stock is listed on NYSE American under the symbol “PHGE.” On July 27, 2026, the last reported sale price for our Common Stock on NYSE American was \$0.1948 per share.

The validity of the shares being offered hereby will be passed upon by Aboudi Legal Group PLLC, New York, New York. This supersedes the information set forth under the heading “Legal Matters” in the accompanying base prospectus and prospectus supplement dated January 2, 2024.

Investing in our securities involves significant risks. See “Risk Factors” beginning on page 7 of the prospectus supplement dated January 2, 2024, under the heading “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2025, as amended, in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2026, each of which is incorporated by reference into the Prior Prospectuses, together with the risk factors and other information contained in the Current Reports on Form 8-K, including our Current Report on Form 8-K dated May 5, 2026, and other documents that we have filed, or that we file after the date hereof, with the Securities and Exchange Commission and that are incorporated by reference into this prospectus supplement and the Prior Prospectus, for a discussion of the factors you should carefully consider before deciding to purchase our Common Stock.

Neither the Securities and Exchange Commission nor any state or other securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the Prior Prospectuses. Any representation to the contrary is a criminal offense.

H.C. Wainwright & Co.

The date of this prospectus supplement is July 27, 2026.