

PROSPECTUS SUPPLEMENT
(To Prospectus dated May 16, 2025)

Up to \$250,000,000

TYRA

Common Stock

This prospectus supplement is being filed to update, amend and supplement certain information in the sales agreement prospectus filed with the Securities and Exchange Commission (the SEC) on May 8, 2025 and dated May 16, 2025 (the ATM Prospectus), filed as part of our registration statement on Form S-3 (File No. 333-287086). This prospectus supplement should be read in conjunction with the ATM Prospectus. This prospectus supplement is only intended to update, amend and supplement certain information in the ATM Prospectus to the extent set forth herein. Capitalized terms used and not defined herein shall have the meanings ascribed to such terms in the ATM Prospectus. This prospectus supplement is not complete without, and may only be delivered or utilized in connection with, the ATM Prospectus, and any future amendments or supplements thereto.

We previously entered into a sales agreement (the Sales Agreement), dated May 8, 2025, with TD Securities (USA) LLC (TD Cowen) relating to the sale of shares of our common stock, par value \$0.0001 per share, through or to TD Cowen acting as our sales agent or principal. The ATM Prospectus and Sales Agreement covered the offering, issuance and sale by us of up to a maximum aggregate offering price of \$150,000,000 of our common stock. As of the date of this prospectus supplement, we sold an aggregate of \$150,000,000 of shares of our common stock pursuant to the Sales Agreement and the ATM Prospectus, utilizing the full amount then available for issuance. On August 4, 2026, we entered into an amendment to the Sales Agreement (as amended, the Amended Sales Agreement) to increase the maximum aggregate offering price for the shares of our common stock that we may offer and sell under the Amended Sales Agreement from \$150,000,000 to such number as would not, among other limitations, exceed the number or dollar amount of shares registered on an effective registration statement pursuant to which the offering is made and for which we have filed prior to commencing the offering a prospectus or prospectus supplement. Pursuant to the Amended Sales Agreement and, after giving effect to this prospectus supplement, we may offer and sell up to an aggregate offering price of \$250,000,000 of our common stock.

Our common stock is listed on the Nasdaq Global Select Market under the symbol “TYRA”. On August 3, 2026, the last reported sale price of our common stock on the Nasdaq Global Select Market was \$32.04 per share.

Investing in our common stock involves a high degree of risk. Before making an investment decision, please read the information under the heading “Risk Factors” beginning on page 8 of the ATM Prospectus as well as those described in our most recent Annual Report on Form 10-K, any Quarterly Reports on Form 10-Q filed after such Annual Report on Form 10-K and in other information that we file from time to time with the SEC.

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

TD Cowen

The date of this prospectus supplement is August 4, 2026.