

PROSPECTUS SUPPLEMENT NO. 1

# Ensysce<sup>TM</sup> biosciences

This prospectus supplement amends and supplements the prospectus dated August 30, 2022, as supplemented or amended from time to time (the “*Prospectus*”), which forms a part of our Registration Statement on Form S-1 (No. 333-268038). This prospectus supplement is being filed to update and supplement the information in the Prospectus with the information set forth below under “*Amendment to Existing Warrants*.”

The Prospectus and this prospectus supplement relate to the issuance by us of 190,000 shares of our common stock and warrants to purchase 483,333 shares of common stock, at a combined public offering price of \$16.80 per share and accompanying warrant. Each share of our common stock was sold together with a five-year warrant to purchase two shares of our common stock (the “*Investor Warrants*.”). The Investor Warrants have an exercise price of \$16.80 per share and are exercisable upon issuance. The Prospectus also relates to the offering of the shares of common stock issuable upon exercise of the Investor Warrants. Investor Warrants were also issued to purchasers of pre-funded warrants.

On October 28, 2022, we effected a one-for-twenty reverse split of our common stock (the “*2022 Reverse Split*”). On March 31, 2023, we effected a one-for-twelve reverse split of our common stock (the “*2023 Reverse Split*” and together with the 2022 Reverse Split the “*Reverse Splits*”). All share and per share information in this prospectus supplement has been restated retroactively, giving effect to the Reverse Splits for all periods presented.

Our registration of the securities covered by the Prospectus and this prospectus supplement does not mean that either we or the Selling Securityholders will issue, offer or sell, as applicable, any of the securities hereby registered. The Selling Securityholders may offer, sell, or distribute all or a portion of the securities hereby registered publicly or through private transactions at prevailing market prices or at negotiated prices. We will not receive any of the proceeds from such sales of our common stock or warrants by the Selling Securityholders pursuant to the Prospectus and this prospectus supplement, except with respect to amounts received by us upon exercise of the Warrants to the extent such Warrants are exercised for cash. We will bear all costs, expenses and fees in connection with the registration of these securities, including with regard to compliance with state securities or “blue sky” laws. The Selling Securityholders will bear all commissions and discounts, if any, attributable to their sale of shares of our common stock. Most of the Selling Securityholders are subject to lock-up arrangements. See “*Plan of Distribution*” beginning on page 11 of the Prospectus.

You should read the Prospectus, this prospectus supplement and any additional prospectus supplement or amendment carefully before you invest in our securities.

Our common stock is listed on the Nasdaq under the symbol “ENSC” and our Public Warrants are traded on the OTC Pink Open Market under the symbol “ENSCW.” On May 11, 2023, the closing sale price of our common stock as reported on Nasdaq was \$3.20 and the last sale price on that date for our Public Warrants as reported on the OTC Pink Open Market was \$0.0161.

This prospectus supplement updates and supplements the information in the Prospectus and is not complete without, and may not be delivered or utilized except in combination with, the Prospectus, including any amendments or supplements thereto. This prospectus supplement should be read in conjunction with the Prospectus and if there is any inconsistency between the information in the Prospectus and this prospectus supplement, you should rely on the information in this prospectus supplement.

We are an “emerging growth company” as defined in Section 2(a) of the Securities Act of 1933, as amended, and, as such, have elected to comply with certain reduced disclosure and regulatory requirements.

**Our business and investing in our securities involves a high degree of risk. See “*Risk Factors*” beginning on page 4 of the Prospectus and in the other documents that are incorporated by reference in the Prospectus.**

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if the Prospectus or this prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.

**The date of this prospectus supplement is May 12, 2023.**

---

## AMENDMENT TO EXISTING WARRANTS

On May 10, 2023, Ensysce Biosciences, Inc. (the “*Company*” or “*we*”), announced the pricing of a public offering of an aggregate of 1,800,876 shares (the “*Shares*”) of the Common Stock of the Company, par value \$0.0001 per share (the “*Common Stock*”, including pre-funded warrants in lieu thereof), Series A-1 warrants to purchase up to 1,800,876 shares of common stock and Series A-2 warrants to purchase up to 1,800,876 shares of common stock, at a combined public offering price of \$3.887 per share (or pre-funded warrant in lieu thereof) and accompanying warrants. The Series A-1 warrants have an exercise price of \$3.637 per share, are exercisable immediately upon issuance and expire five years from the date of issuance, and the Series A-2 warrants have an exercise price of \$3.637 per share, are exercisable immediately upon issuance and expire eighteen months from the date of issuance.

In connection with the offering, the Company also agreed to amend certain existing warrants to purchase up to an aggregate of 210,085 shares of the Company’s common stock that were previously issued in September 2021 through December 2022 to purchasers in the offering at exercise prices ranging from \$16.80 to \$187.20 per share, such that effective upon the closing of the offering the amended warrants will have a reduced exercise price of \$3.637 per share, at an additional offering price of \$0.125 per amended warrant. One of the purchasers of Investor Warrants through the Prospectus was a purchaser in the May 2023 offering. That purchaser holds warrants to purchase up to 166,667 shares of common stock. As a result, the exercise price of the Investor Warrants held by that purchaser was reduced to \$3.637 per share.

---