

Ensysce™ biosciences

This prospectus supplement amends and supplements the prospectus dated September 27, 2021, as supplemented or amended from time to time (the “*Prospectus*”), which forms a part of our Registration Statement on Form S-1 (No. 333-258609). This prospectus supplement is being filed to update and supplement the information in the Prospectus with the information contained in our Current Report on Form 8-K, filed with the U.S. Securities and Exchange Commission on September 8, 2022 (the “*Current Report*”). Accordingly, we have attached the Current Report to this prospectus supplement.

The Prospectus and this prospectus supplement relate to the issuance by us and the resale by the selling security holders named in the Prospectus (the “*Selling Securityholders*”) of up to an aggregate of 27,132,398 shares of our common stock, par value \$0.0001 per share (“*Common Stock*”), which consists of (i) up to 500,000 shares of common stock that are issuable upon the exercise of 500,000 warrants issued to DelMorgan Group LLC (“*DelMorgan*”) under the terms of the Email Agreement, dated January 31, 2021, among Ensysce Biosciences, Inc. (the “*Company*”) and DelMorgan, as amended by the First Amendment to the Email Agreement, dated June 7, 2021 (the “*Email Agreement*”), (ii) up to an aggregate of approximately 10,000,000 shares of common stock that are issuable upon the exercise of 10,000,000 warrants (the “*Public Warrants*”) issued in connection with the initial public offering of our predecessor company, Leisure Acquisition Corp., a Delaware corporation (“*LACQ*”), (the “*LACQ IPO*”), (iii) up to an aggregate of 6,325,000 shares of common stock that are issuable upon the exercise of 6,325,000 warrants issued in connection with a private placement that closed simultaneously with the consummation of the LACQ IPO (the “*Private Placement Warrants*”), (iv) up to an aggregate of 1,000,001 shares of common stock that are issuable upon the exercise of 1,000,001 warrants issued in exchange for outstanding loans under the Expense Advancement Agreement dated December 1, 2017 among LACQ, Hydra Management, LLC (“*Hydra*”), Matthews Lane Capital Partners LLC (“*MLCP*”) and together with Hydra, the “*Sponsors*”), and HG Vora Capital Management LLC on behalf of one or more funds or accounts managed by it (the “*Strategic Investor*”) (the “*Expense Advancement Agreement*”), (v) up to an aggregate of 566,288 shares of common stock that are issuable upon exercise of 566,288 warrants issued in exchange for previously outstanding loans under the Expense Advancement Agreement dated December 5, 2019 between LACQ and Gateway Holdings Limited, as amended (the “*GTWY Expense Advancement Agreement*”) (collectively with the warrants described in (iv) herein, the “*Other Private Warrants*”), (vi) up to an aggregate of 510,001 shares of common stock that are issuable upon exercise of 510,001 warrants issued at the closing of the business combination (as defined below) in exchange for outstanding loans under the Expense Advancement Agreement, (vii) up to 1,106,108 shares of common stock that are issuable upon exercise of 1,106,108 warrants issued at the closing of the business combination (as defined below) in connection with the GEM Agreement (as defined below) (the “*GEM Warrants*”), (viii) 125,000 shares of common stock issuable in satisfaction of \$2,000,000 of deferred underwriting fees payable to the underwriters, (ix) 500,000 shares of common stock issuable to DelMorgan under the terms of the Email Agreement, (x) 5,000,000 shares of common stock purchased by the Sponsors and Strategic Investor in a private placement prior to the LACQ IPO (the “*founder shares*”), (xi) up to an aggregate of 500,000 shares of common stock issuable to David J. Kovacs and Mercury FundingCo, LLC (David Tanzer, Managing Member) (together, the “*Consultants*”), and (xii) up to 1,000,000 shares of common stock that are issuable upon the exercise of 1,000,000 warrants issued to the Consultants.

On June 30, 2021, we consummated the transactions contemplated by that certain Agreement and Plan of Merger, dated as of January 31, 2021 (the “*Merger Agreement*”), by and among the Company, LACQ and EB Merger Sub, Inc., a Delaware corporation and wholly-owned subsidiary of LACQ (“*Merger Sub*”), with the Company surviving such merger as a wholly-owned subsidiary of LACQ (the “*Merger*”). The Merger, together with the other transactions contemplated by the Merger Agreement and the related agreements, are referred to herein as the “*Transactions*.” In connection with the consummation of the Transactions, LACQ changed its name to “Ensysce Biosciences, Inc.”

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 128 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 listed on the OTC Pink Open Market under the symbol “ENSCW.” On September 8, 2022, the closing sale price of our common stock as reported on Nasdaq was \$0.3310 and the closing sale price for our Public Warrants as reported on the OTC Pink Open Market was \$0.0580.

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 9 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 September 8, 2022.

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 8-K

**CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934**

Date of Report (Date of earliest event reported): September 8, 2022 (September 8, 2022)

Ensysce Biosciences, Inc.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

001-38306
(Commission
File Number)

82-2755287
(I.R.S. Employer
Identification Number)

7946 Ivanhoe Avenue, Suite 201
La Jolla, California
(Address of principal executive offices)

92037
(Zip Code)

(858) 263-4196
Registrant's telephone number, including area code

N/A
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation to the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.0001 per share	ENSC	The Nasdaq Stock Market LLC
Warrants to purchase one share of Common Stock	ENSCW	OTC Pink Open Market

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 5.07 Submission of Matters to a Vote of Security Holders.

(a) A special meeting of stockholders of Ensysce Biosciences, Inc. ("Ensysce" or the "Company") was held on September 8, 2022 (the "Special Meeting").

(b) Three proposals were submitted to a vote of the Company's stockholders with the final voting results set forth below. All three proposals were approved.

1. Proposal to approve, for purposes of complying with Nasdaq Listing Rule 5635(d), the full issuance and exercise of shares of common stock issued by the Company to certain investors:

For	Against	Abstentions	Broker Non-Votes
19,918,808	449,811	21,596	—

2. Proposal to approve an amendment to the Company's Certificate of Incorporation to authorize the Company's Board of Directors to combine outstanding shares of the Company's common stock into a lesser number of outstanding shares, a "Reverse Stock Split," by a ratio of not less than one-for-five and not more than one-for-twenty, with the exact ratio to be set within this range by the Board in its sole discretion, in the form attached to the proxy material provided to stockholders for the Special Meeting:

For	Against	Abstentions	Broker Non-Votes
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19,557,059

819,090

15,066

3. Proposal to approve an amendment to the Company's Certificate of Incorporation to increase the number of authorized shares of common stock (the "Authorized Shares Increase Proposal"):

For	Against	Abstentions	Broker Non-Votes
18,947,325	1,364,891	78,999	—

Item 7.01. Regulation FD Disclosure.

On September 8, 2022, the Company issued a press release announcing the results of the Special Meeting, a copy of which is furnished as Exhibit 99.1 hereto.

The information in Exhibit 99.1 attached hereto shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that Section, or incorporated by reference into any of the Company's filings under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in any such filing.

Item 9.01. Financial Statements and Exhibits

(d) Exhibits

Exhibit No.	Description
99.1	Press Release Announcing Results of the Special Meeting of Stockholders of the Company, dated September 8, 2022
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

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 hereunto duly authorized.

Dated: September 8, 2022

Ensysce Biosciences, Inc.

By: /s/ Lynn Kirkpatrick
 Name: Dr. Lynn Kirkpatrick
 Title: President and Chief Executive Officer

Exhibit 99.1

Ensysce Biosciences Announces Results of Special Meeting of Stockholders

SAN DIEGO, CA, September 8, 2022 — [Ensysce Biosciences, Inc.](#) ("Ensysce" or the "Company") (NASDAQ: ENSC, OTC: ENSCW), a clinical-stage biotech company applying transformative chemistry to improve prescription drug safety to reduce abuse and overdose, today announced the results of the special meeting of stockholders held September 8, 2022. This meeting was held virtually, and the following resolutions were submitted and adopted by the stockholders:

- The approval of, for purposes of complying with Nasdaq Listing Rule 5635(d), the full issuance and exercise of shares of common stock issued by the Company to certain investors.
- The approval of an amendment to our Certificate of Incorporation to authorize the Company's Board of Directors to combine outstanding shares of the Company's common stock into a lesser number of outstanding shares, a "Reverse Stock Split," by a ratio of not less than one-for-five and not more than one-for-twenty, with the exact ratio to be set within this range by the Board in its sole discretion.
- The approval of an amendment to our Certificate of Incorporation to effect an increase in the number of authorized shares of common stock.

About Ensysce Biosciences

Ensysce Biosciences is a clinical-stage biotech company using its proprietary technology platforms to develop safer prescription drugs. Leveraging its Trypsin Activated Abuse Protection (TAAP™) and Multi-Pill Abuse Resistance (MPAR™) platforms, the Company is in the process of developing a unique, tamper-proof treatment option for pain that minimizes the risk of both drug abuse and overdoses. Ensysce's products are anticipated to provide safer options to treat patients suffering from severe pain and assist in preventing deaths caused by medication abuse, reducing the human and economic costs. The platforms are covered by an extensive worldwide intellectual property portfolio for a wide array of prescription drug compositions. For more information, please visit www.ensysce.com.

Forward-Looking Statements

Statements contained in this press release that are not purely historical may be deemed to be forward-looking statements for the purposes of the safe harbor provisions under The Private Securities Litigation Reform Act of 1995 and other federal securities laws. Without limiting the foregoing, the use of words such as "may," "intends," "can," "might," "will," "expect," "plan," "possible" and other similar expressions are intended to identify forward-looking statements. The product candidates discussed are in clinic and not approved and there can be no assurance that the clinical programs will be successful in demonstrating safety and/or efficacy, that Ensysce will not encounter problems or delays in clinical development, or that any product candidate will ever receive regulatory approval or be successfully commercialized. All forward-looking statements are based on estimates and assumptions by Ensysce's management that, although Ensysce believes to be reasonable, are inherently uncertain. All forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those that Ensysce expected. In addition, Ensysce's business is subject to additional risks and uncertainties, including among others, the initiation and conduct of preclinical studies and clinical trials; the timing and availability of data from preclinical studies and clinical trials; expectations for regulatory submissions and approvals; potential safety concerns related to, or efficacy of, Ensysce's product candidates; the availability of

commercial potential of product candidates; the ability of Ensysce to fund its continued operations, including its planned clinical trials; the dilutive effect of stock issuances from our fundraising; and Ensysce's and its partners' ability to perform under their license, collaboration and manufacturing arrangements. These statements are also subject to a number of material risks and uncertainties that are described in Ensysce's most recent quarterly report on Form 10-Q and current reports on Form 8-K, which are available, free of charge, at the SEC's website at www.sec.gov. Any forward-looking statement speaks only as of the date on which it was made. Ensysce undertakes no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required under applicable law.

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Source: Ensysce Biosciences Inc.
