

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 20, 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 19, 2022, the closing sale price of our common stock as reported on Nasdaq was \$0.2740 and the last sale price on that date for our Public Warrants as reported on the OTC Pink Open Market was \$0.05.

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.

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 20, 2022 (September 20, 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

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

Check the appropriate box below if the Form 8-K filing is intended to	o simultaneously satisfy the filing oblig	gation to the registrant under any of the following provisions:
$\hfill \Box$ Written communications pursuant to Rule 425 under the Securiti	ies 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) u	under the Exchange Act (17 CFR 240.	14d-2(b))
$\ \square$ Pre-commencement communications pursuant to Rule 13e-4(c) u	under the Exchange Act (17 CFR 240.1	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 Warrants to purchase one share of Common Stock	ENSC ENSCW	The Nasdaq Stock Market LLC OTC Pink Open Market
Emerging growth company ⊠		
If an emerging growth company, indicate by check mark if the regist accounting standards provided pursuant to Section 13(a) of the Excha		ed transition period for complying with any new or revised financial

Item 1.01. Entry into a Material Definitive Agreement.

As previously reported on Current Reports on Form 8-K filed July 6, 2022 and August 9, 2022, on June 30, 2022, Ensysce Biosciences, Inc. ("Ensysce" or the "Company") entered into a Securities Purchase Agreement (the "SPA") for an aggregate financing of \$8.0 million with institutional investors. At two closings under the SPA, the first occurring on June 30, 2022 and the second occurring on August 8, 2022, the Company issued to the investors (i) senior secured convertible promissory notes in the aggregate principal amount of \$8.48 million for an aggregate purchase price of \$8 million (collectively, the "Notes") and (ii) warrants (collectively, the "Warrants") to purchase 9,335,780 shares of the Company's common stock, par value \$0.0001 per share (the "Common Stock") in the aggregate.

On September 20, 2022, the parties entered into a Letter Agreement (the "Letter Agreement"). Among other matters, the parties to the Letter Agreement reduced the Conversion Price for the remaining balance of the Company's outstanding 2021 Senior Secured Convertible Notes from \$0.35 (reduced on August 8, 2022 from \$0.78 for the period from August 8, 2022 until October 1, 2022) to \$0.23 for the period from September 20, 2022 until September 30, 2022. The 2021 Senior Secured Convertible Notes remain due and payable on October 10, 2022, at which time they must be satisfied with cash.

Additional information about the 2021 Senior Secured Convertible Notes was provided in a Current Report on Form 8-K filed November 10, 2021.

Item 2.03. Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant

The information provided under Item 1.01 in this Current Report on Form 8-K is incorporated by reference into this Item 2.03.

Item 9.01. Financial Statements and Exhibits

(d) Exhibits

Exhibit No. Description

10.6 Letter Agreement dated September 20, 2022, by and among the Company and three other signatories thereto. 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 20, 2022

Ensysce Biosciences, Inc.

By: /s/ Lynn Kirkpatrick Name: Dr. Lynn Kirkpatrick

Title: President and Chief Executive Officer

Exhibit 10.6



September 20, 2022

3i, LP 140 Broadway FL 38 New York, NY 10005

Anson Investments Master Fund LP c/o Anson Advisors Inc. 155 University Ave., Suite 207 Toronto, ON Canada M5H3B7

Anson East Master Fund LP c/o Anson Advisors Inc. 155 University Ave., Suite 207 Toronto, ON Canada M5H3B7

Modification of the Senior Secured Convertible Notes under the 2021 Purchase Agreement and certain other terms Re:

Dear Sirs:

Reference is made to (a) that (i) certain Securities Purchase Agreement (as modified from time to time, the 2021 Purchase Agreement"), dated as of September 24, 2021, between the Company and the purchasers identified therein, which are the same as the three addressees listed above (collectively, the "2021 Investors"), (ii) the Senior Secured Convertible Promissory Notes (as modified from time to time, the "2021 Senior Secured Convertible Notes"), (iii) the Warrants and (iv) the other transaction documents, as modified from time to time, referred to collectively, as the "2021 Transaction Documents") and (b) that (i) certain Securities Purchase Agreement (as modified from time to time, the "2022 Purchase Agreement"), dated as of June 30, 2022, between the Company and the purchasers identified therein, which are the same as the three addressees listed above (collectively, the "2022 Investors"), (ii) the Senior Secured Convertible Promissory Notes (as modified from time to time, the 2022 Senior Secured Convertible Notes"), (iii) the Warrants and (iv) the other transaction documents, as modified from time to time, referred to collectively, as the '2022 Transaction Documents" and together with the 2021 Transaction Documents referred to as the "Transaction Documents")). Capitalized terms used but not defined herein shall have the meanings given to them in the applicable Purchase Agreement, or if not defined therein, in the applicable Notes, or if not defined therein, in the applicable Transaction Document, in each case as of the date hereof.

> Ensysce Biosciences Inc. 7946 Ivanhoe Ave. Ste 201 -La Jolla, CA www.ensysce.com

This letter agreement (this "Letter Agreement") confirms our recent discussions about, among other matters, certain modifications to the 2021 Senior Secured Convertible Notes and the 2022 Purchase Agreement.

- (1) This Letter Agreement shall be deemed to be a 2021 Transaction Document and a 2022 Transaction Document;
- (2) The outstanding balance, if any, on the 2021 Senior Secured Convertible Notes shall become due and payable on October 10, 2022, unless further extended by the Parties, at which time such outstanding balance shall be satisfied in cash.
- (3) The Conversion Price and Floor Price of the 2021 Senior Secured Convertible Notes which remain outstanding as of even date hereof shall be \$0.23, such Conversion Price to become effective as of the date of this Letter Agreement and apply through September 30, 2022;

(4) The reduction in Conversion Price and Floor Price of the 2021 Senior Secured Convertible Notes effected pursuant to this Letter Agreement does not constitute a Dilutive Issuance or require an adjustment of the Floor Price (other than solely to effect paragraph (3)) or Conversion Price under the Transaction Documents.

The Company hereby agrees, for itself and its Subsidiaries, that the Guarantors continue to guaranty, pursuant to the Guaranty, as primary obligor and not as surety, the full and punctual payment when due of the obligations owing under the Notes and the other Transaction Documents as modified hereby (as limited by the original terms of the Guaranty) and that the terms hereof shall not affect in any way their obligations and liabilities, as expressly modified hereby, under the Transaction Documents. The Company, for itself and its Subsidiaries, hereby reaffirms (a) all such obligations and liabilities and agrees that such obligations and liabilities shall remain in full force and effect and (b) the security interests granted under the Transaction Documents and agrees that such security interests shall continue to secure such obligations and liabilities.

This Letter Agreement is a Transaction Document and is limited as written. As of the date first written above, each reference in the Purchase Agreement or any other applicable Transaction Document to "this Agreement," "hereunder," "hereof," "herein," or words of like import, and each reference in the other Transaction Documents to such Purchase Agreement or other Transaction Documents (including, without limitation, by means of words like "thereunder," "thereof" and words of like import), shall refer to the Purchase Agreement as modified thereby, and this Letter Agreement and the Purchase Agreement shall be read together and construed as a single agreement. The execution, delivery and effectiveness of this Letter Agreement shall not, except as expressly provided herein, (A) waive or modify any right, power or remedy under, or any other provision of, any Transaction Document or (B) commit or otherwise obligate any Purchaser to enter into or consider entering into any other amendment, waiver or modification of any Transaction Document.

All communications and notices hereunder shall be given as provided in the Transaction Documents. This Letter Agreement (a) shall be governed by and construed in accordance with the law of the State of Nevada, (b) is for the exclusive benefit of the parties hereto and the other Purchasers and beneficiaries of the Purchaser Agreement and, together with the other Transaction Documents, constitutes the entire agreement of such parties, superseding all prior agreements among them, with respect to the subject matter hereof, (c) may be modified, waived or assigned only in writing and only to the extent such modification, waiver or assignment would be permitted under the Transaction Documents (and any attempt to assign this Letter Agreement without such writing shall be null and void), (d) is a negotiated document, entered into freely among the parties upon advice of their own counsel, and it should not be construed against any of its drafters and (e) shall survive the satisfaction or discharge of the amounts owing under the Transaction Documents. The fact that any term or provision of this Letter Agreement is held invalid, illegal or unenforceable as to any person in any situation in any jurisdiction shall not affect the validity, enforceability or legality of the remaining terms or provisions hereof or the validity, enforceability or such offending term or provision in any other situation or jurisdiction or as applied to any person.

Ensysce Biosciences Inc.

7946 Ivanhoe Ave. Ste 201 - La Jolla, CA - 92037 - www.ensysce.com

This Letter Agreement is expressly conditioned on the Company's Board of Directors approving this Letter Agreement and all undertakings thereto in all respects and providing written evidence of the same to the Investors by September 20, 2022.

Kindly confirm your agreement with the above by signing in the space indicated below and by PDFing a partially executed copy of this letter to the undersigned, and which may be executed in identical counterparts, each of which shall be deemed an original but all of which shall constitute one and the same agreement.

Very truly yours,

ENSYSCE BIOSCIENCES, INC.

By: /s/ Lynn Kirkpatrick

Dr. Lynn Kirkpatrick Chief Executive Officer

AGREED AND ACCEPTED:

3i, LP

By: /s/ Maier Tarlow

Name: Maier Tarlow

Title: Manager On Behalf Of The GP

Anson Investments Master Fund LP

By: /s/ Amin Nathoo

Name: Amin Nathoo

Title: Director, Anson Advisors Inc.

Anson East Master Fund LP

By: /s/ Amin Nathoo

Name: Amin Nathoo

Title: Director, Anson Advisors Inc.