

**SECURITIES AND EXCHANGE COMMISSION**  
**Washington, D.C. 20549**

**SCHEDULE 13G**

**UNDER THE SECURITIES EXCHANGE ACT OF 1934**

(Amendment No. 2)\*

**Ensysce Biosciences, Inc.**

(Name of Issuer)

**Common Stock, par value \$0.0001 per share**

(Title of Class of Securities)

**293602405**

(CUSIP Number)

**12/31/2024**

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)  
 Rule 13d-1(c)  
 Rule 13d-1(d)

**SCHEDULE 13G**

CUSIP No. 293602405

1	<b>Names of Reporting Persons</b> RA Capital Management, L.P.
2	<b>Check the appropriate box if a member of a Group (see instructions)</b> <input type="checkbox"/> (a) <input type="checkbox"/> (b)
3	<b>Sec Use Only</b>
4	<b>Citizenship or Place of Organization</b> DELAWARE

Number of Shares Beneficially Owned by Each Reporting Person With:	5	Sole Voting Power 0.00
	6	Shared Voting Power 0.00
	7	Sole Dispositive Power 0.00
	8	Shared Dispositive Power 0.00
9	Aggregate Amount Beneficially Owned by Each Reporting Person 0.00	
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) <input type="checkbox"/>	
11	Percent of class represented by amount in row (9) 0.0 %	
12	Type of Reporting Person (See Instructions) IA, PN	

SCHEDULE 13G

CUSIP No.	293602405
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1	Names of Reporting Persons Peter Kolchinsky	
2	Check the appropriate box if a member of a Group (see instructions) <input type="checkbox"/> (a) <input type="checkbox"/> (b)	
3	Sec Use Only	
4	Citizenship or Place of Organization UNITED STATES	
Number of Shares Beneficially Owned by Each Reporting Person With:	5	Sole Voting Power 0.00
	6	Shared Voting Power 0.00
	7	Sole Dispositive Power 0.00
	8	Shared Dispositive Power 0.00
9	Aggregate Amount Beneficially Owned by Each Reporting Person 0.00	
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) <input type="checkbox"/>	

11	Percent of class represented by amount in row (9) 0.0 %
12	Type of Reporting Person (See Instructions) HC, IN

SCHEDULE 13G

CUSIP No.	293602405
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1	<b>Names of Reporting Persons</b> Rajeev Shah
2	<b>Check the appropriate box if a member of a Group (see instructions)</b> <input type="checkbox"/> (a) <input type="checkbox"/> (b)
3	<b>Sec Use Only</b>
4	<b>Citizenship or Place of Organization</b> UNITED STATES
Number of Shares Beneficially Owned by Each Reporting Person With:	5 <b>Sole Voting Power</b> 0.00
	6 <b>Shared Voting Power</b> 0.00
	7 <b>Sole Dispositive Power</b> 0.00
	8 <b>Shared Dispositive Power</b> 0.00
9	<b>Aggregate Amount Beneficially Owned by Each Reporting Person</b> 0.00
10	<b>Check box if the aggregate amount in row (9) excludes certain shares (See Instructions)</b> <input type="checkbox"/>
11	<b>Percent of class represented by amount in row (9)</b> 0.0 %
12	<b>Type of Reporting Person (See Instructions)</b> HC, IN

SCHEDULE 13G

CUSIP No.	293602405
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1	<b>Names of Reporting Persons</b> RA Capital Healthcare Fund, L.P.
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2	<p>Check the appropriate box if a member of a Group (see instructions)</p> <input type="checkbox"/> (a) <input type="checkbox"/> (b)								
3	Sec Use Only								
4	<p>Citizenship or Place of Organization</p> <p>DELAWARE</p>								
Number of Shares Beneficially Owned by Each Reporting Person With:	<table border="1"> <tr> <td>5</td> <td> <p>Sole Voting Power</p> <p>0.00</p> </td> </tr> <tr> <td>6</td> <td> <p>Shared Voting Power</p> <p>0.00</p> </td> </tr> <tr> <td>7</td> <td> <p>Sole Dispositive Power</p> <p>0.00</p> </td> </tr> <tr> <td>8</td> <td> <p>Shared Dispositive Power</p> <p>0.00</p> </td> </tr> </table>	5	<p>Sole Voting Power</p> <p>0.00</p>	6	<p>Shared Voting Power</p> <p>0.00</p>	7	<p>Sole Dispositive Power</p> <p>0.00</p>	8	<p>Shared Dispositive Power</p> <p>0.00</p>
	5	<p>Sole Voting Power</p> <p>0.00</p>							
	6	<p>Shared Voting Power</p> <p>0.00</p>							
	7	<p>Sole Dispositive Power</p> <p>0.00</p>							
8	<p>Shared Dispositive Power</p> <p>0.00</p>								
9	<p>Aggregate Amount Beneficially Owned by Each Reporting Person</p> <p>0.00</p>								
10	<p>Check box if the aggregate amount in row (9) excludes certain shares (See Instructions)</p> <input type="checkbox"/>								
11	<p>Percent of class represented by amount in row (9)</p> <p>0.0 %</p>								
12	<p>Type of Reporting Person (See Instructions)</p> <p>PN</p>								

## SCHEDULE 13G

### Item 1.

- (a) **Name of issuer:**  
 Ensysce Biosciences, Inc.
- (b) **Address of issuer's principal executive offices:**  
 7946 Ivanhoe Avenue, , La Jolla, CA, 82-2755287.

### Item 2.

- (a) **Name of person filing:**  
 The names of the persons filing this report (collectively, the "Reporting Persons") are:  
 RA Capital Management, L.P. ("RA Capital")  
 Peter Kolchinsky  
 Rajeev Shah  
 RA Capital Healthcare Fund, L.P. (the "Fund")  
 The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.
- (b) **Address or principal business office or, if none, residence:**  
 The address of the principal business office of each of the Reporting Persons is:  
 c/o RA Capital Management, L.P., 200 Berkeley Street, 18th Floor, Boston MA 02116
- (c) **Citizenship:**  
 RA Capital and the Fund are Delaware limited partnerships.  
 Dr. Kolchinsky and Mr. Shah are United States citizens.

(d) **Title of class of securities:**  
Common Stock, par value \$0.0001 per share

(e) **CUSIP No.:**  
293602405

**Item 3. If this statement is filed pursuant to §§ 240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:**

- (a)  **Broker or dealer registered under section 15 of the Act (15 U.S.C. 78o);**
- (b)  **Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 78c);**
- (c)  **Insurance company as defined in section 3(a)(19) of the Act (15 U.S.C. 78c);**
- (d)  **Investment company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8);**
- (e)  **An investment adviser in accordance with § 240.13d-1(b)(1)(ii)(E);**
- (f)  **An employee benefit plan or endowment fund in accordance with § 240.13d-1(b)(1)(ii)(F);**
- (g)  **A parent holding company or control person in accordance with § 240.13d-1(b)(1)(ii)(G);**
- (h)  **A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);**
- (i)  **A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);**
- (j)  **A non-U.S. institution in accordance with § 240.13d-1(b)(1)(ii)(J). If filing as a non-U.S. institution in accordance with § 240.13d-1(b)(1)(ii)(J), please specify the type of institution:**
- (k)  **Group, in accordance with Rule 240.13d-1(b)(1)(ii)(K).**

**Item 4. Ownership**

(a) **Amount beneficially owned:**

Row 9 of each Reporting Person's cover page to this Schedule 13G sets forth the aggregate number of securities of the Issuer beneficially owned by such Reporting Person as of December 31, 2024 and is incorporated by reference.

(b) **Percent of class:**

Row 11 of each Reporting Person's cover page to this Schedule 13G sets forth the percentages of the securities of the Issuer beneficially owned by such Reporting Person as of December 31, 2024 and is incorporated by reference. %

(c) **Number of shares as to which the person has:**

(i) **Sole power to vote or to direct the vote:**

Row 5 of each Reporting Person's cover page to this Schedule 13G sets forth the sole power to vote or to direct the vote of securities of the Issuer beneficially owned by such Reporting Person as of December 31, 2024 and is incorporated by reference.

(ii) **Shared power to vote or to direct the vote:**

Row 6 of each Reporting Person's cover page to this Schedule 13G sets forth the shared power to vote or to direct the vote of securities of the Issuer beneficially owned by such Reporting Person as of December 31, 2024 and is incorporated by reference.

(iii) **Sole power to dispose or to direct the disposition of:**

Row 7 of each Reporting Person's cover page to this Schedule 13G sets forth the sole power to dispose or to direct the disposition of securities of the Issuer beneficially owned by such Reporting Person as of December 31, 2024 and is incorporated by reference.

(iv) **Shared power to dispose or to direct the disposition of:**

Row 8 of each Reporting Person's cover page to this Schedule 13G sets forth the shared power to dispose or to direct the disposition of securities of the Issuer beneficially owned by such Reporting Person as of December 31, 2024 and is incorporated by reference.

**Item 5. Ownership of 5 Percent or Less of a Class.**

**Ownership of 5 percent or less of a class**

**Item 6. Ownership of more than 5 Percent on Behalf of Another Person.**

Not Applicable

**Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company or Control Person.**

Not Applicable

**Item 8. Identification and Classification of Members of the Group.**

Not Applicable

**Item 9. Notice of Dissolution of Group.**

Not Applicable

**Item 10. Certifications:**

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect, other than activities solely in connection with a nomination under ?? 240.14a-11.

## **SIGNATURE**

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

**RA Capital Management, L.P.**

**Signature: /s/ Peter Kolchinsky**

**Name/Title: By Peter Kolchinsky, Authorized Signatory**

**Date: 02/14/2025**

**Peter Kolchinsky**

**Signature: /s/ Peter Kolchinsky**

**Name/Title: Peter Kolchinsky**

**Date: 02/14/2025**

**Rajeev Shah**

**Signature: /s/ Rajeev Shah**

**Name/Title: Rajeev Shah**

**Date: 02/14/2025**

**RA Capital Healthcare Fund, L.P.**

**Signature: /s/ Peter Kolchinsky**

**Name/Title: By RA Capital Healthcare Fund GP, LLC, its General Partner, By Peter Kolchinsky, Manager**

**Date: 02/14/2025**

**Exhibit Information**

**JOINT FILING AGREEMENT**

This Joint Filing Agreement, dated as of February 14, 2025, is by and among RA Capital Management, L.P., Peter Kolchinsky, Rajeev Shah, and RA Capital Healthcare Fund, L.P. (the foregoing are collectively referred to herein as the "Filers").

Each of the Filers may be required to file with the United States Securities and Exchange Commission a statement on Schedule 13G and/or 13D with respect to the Common Stock, \$0.0001 par value per share of Ensycse Biosciences, Inc. beneficially owned by them from time to time.

Pursuant to and in accordance with Rule 13(d)(1)(k) promulgated under the Securities Exchange Act of 1934, as amended, the Filers hereby agree to file a single statement on Schedule 13G and/or 13D (and any amendments thereto) on behalf of each of such parties, and hereby further agree to file this Joint Filing Agreement as an exhibit to such statement, as required by such rule.

This Joint Filing Agreement may be terminated by any of the Filers upon one week's prior written notice or such lesser period of notice as the Filers may mutually agree.

Executed and delivered as of the date first above written.

**RA CAPITAL MANAGEMENT, L.P.**

By: /s/ Peter Kolchinsky  
Name: Peter Kolchinsky  
Title: Authorized Signatory

**PETER KOLCHINSKY**

/s/ Peter Kolchinsky

**RAJEEV SHAH**

/s/ Rajeev Shah

**RA CAPITAL HEALTHCARE FUND, L.P.**

By: RA Capital Healthcare Fund GP, LLC  
Its: General Partner

By: /s/ Peter Kolchinsky  
Name: Peter Kolchinsky  
Title: Manager