
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13D/A

Under the Securities Exchange Act of 1934
(Amendment No. 1)*

Lyra Therapeutics, Inc.

(Name of Issuer)

Common Stock, \$0.001 par value
(Title of Class of Securities)

55234L 105
(CUSIP Number)

Alexander Rakitin
Perceptive Advisors LLC
51 Astor Place, 10th Floor
New York, NY 10003
(646) 205-5340

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

April 7, 2022

(Date of Event Which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box.

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Section 240.13d-7 for other parties to whom copies are to be sent.

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934, as amended ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

1.	Names of Reporting Persons. Perceptive Advisors LLC	
2.	Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3.	SEC Use Only	
4.	Source of Funds (See Instructions) AF	
5.	Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6.	Citizenship or Place of Organization Delaware	
Number of Shares Beneficially Owned by Each Reporting Person With	7.	Sole Voting Power 0
	8.	Shared Voting Power 9,146,731
	9.	Sole Dispositive Power 0
	10.	Shared Dispositive Power 9,146,731
11.	Aggregate Amount Beneficially Owned by Each Reporting Person 9,146,731	
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) <input type="checkbox"/>	
13.	Percent of Class Represented by Amount in Row (11) 24.8%	
14.	Type of Reporting Person (See Instructions) IA	

1.	Names of Reporting Persons. Joseph Edelman	
2.	Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3.	SEC Use Only	
4.	Source of Funds (See Instructions) AF	
5.	Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6.	Citizenship or Place of Organization United States of America	
Number of Shares Beneficially Owned by Each Reporting Person With	7.	Sole Voting Power 0
	8.	Shared Voting Power 9,146,731
	9.	Sole Dispositive Power 0
	10.	Shared Dispositive Power 9,146,731
11.	Aggregate Amount Beneficially Owned by Each Reporting Person 9,146,731	
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) <input type="checkbox"/>	
13.	Percent of Class Represented by Amount in Row (11) 24.8%	
14.	Type of Reporting Person (See Instructions) IN	

1.	Names of Reporting Persons. Perceptive Life Sciences Master Fund, Ltd.	
2.	Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3.	SEC Use Only	
4.	Source of Funds (See Instructions) WC	
5.	Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6.	Citizenship or Place of Organization Cayman Islands	
Number of Shares Beneficially Owned by Each Reporting Person With	7.	Sole Voting Power 0
	8.	Shared Voting Power 7,858,285
	9.	Sole Dispositive Power 0
	10.	Shared Dispositive Power 7,858,285
11.	Aggregate Amount Beneficially Owned by Each Reporting Person 7,858,285	
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) <input type="checkbox"/>	
13.	Percent of Class Represented by Amount in Row (11) 21.3%	
14.	Type of Reporting Person (See Instructions) CO	

1.	Names of Reporting Persons. Perceptive LS (A), LLC	
2.	Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3.	SEC Use Only	
4.	Source of Funds (See Instructions) WC	
5.	Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6.	Citizenship or Place of Organization Cayman Islands	
Number of Shares Beneficially Owned by Each Reporting Person With	7.	Sole Voting Power 0
	8.	Shared Voting Power 1,288,446
	9.	Sole Dispositive Power 0
	10.	Shared Dispositive Power 1,288,446
11.	Aggregate Amount Beneficially Owned by Each Reporting Person 1,288,446	
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) <input type="checkbox"/>	
13.	Percent of Class Represented by Amount in Row (11) 3.5%	
14.	Type of Reporting Person (See Instructions) CO	

Item 1. Security and Issuer

Item 1 of the Schedule 13D is amended and restated as follows:

This Schedule 13D relates to the shares of common stock, \$0.001 par value per share ("Common Stock"), of Lyra Therapeutics, Inc., a Delaware corporation (the "Issuer"), which has its principal executive offices at 480 Arsenal Way, Watertown, MA 02472.

Item 2. Identity and Background

Item 2 of the Schedule 13D is amended and restated as follows:

- (a) This Schedule 13D is being filed by Perceptive Advisors LLC ("Perceptive Advisors"), Joseph Edelman ("Mr. Edelman"), Perceptive Life Sciences Master Fund, Ltd. (the "Master Fund"), and Perceptive LS (A), LLC ("Perceptive LS"), and together with Perceptive Advisors, Mr. Edelman, and the Master Fund, each of the foregoing, a "Reporting Person," and collectively, the "Reporting Persons"). Perceptive LS GP, LLC ("GP") is the manager of Perceptive LS. Perceptive Advisors serves as the investment advisor to the Master Fund, and Mr. Edelman is the managing member of Perceptive Advisors and the sole member of GP. The agreement among the Reporting Persons to file this Schedule 13D jointly in accordance with Rule 13d-1(k) of the Securities Exchange Act of 1934, as amended, is attached hereto as Exhibit 1.
- (b) The address of the principal business office of each of the Reporting Persons is 51 Astor Place 10th Floor, New York, NY 10003.
- (c) The principal business of Perceptive Advisors is purchasing, holding and selling securities for investment purposes. The principal business of the Master Fund and Perceptive LS is to invest in securities. The principal occupation of Mr. Edelman is as the managing member of Perceptive Advisors.
- (d) During the last five years, none of the Reporting Persons, nor to the Reporting Persons' knowledge, any of the persons listed in Schedule A, has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).
- (e) During the last five years, none of the Reporting Persons, nor to the Reporting Persons' knowledge, any of the persons listed in Schedule A, has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree of final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.
- (f) Perceptive Advisors is a Delaware limited liability company. Mr. Edelman is a United States citizen. The Master Fund is a Cayman Islands corporation. Perceptive LS is a Delaware limited liability company.

Schedule A attached hereto sets forth the information regarding the directors of the Master Fund.

Item 3. Source and Amount of Funds or Other Consideration

Item 3 of the Schedule 13D is amended and supplemented as follows:

The Reporting Persons acquired beneficial ownership of the shares of the Common Stock in the transactions and at the prices described in Item 5(c). The source of the funds for acquiring these shares was the working capital of the Master Fund.

Item 4. Purpose of Transaction

Item 4 of the Schedule 13D is amended and supplemented as follows:

The information set forth in Item 6 of this Amendment No. 1 to Schedule 13D is incorporated by reference herein.

Item 5. Interest in Securities of the Issuer

Item 5 of the Schedule 13D is amended and supplemented as follows:

- (a) The information set forth in rows 11 and 13 of the cover pages to this Schedule 13D is incorporated by reference. The percentage set forth in row 13 is based on (i) 13,009,896 outstanding shares of Common Stock as of March 1, 2022 as reported by the Issuer in its Form 10-K filed with the Securities and Exchange Commission on March 9, 2022, (ii) 18,815,159 shares of Common Stock issued by the Issuer in the Private Placement (as defined below), and (iii) 5,000,000 shares of Common Stock issuable upon the exercise of pre-funded warrants issued by the Issuer in the Private Placement and assuming the exercise of each pre-funded warrant.
- (b) The information set forth in rows 7 through 10 of the cover pages to this Schedule 13D is incorporated by reference.
- (c) Pursuant to the Securities Purchase Agreement (as defined below) relating to the sale by the Issuer of securities in a private placement (the "Private Placement"), on April 12, 2022 the Master Fund acquired 5,924,170 shares of Common Stock at a purchase price of \$4.22 per share for an aggregate purchase price of \$24,999,997.
- (d) No person (other than the Reporting Persons) is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the shares of Common Stock subject to this Schedule 13D.
- (e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer

Item 6 of the Schedule 13D is amended and supplemented as follows:

Securities Purchase Agreement

On April 7, 2022, the Master Fund, along with certain other purchasers, entered into a Securities Purchase Agreement (the "Securities Purchase Agreement") with the Issuer, pursuant to which the Issuer agreed to sell securities to the Master Fund and the other purchasers in a private placement (the "Private Placement").

Investor Rights Agreement

In connection with the Securities Purchase Agreement, on April 7, 2022 the Master Fund, Perceptive LS and North Bridge Venture Partners entered into a Ninth Amended and Restated Investor Rights Agreement with the Issuer (the "Ninth A&R Investor Rights Agreement"). Under the Ninth A&R Investor Rights Agreement, the Issuer agreed to (i) expand the definition of "Registrable Shares" to include all shares of Common Stock acquired by investors in the Private Placement, all shares of Common Stock acquired by the investors prior to April 7, 2022 and any shares of Common Stock issued in respect of such shares because of stock dividends, splits or combinations of securities, reclassifications, recapitalizations or similar events and (ii) make certain other modifications to the terms of the registration rights therein for the benefit of the investors.

In addition, pursuant to the Ninth A&R Investor Rights Agreement, the Issuer also agreed that:

- for so long as the funds affiliated with Perceptive Advisors (and/or its affiliates) beneficially owns:
 - 20% or greater of the Issuer's total voting securities outstanding, the Issuer shall take all reasonable actions within its control to include in the slate of nominees recommended by the Board of Directors of the Issuer and/or the applicable committee thereof for election as directors at each applicable annual or special meeting of stockholders at which directors are to be elected (the "Slate"), a number of individuals designated by such Perceptive Advisors fund (each, a "Perceptive Designee") that, if elected, would result in at least two Perceptive Designees serving on the Board of Directors; and
 - 10% or greater but less than 20% of the Issuer's total voting securities outstanding, the Issuer shall take all reasonable actions within its control to include in the Slate a number of Perceptive Designees that, if elected, would result in at least one Perceptive Designee serving on the Board of Directors; and

- for so long as the investor funds affiliated with North Bridge Venture Partners (and/or its affiliates) beneficially owns 10% or greater of the Issuer's total voting securities outstanding, the Issuer shall take all reasonable actions within its control to include in the Slate a number of individuals designated by such North Bridge Venture Partners funds (each, a "North Bridge Designee") that, if elected, would result in at least one North Bridge Designee serving on the Board of Directors.

The descriptions of the Securities Purchase Agreement and the Ninth A&R Investor Rights Agreement are qualified in their entirety by the terms of the agreements, which are attached hereto as Exhibit 4 and Exhibit 5, respectively, and incorporated by reference herein to this Item 6.

Item 7. Material to be Filed as Exhibits

Item 7 of the Schedule 13D is amended and restated as follows:

Exhibit 1 Joint Filing Agreement (previously filed)

Exhibit 2 Eight Amended and Restated Investor Rights Agreement, dated January 10, 2020 (incorporated by reference to Exhibit 4.1 to the Issuer's Registration Statement on Form S-1 (File No. 333-236962)

Exhibit 3 Form of Lock-up Agreement (incorporated by reference to Exhibit A to Exhibit 1.1 to the Issuer's Registration Statement on Form S-1 (File No. 333-236962)

Exhibit 4 Securities Purchase Agreement, dated as of April 7, 2022 (incorporated by reference to Exhibit 10.1 to the Issuer's Current Report on Form 8-K filed on April 13, 2022)

Exhibit 5 Ninth Amended and Restated Investor Rights Agreement, dated as of April 7, 2022 (incorporated by reference to Exhibit 4.1 to the Issuer's Current Report on Form 8-K filed on April 13, 2022)

SIGNATURES

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.

Dated: April 14, 2022

PERCEPTIVE ADVISORS LLC

By: /s/ Joseph Edelman
Name: Joseph Edelman
Title: Managing Member

/s/ Joseph Edelman
JOSEPH EDELMAN

PERCEPTIVE LIFE SCIENCES MASTER FUND, LTD.

By: Perceptive Advisors LLC

By: /s/ Joseph Edelman
Name: Joseph Edelman
Title: Managing Member

PERCEPTIVE LS (A), LLC

By: Perceptive LS GP, LLC

By: /s/ Joseph Edelman
Name: Joseph Edelman
Title: Member

Schedule A

The following sets forth the name, address, principal occupation, citizenship and beneficial ownership of the shares of Common Stock (to the extent not pursuant to Item 5(a)) of each director of the Master Fund.

Master Fund

<u>Name and Citizenship</u>	<u>Position</u>	<u>Principal Business Address</u>	<u>Beneficial Ownership of Shares of Common Stock</u>
Scott Dakers (United Kingdom)	Director	c/o Elian Fiduciary Services (Cayman) Limited 190 Elgin Avenue, George Town Grand Cayman KY1-9007 Cayman Islands	None
Ernest A. Morrison (United Kingdom)	Director	Cox Hallett Wilkinson Milner House 18 Parliament Street P.O. Box HM 1561 Hamilton HM FX Bermuda	None
James Nicholas (United States)	Director	c/o GenesisPoint LLC 30 Old Kings Highway S Darien, CT 06820	None