
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13D

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

Comera Life Sciences Holdings, Inc.
(Name of Issuer)

Common Stock, par value \$0.0001 per share
(Title of Class of Securities)

20037C108
(CUSIP Number)

David Soane
c/o Soane Labs, LLC
380 NE 72nd Terrace
Miami, FL 33138
510-376-1425

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

May 19, 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 Rule 13d-1(e), Rule 13d-1(f) or Rule 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 Rule 13d-7(b) 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 ("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 David Soane	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) PF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(D) OR 2(E) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 632,110 ⁽¹⁾
	8	SHARED VOTING POWER 0
	9	SOLE DISPOSITIVE POWER 503,735 ⁽¹⁾
	10	SHARED DISPOSITIVE POWER 0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 632,110 ⁽¹⁾	
12	CHECK BOX 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) 3.3% ⁽²⁾	
14	TYPE OF REPORTING PERSON(SEE INSTRUCTIONS) IN	

⁽¹⁾ Consists of (a) 589,786 shares of Common Stock held directly by David Soane, which includes 119,779 Earn-Out Shares (as described below), (b) 21,162 shares held by the Alexander V. Soane 2019 Irrevocable Trust, which includes 4,298 Earn-Out Shares and (c) 21,162 shares held by the Nicholas V. Soane 2019 Irrevocable Trust, which includes 4,298 Earn-Out Shares.

⁽²⁾ Calculated based on 19,087,185 shares of Common Stock outstanding as of August 15, 2022, as reported in the Issuer's Registration Statement on Form S-1, as filed with the Securities and Exchange Commission on September 6, 2022.

1	NAMES OF REPORTING PERSONS The Soane Family Trust	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) PF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(D) OR 2(E) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Florida	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 3,265,995 ⁽¹⁾
	8	SHARED VOTING POWER 0
	9	SOLE DISPOSITIVE POWER 2,602,707 ⁽¹⁾
	10	SHARED DISPOSITIVE POWER 0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 3,265,995 ⁽¹⁾	
12	CHECK BOX 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) 17.1% ⁽²⁾	
14	TYPE OF REPORTING PERSON(SEE INSTRUCTIONS) OO	

⁽¹⁾ Consists of 3,265,995 shares of Common Stock held directly by The Soane Family Trust, which includes 663,288 Earn-Out Shares.

⁽²⁾ Calculated based on 19,087,185 shares of Common Stock outstanding as of August 15, 2022, as reported in the Issuer's Registration Statement on Form S-1, as filed with the Securities and Exchange Commission on September 6, 2022.

Item 1. Security and Issuer.

This Schedule 13D relates to the shares of common stock, par value \$0.0001 per share (the “Common Stock”), of Comera Life Sciences Holdings, Inc., a Delaware corporation (the “Issuer”). The principal executive offices of the Issuer are located at 12 Gill Street, Suite 4650, Woburn, Massachusetts 01801.

Item 2. Identity and Background.

(a)-(c) This Schedule 13D is being filed jointly by the following persons (each a “Reporting Person” and collectively, the “Reporting Persons”):

- (i) David Soane. Dr. Soane is the founder and manager of Soane Labs, LLC, a research and development company.
- (ii) The Soane Family Trust, a trust for the benefit of Dr. Soane’s immediate family members of which Dr. Soane is a trustee.

The principal office address of the Reporting Persons is 380 NE 72nd Terrace, Miami, FL 33138.

(d)-(e) During the last five years, the Reporting Persons (i) have not been convicted in any criminal proceeding (excluding traffic violations or similar misdemeanors), or (ii) were not 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 or 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) Dr. Soane is a citizen of the United States of America. The Soane Family Trust is administered under the laws of Florida.

Item 3. Source and Amount of Funds or Other Consideration.

On May 19, 2022, the Issuer consummated the acquisition of all of the issued and outstanding shares of OTR Acquisition Corp., a Delaware corporation (“OTR”) and Comera Life Sciences, Inc., a Delaware corporation (“Comera”), in accordance with that certain Business Combination Agreement (as amended, the “Business Combination Agreement”) by and among the Issuer, OTR, Comera, CLS Sub Merger 1 Corp., a Delaware corporation, (“Comera Merger Sub”), and CLS Sub Merger 2 Corp., a Delaware corporation (“OTR Merger Sub”). As contemplated in the Business Combination Agreement, (i) Comera Merger Sub merged with and into Comera, with Comera surviving such merger as a direct wholly-owned subsidiary of the Issuer (the “Comera Merger”) and (ii) OTR Merger Sub merged with and into OTR, with OTR surviving such merger as a direct wholly-owned subsidiary of the Issuer (the “OTR Merger”) (collectively with the other transactions described in the Business Combination Agreement, the “Business Combination”). Upon the closing of the Business Combination, by virtue of the Comera Merger, all shares of Comera common stock, par value \$0.001 per share (“Comera Common Stock”), issued and outstanding were canceled and converted into the right to receive shares of the Issuer’s Common Stock.

The Reporting Persons are former holders of Comera Common Stock. Immediately after the closing of, and giving effect to the Business Combination and issuance of Common Stock in connection therewith, the Reporting Persons were the beneficial owners of an aggregate of 3,855,781 shares of Common Stock, which amount includes 791,663 Earn-Out Shares. The Earn-Out Shares are shares of Common Stock held in escrow, which shares will be released to the Reporting Persons if, at any time prior to May 19, 2024, either (i) the volume-weighted average price of the Common Stock is equal to or greater than \$12.50 for twenty trading days within a thirty trading day period or (ii) upon a change of control with aggregate consideration in excess of \$12.50 per share of Common Stock.

The foregoing summary of the Business Combination Agreement does not purport to be complete and is qualified in its entirety by reference to the complete text of such agreement, which is filed herewith as Exhibits 99.2 and 99.3 and incorporated herein by reference.

Item 4. Purpose of Transaction.

The information set forth or incorporated by reference in Item 3 is incorporated by reference in this Item 4.

The Reporting Persons intend to review their investment in the Issuer on a periodic basis and may from time to time purchase, sell or engage in other transactions involving the Common Stock. Depending on various factors including, without limitation, the Issuer's financial position and investment strategy, the price of the Issuer's securities, conditions in the securities markets and general economic and industry conditions, the Reporting Persons may in the future take such actions with respect to its investment in the Issuer as they deem appropriate including, without limitation, making proposals concerning changes to the capitalization, ownership structure, board composition or operations of the Issuer, purchasing additional securities of the Issuer, selling some or all of their Common Stock of the Issuer, engaging in short selling of or any hedging or similar transaction with respect to the securities of the Issuer, or changing their intention with respect to any and all matters referred to in this Item 4.

Item 5. Interest in Securities of the Issuer.

(a)-(b) The information contained on the cover pages to this Schedule 13D and as set forth or incorporated in Items 2, 3, 4 and 6 hereof is incorporated by reference. The percent of class was calculated based on 19,087,185 shares of Common Stock outstanding as of August 15, 2022, as reported in the Issuer's Registration Statement on Form S-1, as filed with the Securities and Exchange Commission on September 6, 2022.

As of May 19, 2022, the Reporting Persons beneficially owned (a) 589,786 shares of Common Stock held directly by David Soane, representing approximately 3.1% of the outstanding Common Stock, (b) 21,162 shares of Common Stock held directly by the Alexander V. Soane 2019 Irrevocable Trust, representing less than 0.1% of the outstanding Common Stock, (c) 21,162 shares held directly by the Nicholas V. Soane 2019 Irrevocable Trust, representing less than 0.1% of the outstanding Common Stock, and (d) 3,265,995 shares of Common Stock held by The Soane Family Trust, representing approximately 17.1% of the outstanding Common Stock. Dr. Soane is a trustee of The Soane Family Trust, and Dr. Soane's spouse is a trustee of each of the Alexander V. Soane Irrevocable Trust of 2019 and the Nicholas V. Soane Irrevocable Trust of 2019.

(c) Except as set forth in this Schedule 13D with reference to the Business Combination Agreement, the Reporting Persons have not engaged in any transactions during the past 60 days in any Issuer Common Stock.

(d) To the knowledge of the Reporting Persons, no other person has the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the securities of the Issuer deemed to be beneficially owned by the Reporting Person.

(e) Not applicable.

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

Registration Rights and Lock-Up Agreement

At the closing of the Business Combination, the Issuer entered into an amended and restated registration rights and lock-up agreement (the "Registration Rights and Lock-Up Agreement") with certain existing stockholders of Comera and OTR (including the Reporting Persons) with respect to the shares of Common Stock they received in the Business Combination. The Registration Rights and Lock-Up Agreement required the Issuer to, among other things, file a resale shelf registration statement on behalf of the stockholders no later than 30 days from the Closing. The Registration Rights and Lock-Up Agreement also provides certain demand registration rights and piggyback registration rights to the stockholders, subject to underwriter cutbacks and issuer blackout periods. The Issuer agreed to pay certain fees and expenses relating to registrations under the Registration Rights and Lock-Up Agreement.

Subject to certain exceptions, the Registration Rights and Lock-Up Agreement further provides for the Common Stock held by the signatories to be locked-up until the earlier of (i) one year following the Closing and (ii) the date on which the sale price of the Holdco Common Stock equals or exceeds \$12.00 per share for any 20 trading days within any 30-day trading period commencing 150 days after the Closing (the "Lock-Up Period").

The foregoing description of the Registration Rights and Lock-Up Agreement does not purport to be complete and is qualified in its entirety by the full text of the Registration Rights and Lock-Up Agreement, the form of which is included as Exhibit 99.4 to this Schedule 13D and is incorporated by reference herein.

The information contained as set forth or incorporated in Items 3, 4 and 5 is incorporated herein by reference. Except as set forth in this Schedule 13D, the Reporting Persons do not have any contracts, arrangements, understandings or relationships with any persons with respect to any securities of the Issuer.

Item 7. Materials to be Filed as Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
99.1	Joint Filing Agreement (filed herewith).
99.2	Business Combination Agreement, dated as of January 31, 2022, among the Issuer, OTR Acquisition Corp., CLS Sub Merger 1 Corp., CLS Sub Merger 2 Corp. and Comera Life Sciences, Inc. (incorporated by reference to Annex A to Amendment No. 3 to the registration statement on Form S-4, filed by the Issuer with the SEC on April 11, 2022).
99.3	First Amendment to Business Combination Agreement, dated as of May 19, 2022 among the Issuer, OTR Acquisition Corp., CLS Sub Merger 1 Corp., CLS Sub Merger 2 Corp. and Comera Life Sciences, Inc. (incorporated by reference to Exhibit 2.2 to the current report on Form 8-K, filed by the Issuer with the SEC on May 25, 2022).
99.4	Registration Rights and Lock-Up Agreement among the Issuer and certain existing stockholders of Comera and OTR, dated as of May 19, 2022 (incorporated by reference to Exhibit 10.3 to the current report on Form 8-K, filed by the Issuer with the SEC on May 25, 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: October 28, 2022

/s/ David S. Soane

David S. Soane

THE SOANE FAMILY TRUST

/s/ David S. Soane

Name: David S. Soane

Title: Trustee

JOINT FILING AGREEMENT

The undersigned acknowledge and agree that the foregoing statement on Schedule 13D is filed on behalf of each of the undersigned and that all subsequent amendments to this statement on Schedule 13D may be filed on behalf of each of the undersigned without the necessity of filing additional joint filing agreements. The undersigned acknowledge that each shall be responsible for the timely filing of such amendments, and for the completeness and accuracy of the information concerning him or it contained herein or therein, but shall not be responsible for the completeness and accuracy of the information concerning the others, except to the extent that he or it knows or has reason to believe that such information is inaccurate.

Dated: October 28, 2022

/s/ David S. Soane

David S. Soane

THE SOANE FAMILY TRUST

/s/ David S. Soane

Name: David S. Soane

Title: Trustee