

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

SCHEDULE 13D

Under the Securities Exchange Act of 1934

(Amendment No.)*

Stellar Biotechnologies, Inc.

(Name of Issuer)

Common Shares, without par value

(Title of Class of Securities)

85855A203

(CUSIP Number)

Frank R. Oakes
c/o Stellar Biotechnologies, Inc.
332 East Scott Street
Port Hueneme, California 93041
(805) 488-2800

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

June 26, 2017

(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 Rule 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 ("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. NAME OF REPORTING PERSON:

Frank R. Oakes

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

(a)

(b)

3. SEC USE ONLY

4. SOURCE OF FUNDS

OO, PF

5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)

6. CITIZENSHIP OR PLACE OF ORGANIZATION

United States of America

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH REPORTING
PERSON
WITH

7. SOLE VOTING POWER

568,087

8. SHARED VOTING POWER

0

9. SOLE DISPOSITIVE POWER

568,087

10. SHARED DISPOSITIVE POWER

0

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

568,087^[1]

12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES

13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

5.4%^[2]

14. TYPE OF REPORTING PERSON

IN

¹ Beneficial ownership of common shares of the Issuer (i) includes 183,620 common shares issuable upon exercise of outstanding options; and (ii) excludes (a) 20,867 common shares and (b) 5,400 common shares issuable upon the exercise of outstanding options, which are held by the Reporting Person's spouse who has sole voting and dispositive power over the securities, and as to which the Reporting Person specifically disclaims beneficial ownership. The Reporting Person does not have the power to vote or dispose of, or to direct the voting or disposition of, the shares held by his spouse, or with respect to any shares acquired under her outstanding options.

² Based on 10,520,096 common shares of the Issuer issued and outstanding as of June 26, 2017, after giving effect to the issuance of 383,838 common shares by the Issuer under the Issuer's Performance Share Plan, dated as of April 1, 2010.

ITEM 1. SECURITY AND ISSUER

This Schedule 13D (this "Schedule 13D") relates to the common shares, without par value (the "Common Shares"), of Stellar Biotechnologies, Inc., a British Columbia corporation (the "Issuer"). The principal executive offices of the Issuer are located at 332 East Scott Street, Port Hueneme, California 93041.

ITEM 2. IDENTITY AND BACKGROUND

- (a) This Schedule 13D is being filed by Frank R. Oakes (the "Reporting Person").
- (b) The principal business address for the Reporting Person is c/o Stellar Biotechnologies, Inc., 332 East Scott Street, Port Hueneme, California, 93041.
- (c) The Reporting Person is the President, Chief Executive Officer and Chairman of the Board of Directors of the Issuer.
- (d) During the last five years, the Reporting Person has not been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).
- (e) During the last five years, the Reporting Person has not 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 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) The Reporting Person is a citizen of the United States of America.

ITEM 3. SOURCE AND AMOUNT OF FUNDS OR OTHER CONSIDERATION

The Reporting Person initially acquired 400,598 Common Shares and 107,500 options to purchase Common Shares as a result of the Issuer's share exchange in a reverse merger in April 2010 with Stellar Biotechnologies, Inc., a California corporation of which the Reporting Person was affiliated. In connection with such transaction, a performance share plan (the "Plan") was approved by the shareholders, allotting additional Common Shares for issuance to key management, employees and consultants of the Issuer, including the Reporting Person, upon achievement of certain milestones (the "Performance Shares"). On June 26, 2017, the Compensation Committee of the Board of Directors of the Issuer approved the grant to the Reporting Person of 235,690 Performance Shares to which he was entitled under the Plan in connection with the achievement of the milestones. The Reporting Person did not pay any cash consideration for the Performance Shares.

He received 80,120 options to purchase the Common Shares through his employment with the Issuer during the period commencing April 2010 to present. On June 14, 2012, using personal funds, the Reporting Person exercised options to purchase 4,000 Common Shares at a price per share of C\$0.28. He purchased 4,000 Common Shares and warrants to purchase 4,000 Common Shares in the Issuer's January 2013 private placement. On December 22, 2015, using personal funds, the Reporting Person exercised warrants to purchase 4,000 Common Shares at a price per share of \$2.86.

ITEM 4. PURPOSE OF TRANSACTION

The information set forth in Item 3 of this Schedule 13D is incorporated by reference into this Item 4.

As described therein, the securities deemed to be beneficially owned by the Reporting Person were originally acquired in connection with (i) the Qualifying Transaction; (ii) his service as President and Chief Executive Officer, and a member of the Issuer's Board; (iii) a private placement conducted by the Issuer in January 2013, and (iv) awards under the Plan relating to the achievement of certain milestones following the consummation of the Qualifying Transaction.

As part of his role with the Issuer, the Reporting Person continuously assesses the Issuer's business, financial condition, results of operations and prospects, general economic conditions, other developments and additional investment opportunities. The Reporting Person does not currently have any specific plans or proposals that relate to, or would result in, any actions or events specified in clauses (a) through (j) of Item 4 to Schedule 13D.

The Reporting Person reserves the right to change plans and take any and all actions that he may deem appropriate to maximize the value of his investments in the Issuer, including, among other things, purchasing or otherwise acquiring additional securities of the Issuer, selling or otherwise disposing of any securities of the Issuer beneficially owned by him, in each case in the open market or in privately negotiated transactions, or formulating other plans or proposals regarding the Issuer or its securities to the extent deemed advisable by the Reporting Person in light of his general investment policies, market conditions, subsequent developments affecting the Issuer and general business and future prospects of the Issuer.

ITEM 5. INTEREST IN SECURITIES OF THE ISSUER

- (a) The Reporting Person is the beneficial owner of 568,087 Common Shares, or 5.4% of the Issuer's outstanding shares, and such amount includes 183,620 Common Shares issuable upon the exercise of outstanding options. The Reporting Person specifically disclaims beneficial ownership over an additional 20,867 Common Shares and 5,400 Common Shares issuable upon the exercise of outstanding options which are held by the Reporting Person's spouse. There were 10,520,096 Common Shares of the Issuer issued and outstanding as of June 26, 2017, after giving effect to the issuance of 383,838 Performance Shares by the Issuer under the Plan.
 - (b) The Reporting Person has the sole power to vote and dispose of 568,087 Common Shares of the Issuer, which includes 183,620 Common Shares issuable upon the exercise of outstanding options. The Reporting Person has no shared voting or shared dispositive power over any Common Shares.
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- (c) Other than as set forth in Item 3, no transactions were effected by the Reporting Person during the 60 day period immediately preceding June 26, 2017.
- (d) To the knowledge of the Reporting Person, no one other than the Reporting Person has the right to receive, or the power to direct the receipt of, dividends from, or the proceeds from the sale of, any Common Shares beneficially owned by the Reporting Person.
- (e) Not applicable.

ITEM 6. CONTRACTS, ARRANGEMENTS, UNDERSTANDINGS OR RELATIONSHIPS WITH RESPECT TO THE SECURITIES OF THE ISSUER

No contracts, arrangements, understandings or similar relationships exist with respect to the securities of the Issuer between the Reporting Person and any person or entity.

ITEM 7. MATERIAL TO BE FILED AS EXHIBITS

Not applicable.

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.

Dated: June 28, 2017

By: /s/ Frank R. Oakes
Frank R. Oakes
