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

FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

CELLECT BIOTECHNOLOGY LTD.

(Exact name of registrant as specified in its charter)

State of Israel

(State or other jurisdiction of incorporation or organization)

Not applicable (I.R.S. Employer

Identification No.)

23 Hata'as Street, Kfar Saba, Israel 44425

(Address of Principal Executive Offices)

Cellect Biotechnology Ltd. 2014 Global Incentive Option Scheme (Full title of the plan)

> Vcorp Services, LLC 25 Robert Pitt Drive, Suite 204 Monsey, New York 10952 (888) 528-2677

(Name, Address and Telephone Number of Agent For Service)

Copies of all communications, including communications sent to agent for service, should be sent to:

Ronen Kantor, Esq. Giora Gutman, Esq. Doron Tikotzky Kantor Gutman Amit Gross B.S.R. 4 Tower, 33 Floor 7 Metsada Street, Bnei Brak 5126112 Israel Tel: (+972) (3) 613-3371

Gary Emmanuel, Esq. Mark Selinger, Esq. McDermott Will & Emery LLP 340 Madison Avenue New York, NY 10173 Tel: (212) 547-5400

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer 🗆	Accelerated filer \Box	Non-accelerated filer \Box	Smaller reporting company \Box
	(Do not check if a sma	ller reporting company)	

Emerging growth company \square

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. \Box

CALCULATION OF REGISTRATION FEE

			oposed		Proposed		
Title of Securities to be Registered	Amount to be Registered ⁽¹⁾	offer	ximum ing price r share	i	maximum aggregate fering price		nount of stration fee
Ordinary Shares ⁽²⁾	1,665,223	¢	0.33	\$	549,524	\$	68.42(3)
Ordinary Shares ⁽²⁾	81,000	ф Ф	0.33	¢ D	27,540	Ф Ф	3.43(3)
Ordinary Shares ⁽²⁾	632,710	ф \$	0.34	\$	278,393	\$	34.66(3)
Ordinary Shares ⁽²⁾	2,013,096	\$	0.34	\$	684,453	\$	85.22(4)
Total	4,392,029	Ψ	0.54	\$	1,539,910	\$	191.73
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- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended, this Registration Statement also covers an indeterminate number of additional securities which may be offered and issued to prevent dilution resulting from stock splits, stock dividends, recapitalizations or similar transactions.
- (2) American Depository Shares ("ADSs"), evidenced by American Depository Receipts ("ADRs"), issuable upon deposit of Ordinary Shares, no par value, of Cellect Biotechnology Ltd. (the "Company"), are registered on a separate registration statement on Form F-6 (File No. 333-212698). Each ADS represents twenty (20) Ordinary Shares.
- (3) Computed in accordance with Rule 457(h) promulgated under the Securities Act based on the exercise price of the options underlying the Ordinary Shares.
- (4) The fee is based on the number of Ordinary Shares which may be issued under the plan this registration statement relates to and is estimated in accordance with paragraphs (c) and (h) of Rule 457 under the Securities Act solely for the purpose of calculating the registration fee based upon the average of the high and low sales price of an American Depository Share as reported on the Nasdaq Capital Market on May 11, 2018.

EXPLANATORY NOTE

The purpose of this Registration Statement is to register 4,392,029 additional Ordinary Shares to be reserved for issuance under the Registrant's 2014 Global Incentive Option Scheme (the "Plan"). The Ordinary Shares registered hereunder are in addition to 4,207,971 Ordinary Shares previously registered on the Company's Form S-8 filed on August 17, 2018 (Commission File No. 333-220015) and the 8,163,000 Ordinary Shares previously registered on the Company's Form S-8 filed on November 28, 2016 (Commission File No. 333-214817) (the "Prior Registration Statements").

This Registration Statement is submitted in accordance with General Instruction E to Form S-8 regarding Registration of Additional Securities. Pursuant to General Instruction E to Form S-8, the Company hereby incorporates herein by reference the contents of the Prior Registration Statements, except as amended hereby.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The documents containing the information required in Part I of this Registration Statement have been or will be sent or given to participating employees as specified in Rule 428(b)(1) under the Securities Act of 1933, as amended (the "Securities Act"), in accordance with the rules and regulations of the United States Securities and Exchange Commission (the "Commission"). Such documents are not being filed with the Commission either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 of the Securities Act. These documents and the documents incorporated by reference into this Registration Statement pursuant to Item 3 of Part II of this Registration Statement, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following additional documents, which have been filed by the Registrant with the Commission are incorporated by reference in and made a part of this registration statement, as of their respective dates:

- (a) The Registrant's Annual Report on Form 20-F for the year ended December 31, 2017 filed with the Commission on March 19, 2018;
- (b) The Registrant's reports of foreign private issuer on Form 6-K furnished with the Commission on January 4, 2018, January 16, 2018, January 29, 2018, January 31, 2018, March 19, 2018, April 9, 2018 and May 10, 2018 (in each case, to the extent expressly incorporated by reference into the Company's Registration Statements on Form S-8 (File No. 333-214817 and File No. 333-220015));
- (c) The description of the Registrant's American Depositary Shares contained in Item 1 of the Registration Statement on Form 8-A (File No. 001-37846) filed with the Commission on July 27, 2016.

In addition to the foregoing, all documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended, and all reports on Form 6-K subsequently filed by the Registrant which state that they are incorporated by reference herein, prior to the filing of a post- effective amendment which indicates that all securities offered hereunder have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be part hereof from the date of filing of such documents and reports.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this registration statement to the extent that a statement herein, or in any subsequently filed document which also is or is deemed to be incorporated by reference, modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

Item 8. Exhibits.

Reference is made to the Exhibit Index on the page immediately preceding the exhibits for a list of exhibits filed as part of this Registration Statement, which Exhibit Index is incorporated herein by reference.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement on Form S-8 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Kfar Saba, State of Israel, on the 17th day of May, 2018.

CELLECT BIOTECHNOLOGY LTD.

By: /s/ Shai Yarkoni

Name: Dr. Shai Yarkoni Title: Chief Executive Officer

POWER OF ATTORNEY AND SIGNATURES

We, the undersigned officers and directors of Cellect Biotechnology Ltd., hereby severally constitute and appoint Dr. Shai Yarkoni and Eyal Leibovitz, and each of them individually, our true and lawful attorney to sign for us and in our names in the capacities indicated below any and all amendments or supplements, including any post-effective amendments, to this registration statement on Form S-8 and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming our signatures to said amendments to this registration statement signed by our said attorney and all else that said attorney may lawfully do and cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the dates indicated:

Name	Title	Date		
/s/ Shai Yarkoni Dr. Shai Yarkoni	Chief Executive Officer and Director (principal executive officer)	May 17, 2018		
/s/ Eyal Leibovitz Eyal Leibovitz	Chief Financial Officer (principal financial officer and principal accounting officer)	May 17, 2018		
/s/ Kasbian Nuriel Chirich Kasbian Nuriel Chirich	Chairman of the Board	May 17, 2018		
/s/ Abraham Nahmias Abraham Nahmias	Director	May 17, 2018		
/s/ Ruth Ben Yakar Dr. Ruth Ben Yakar	Director	May 17, 2018		
/s/ Yuval Berman Yuval Berman	Director	May 17, 2018		
/s/ David Braun David Braun	Director	May 17, 2018		
/s/ Michael Berelowitz Michael Berelowitz	Director	May 17, 2018		
/s/ Ruhama Avraham Ruhama Avraham	Director	May 17, 2018		

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SIGNATURE OF AUTHORIZED REPRESENTATIVE IN THE UNITED STATES

Pursuant to the Securities Act of 1933, as amended, the undersigned, the duly authorized representative in the United States of Cellect Biotechnology Ltd. has signed this registration statement in the city of Monsey, the State of New York, on May 17, 2018.

VCORP SERVICES, LLC

By: /s/ Isaac Muller

Name: Isaac Muller Title: Authorized Representative EXHIBIT INDEX

Exhit Numl	
4.1	Articles of Association of Cellect Biotechnology Ltd. (unofficial English translation from Hebrew original) (1)
4.2	Certificate of Name Change of Cellect Biotechnology Ltd. (unofficial English translation from Hebrew original) (2)
4.3	Form of Deposit Agreement among the Registrant, the Bank of New York Mellon, as Depositary, and all Owners and Holders from time to time of American Depositary Shares issued hereunder (3)
5.1	Opinion of Doron Tikotzky Kantor Gutman Amit Gross, Israeli counsel to Cellect Biotechnology Ltd. (including consent)
23.1	Consent of Kost Forer Gabbay & Kasierer, Certified Public Accountant (Isr.), a member of Ernst & Young Israel
23.2	Consent of Doron Tikotzky Kantor Gutman Amit Gross (included in the opinion filed as Exhibit 5.1 to this Registration Statement)
24.1	Power of Attorney (included on signature page)
99.1	Cellect Biotechnology Ltd. 2014 Global Incentive Option Scheme (4)
(1)	Previously filed as Exhibit 3.1 to the Registrant's registration statement on Form F-1 filed on July 7, 2016, and incorporated herein by reference.
(2)	Previously filed as Exhibit 3.2 to the Registrant's registration statement on Form F-1 filed on July 25, 2016, and incorporated herein by reference.
(3)	Previously filed as Exhibit 4.1 to the Registrant's registration statement on Form F-1 filed on July 26, 2016, and incorporated herein by reference.

(4) Previously filed as Exhibit 10.6 to the Registrant's registration statement on Form F-1 filed on July 7, 2016, and incorporated herein by reference.

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Bnei Brak, May 17, 2018

To: Cellect Biotechnology Ltd. 23 HaTa'as St. Kfar Saba 4442525 Israel

Ladies and Gentlemen,

Re: REGISTRATION STATEMENT ON FORM S-8

We are acting as Israeli counsel for Cellect Biotechnology Ltd., an Israeli company (the "**Company**"), in connection with the preparation of a Registration Statement on Form S-8 (the "**Registration Statement**") under the Securities Act of 1933, as amended (the "**Act**"), pertaining to the registration of 4,392,029 Ordinary Shares no par value of the Company (the "**Plan Shares**") under the Cellect Biotechnology 2014 Incentive Option Plan (the "**Plan**").

In rendering our opinion, we have examined, and have relied as to factual matters solely upon, originals or copies certified, or otherwise identified to our satisfaction, of such documents, corporate records or other instruments as we have deemed necessary or appropriate for the purposes of this opinion. In our examination we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, and the conformity with the originals of all documents submitted to us as copies. We have, when relevant facts material to our opinion were not independently established by us, relied to the extent we deemed such reliance proper upon written or oral statements of officers and other representatives of the Company.

In giving the opinion expressed herein, no opinion is expressed as to the laws of any jurisdiction other than the State of Israel.

Based upon and subject to the foregoing, we are of the opinion that the Plan Shares, when issued pursuant to the terms of the Plan, and the terms of any agreements relating to such issuance, will be upon receipt of the consideration provided for in the Plan, validly issued, fully paid and non-assessable.

This opinion is intended solely for the benefit and use of the Company and other persons who are entitled to rely on the Registration Statement, and is not to be used, released, quoted, or relied upon by anyone else for any purpose (other than as required by law), without our prior written consent.

We hereby consent to the filing of this opinion as Exhibit A to the Registration Statement, and to the use of our name wherever appearing in the Registration Statement in connection with Israeli law. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Securities and Exchange Commission promulgated thereunder.

Very truly yours,

/s/ Doron, Tikotzky, Kantor, Gutman, Amit Gross Doron, Tikotzky, Kantor, Gutman, Amit Gross Advocates & Notaries

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SRFK Manhattan: New York, Broadway 61, NY 10006

Gil Mor, Adv. & Notary Sharon Fishman, Adv. & Notary Moti Hoffman, Adv. & Notary Efrat Hamami, Adv. Tamir Kalderon, Adv Asaf Gershgoren, Adv. & economist Efi Ohana, Adv. & economist Asaf Hofman, Adv. & economist Ron Soulema, Adv. Moti Philip, Adv. Sagiv Bar Shalom, Adv. Ori Perel, Adv. David Rozen, Adv. Israel Mark, Adv. Amir Bar Dayan, Adv. Sandrine Dray, Adv. & Notary*** Nahi Hamud, Adv. Shmulik Cohen, Adv. Yair Messalem, Adv. Maayan Peled, Adv. Igal Rosenberg, Adv. Gili Yasu, Adv. & Notary Tmoora Detsch Kaufman, Adv Lilach Cohen-Shamir, Adv. Orly Pharan, Adv. Rotem Nissim, Adv. Orit Peper, Adv. Rivka Mangoni, Adv Israel Asaraf, Adv. & Notary Jossef Prins, Adv. Shay Almakies, Adv. & Notary Yael Porat Kotzer, Adv. Gali Ganoni, Adv. Hadas Garoosi Wolfsthal, Adv. Odelia Cohen-Schondorf, Adv. Hasan Hasan, Adv. Yana Shapiro Orbach, Adv. Ronit Rabinovich, Adv. Nidal Siaga, Adv. Avi Cohen, Adv. Amit Moshe Cohen, Adv. Sonny Knaz, Adv. Bat-El Ovadia, Adv. Aharon Eitan, Adv. Rania Elime, Adv. Sivan Kaufman, Adv. Mor Rozenson, Adv. Iris Borcom, Adv. Inbal Naim, Adv. Sivan Feldhamer, Adv. Meital Graff. Adv. Amir Keren, Adv. Ariel Regev, Adv. Michal Zamir-Polani, Adv. Inbal Harel Gershon, Adv. Hezi Sidon, Adv. Shirli Rahmani, Adv. Omer Katzir, Adv. & economist Hadar Weizner, Adv. & economist Yaniv Levi, Adv. Noy Keren, Adv. Avi Kababgian, Adv. Or Yahal Asbag, Adv.

Yaron Tikotzky, Adv. (CPA)* Eli Doron, Adv. & Notary Ronen Kantor, Adv.

Amit Gross, Adv. & Notary

Giora Gutman, Adv. Rachel (Goren) Cavallero, Adv.

Eli Kulas. Adv. Notary & Mediator - Counselor Jan Robinsohn, M.Jur. Adv. & Notary -Counselor**** Giora Amir, Adv. Notary - Counselor

* Member of the New York State Bar

*** Member of the Law Society in England & Wales *** Accredited by the consulate of France **** Honorary Consul Of The Republic Of Poland (ret.)

mail@dtkgglaw.com www.dtkgglaw.com www.dt-law.co.il

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the Cellect Biotechnology Ltd. 2014 Global Incentive Option Scheme of our report dated March 13, 2018, with respect to the financial statements of Cellect Biotechnology Ltd., included in its annual report on Form 20-F for the year ended December 31, 2017, filed with the Securities Exchange Commission.

Tel-Aviv, Israel May 17, 2018 s/ Kost Forer Gabbay & Kasierer/ KOST FORER GABBAY & KASIERER A Member of Ernst & Young Global