UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

Form 6-K

REPORT OF FOREIGN PRIVATE ISSUER
PURSUANT TO RULE 13a-16 OR 15d-16 UNDER
THE SECURITIES EXCHANGE ACT OF 1934

For the month of March 2019
Commission File Number
001-37846

CELLECT BIOTECHNOLOGY LTD.

(Translation of registrant's name into English)

23 Hata'as Street
Kfar Saba, Israel 44425
(Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.

Form 20-F ☒ Form 40-F ☐

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulations S-T Rule 101(b)(1): ☐

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulations S-T Rule 101(b)(7): ☐

Attached hereto as Exhibit 99.1 and incorporated by reference herein is a press release issued by the Registrant entitled “Cellect Biotechnology Reports Fourth Quarter and Full Year 2018 Results and Recent Corporate Progress.”

Exhibit

99.1	Press Release, dated March 18, 2019

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Cellect Biotechnology Ltd.

By: /s/ Eyal Leibovitz
Name: Eyal Leibovitz
Title: Chief Financial Officer

Date: March 18, 2019

Cellect Biotechnology Reports Fourth Quarter and Full Year 2018 Results and Recent Corporate Progress

Milestone Execution Positions the Company for Expedited Progress in 2019

Tel Aviv, Israel March 18, 2019 – Cellect Biotechnology Ltd. (Nasdaq: APOP), a developer of a novel stem cell production technology, today announced operating and financial results for the fourth quarter and full year ended December 31, 2018, as well as recent corporate progress.

"We made progress in 2018 as we overcame the short-term setback of patient recruitment in our trial in Israel and moved closer to the initiation of our U.S. clinical efforts," commented Dr. Shai Yarkoni, Chief Executive Officer. "We continue to validate our innovative science, and the U.S. Food and Drug Administration's (FDA) recent decision to hire at least 50 clinical assesors to focus on cell and gene therapy companies is precisely why we believe Cellect will be a major beneficiary in the growth of this sector – companies and academics need to source stem cells from a reliable and cost effective supplier to develop their therapies over the next decade and we are positioning Cellect's technology to enable that. Operationally, we recently strengthened our balance sheet through an underwritten public offering, securing interest from sophisticated healthcare investors and participation from senior executives from Cellect, which reflects our continued optimism and outlook for 2019. We look forward to providing an update on our progress in the coming months through a business update conference call."

Recent Operating and Financial Highlights:

- Validated through an independent third party that the ApoGraft technology accelerates mesenchymal stem cell (MSC) expansion relative to processes currently used in research and manufacturing.
- Concluded the scale-up development and manufacturing of clinical grade FasL in collaboration with its outsourced supplier, enabling the Company to expedite U.S. clinical programs into multiple studies.
- Entered into a collaboration with Washington University, a leading academic institution based in St. Louis, MO, to determine the safety and tolerability in a U.S. Phase I/II study using ApoGraft™ for bone marrow transplantations.
- Strengthened the balance sheet through a $6.5 million underwritten public offering, providing the Company additional resources to execute its business strategy.

Anticipated Near-Term Milestones:

- The Company expects the Investigational New Drug (IND) application to be submitted to the FDA by the lead investigator, Dr. John DiPersio, Director of the Center for Gene and Cellular Immunotherapy at Washington University School of Medicine and President of the American Society for Blood and Marrow Transplantation, in the second quarter of 2019.
- The Company expects to report interim data from the Israeli trial in the second quarter of 2019.

Key 2018 Achievements:

Clinical Results in Israel Continue to Validate the Company's Innovation

- Reported the results of the first six patients after a one month follow-up in the clinical trial of Cellect's ApoGraft™ stem cell transplant with 100% acceptance and zero related adverse events.
- Opened a second clinical trial site at Hadassah Medical Center and received the approval from the Data and Safety Monitoring Board (DSMB) for dose escalation in the third of the fourth cohort in the clinical trial.
- Successfully completed the proof of concept testing of the Company's ApoTainer™ using its FasL-coated magnetic beads for maximizing efficacy and scalability of stem cell based products' manufacturing. The ApoTainer™ is designed to replace high risk, complex and expensive procedures currently used by laboratories (e.g. T cells depeletion), with a significantly more effective process at a fraction of the time and cost.

Corporate Development Initiatives to Drive Commercialization Efforts

- Launched a U.S. subsidiary (Cellect Biotech, Inc.) to oversee business and clinical development efforts in the U.S. market.

Key Collaboration Agreements

- Signed a collaboration and material transfer agreement with the denovoMATRIX group of the Technische Universität Dresden (TU Dresden), a leading center for stem cell research in Germany.
- Finalized a strategic manufacturing and supply agreement with Swiss Biotech Center (SBC) to secure production of FasL protein - Cellect's main active ingredient in ApoGraft™ and the ApoTainerTM for planned clinical trials in the U.S.
- Entered into a collaboration agreement with Cell2in, a South Korean company focused on improving the quality of cells. According to the agreement, the companies will conduct scientific evaluations combining Cellect's technology platform ApoGraft™ with Cell2in's proprietary identification technology FreSHtracer™ which monitors stem cell quality by utilizing a fluorescent dye to characterize their oxidative stress state.

Protecting and Enhancing the Company's IP Portfolio

- Granted a patent by the European Patent Office Company for its ApoTainer™ device, which is used in conjunction with its platform ApoGraft™ technology titled, "Devices and Methods for Selecting Apoptosis-Signaling Resistant Cells, and Uses Thereof" and received a Notice of Allowance from the Korean Intellectual Property Office and the Japanese and Australian Offices for Patents & Trademarks for the same patent.
- 2 new patent applications were submitted during 2018 covering further propriatory inventions in connection with mesenchymal stem cells and CAR-T cells expansion processes.

Fourth Quarter and Full Year 2018 Financial Results:

- Research and development (R&D) expenses for the fourth quarter and for the full year of 2018 were $1.08 million and $3.60 million respectively, compared to $0.91 million in the fourth quarter of 2017 and $3.07 million for the full year of 2017. The increase in R&D expenses for the full year of 2018 as compared to the full year of 2017 was primarily due to an increase from purchasing materials and an increase in salaries and related expenses reflecting the progress in our research and development activities and the growth of our employees working on our research and development activities.

- General and administrative (G&A) expenses for the fourth quarter and for the full year of 2018 were $1.26 million and $4.20 million respectively, compared to $0.91 million in the fourth quarter of 2017 and $3.45 million for the full year of 2017. The increase in G&A expenses for the full year of 2018 as compared to the full year of 2017 was primarily due to increase in salaries and related personnel expenses due to an increase in the number of our business development personnel.

- Finance income for the fourth quarter and for the full year of 2018 was $1.34 million, and $2.44 million respectively, compared to $0.92 million in the fourth quarter of 2017 and expenses of $1.01 million for the full year of 2017 respectively. The financial income in the full year of 2018 as compared to the expenses in the full year of 2017, is primarily due to the change in the fair value of the listed warrants granted in our U.S. initial public offering in 2016 and of the unregistered warrants granted in our registered direct offerings in 2017 and in 2018.

- Total Comprehensive loss for the fourth quarter and for the full year of 2018 was $1.00 million and $5.37 million respectively, or $0.008 per share for the fourth quarter and $0.041 per share for the year of 2018 respectively, compared to $0.90 million, or $0.007 per share, in the fourth quarter of 2017 and $7.53 million, or $0.067 per share for the full year of 2017.

Balance Sheet Highlights:

- Cash and cash equivalents and marketable securities totaled $4.75 million as of December 31, 2018, compared to $6.24 million on September 30, 2018, and $7.40 million on December 31, 2017. The change compared to December 31, 2017 was primarily due to a net proceeds of $3.6M in a registered direct offering in January 2018, offset by ongoing operational expenses.

- Shareholders' equity totaled $3.71 million as of December 31, 2018, compared to $4.37 million on September 30, 2018, and $5.03 million on December 31, 2017.

For the convenience of the reader, the amounts have been translated from NIS into U.S. dollars, at the representative rate of exchange on December 31, 2018 (U.S. $1 = NIS 3.748).

About Cellect Biotechnology Ltd.

Cellect Biotechnology (NASDAQ: APOP) has developed a breakthrough technology, for the selection of stem cells from any given tissue, that aims to improve a variety of stem cell-based therapies.

The Company's technology is expected to provide researchers, clinical community and pharma companies with the tools to rapidly isolate stem cells in quantity and quality allowing stem cell-based treatments and procedures in a wide variety of applications in regenerative medicine. The Company's current clinical trial is aimed at bone marrow transplantations in cancer treatment.

Forward Looking Statements

This press release contains forward-looking statements about the Company's expectations, beliefs and intentions. Forward-looking statements can be identified by the use of forward-looking words such as "believe", "expect", "intend", "plan", "may", "should", "could", "might", "seek", "target", "will", "project", "forecast", "continue" or "anticipate" or their negatives or variations of these words or other comparable words or by the fact that these statements do not relate strictly to historical matters. For example, forward-looking statements are used in this press release when we discuss Cellect's intent regarding the future potential of Cellect's technology. These forward-looking statements and their implications are based on the current expectations of the management of the Company only and are subject to a number of factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. In addition, historical results or conclusions from scientific research and clinical studies do not guarantee that future results would suggest similar conclusions or that historical results referred to herein would be interpreted similarly in light of additional research or otherwise. The following factors, among others, could cause actual results to differ materially from those described in the forward-looking statements: the Company's history of losses and needs for additional capital to fund its operations and its inability to obtain additional capital on acceptable terms, or at all; the Company's ability to continue as a going concern; uncertainties of cash flows and inability to meet working capital needs; the Company's ability to obtain regulatory approvals; the Company's ability to obtain favorable pre-clinical and clinical trial results; the Company's technology may not be validated and its methods may not be accepted by the scientific community; difficulties enrolling patients in the Company's clinical trials; the ability to timely source adequate supply of FasL; risks resulting from unforeseen side effects; the Company's ability to establish and maintain strategic partnerships and other corporate collaborations; the scope of protection the Company is able to establish and maintain for intellectual property rights and its ability to operate its business without infringing the intellectual property rights of others; competitive companies, technologies and the Company's industry; unforeseen scientific difficulties may develop with the Company's technology; and the Company's ability to retain or attract key employees whose knowledge is essential to the development of its products. Any forward-looking statement in this press release speaks only as of the date of this press release. The Company undertakes no obligation to publicly update or review any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by any applicable securities laws. More detailed information about the risks and uncertainties affecting the Company is contained under the heading "Risk Factors" in Cellect Biotechnology Ltd.'s Annual Report on Form 20-F for the fiscal year ended December 31, 2018 filed with the U.S. Securities and Exchange Commission, or SEC, which is available on the SEC's website, www.sec.gov, and in the Company's periodic filings with the SEC.

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Cellect Biotechnology Ltd
Consolidated Statement of Operation

	Convenience translation Twelve months ended December 31,	Twelve months ended December 31,		Three months ended December 31,	
	2018	2018	2017	2018	2017
	Unaudited	Audited	Audited	Unaudited	Unaudited
	U.S. dollars	NIS			
	(In thousands, except share and per share data)				
Research and development expenses	3,605	13,513	11,503	4,040	3,404
General and administrative expenses	4,198	15,734	12,930	4,733	3,406
Operating loss	7,803	29,247	24,433	8,773	6,810
Financial expenses (income) due to warrants exercisable into ADS	(2,059)	(7,719)	3,208	(4,784)	(3,614)
Other financial expenses (income), net	(377)	(1,415)	583	(238)	172
Total comprehensive loss	5,367	20,113	28,224	3,751	3,368
Loss per share:					
Basic and diluted loss per share	0.041	0.155	0.252	0.029	0.028
Basic and diluted loss per ADS	0.82	3.11	5.04	0.58	0.56
Weighted average number of shares outstanding used to compute basic and diluted loss per share	129,426,091	129,426,091	111,968,663	130,274,953	120,011,684

Cellect Biotechnology Ltd
Consolidated Balance Sheet Data
ASSETS

	Convenience translation December 31, 2018	December 31, 2018	December 31, 2017
	Unudited	Audited	Audited
	U.S. dollars	NIS	
	(In thousands, except share and per share data)		
CURRENT ASSETS:			
Cash and cash equivalents	4,752	17,809	13,734
Marketable securities	-	-	13,999
Other receivables	218	816	818
	4,970	18,625	28,551
NON-CURRENT ASSETS:			
Restricted cash	90	337	305
Other long-term assets	35	132	173
Property, plant and equipment, net	412	1,544	1,344
	537	2,013	1,822
	5,507	20,638	30,373
LIABILITIES AND SHAREHOLDERS' EQUITY			
CURRENT LIABILITIES:			
Trade payables	237	887	1,703
Other payables	1,070	4,012	2,396
	1,307	4,899	4,099
NON-CURRENT LIABILITIES:			
Warrants to ADS	485	1,816	7,422
EQUITY:			
Ordinary shares of no par value:			
Authorized: 500,000,000 shares at December 31, 2017 and December 31 2018; Issued and outstanding: 120,185,659*) and 130,414,799*) shares as of December 31, 2017 and December 31, 2018, respectively.	-	-	-
Additional Paid In Capital	25,370	95,085	82,839
Share-based payments	3,287	12,319	9,381
Treasury shares	(2,515)	(9,425)	(9,425)
Accumulated deficit	(22,427)	(84,056)	(63,943)
	3,715	13,923	18,852
	5,507	20,638	30,373

*) Net of 2,641,693 treasury shares of the Company held by the Company.

Cellect Biotechnology Ltd
Consolidated Cash Flow Data

	Convenience translation Twelve months ended December 31,	Twelve months ended December 31,		Three months ended December 31,	
	2018	2018	2017	2018	2017
	Unudited	Audited	Audited	Unaudited	Unaudited
	U.S. dollars	NIS			
		(In thousands)			
Cash flows from operating activities:					
Total comprehensive loss	(5,367)	(20,113)	(28,224)	(3,751)	(3,368)
Adjustments to reconcile net loss to net cash used in operating activities:					
Exchange rate difference	(345)	(1,297)	532	(380)	175
Loss (gain) from revaluation of financial assets presented at fair value through profit and loss	(106)	(397)	139	(109)	(1)
Depreciation	122	459	372	122	94
Changes in fair value of traded and non traded warrants to ADS	(2,059)	(7,719)	3,003	(4,511)	1,368
Share-based payment	1,210	4,537	5,384	1,290	(3,647)
Decrease (increase) in other receivables	12	43	470	(214)	107
Increase (decrease) in other payables	213	798	407	1,505	1,040
Interest received	14	54	147	7	-
Net cash used in operating activities	(6,306)	(23,635)	(17,770)	(6,041)	(4,232)
Cash flows from investing activities:					
Short term deposits, net	103	387	19,530	105	-
Restricted deposit, net	(6)	(22)	(165)	-	2
(Purchase) Sales of marketable securities measured at fair value through profit and loss	3,735	13,999	(9,008)	-	(4,001)
Purchase of property, plant and equipment	(175)	(656)	(266)	(13)	(91)
Net cash provided by investing activities	3,657	13,708	10,091	92	(4,090)
Cash flows from financing activities:					
Exercise of warrants and stock options into shares	106	399	1,432	-	169
Issue of share capital and warrants, net of issue costs	3,299	12,360	14,381	-	(510)
Net cash provided (used) by financing activities	3,405	12,759	15,813	-	(341)
Exchange differences on balances of cash and cash equivalents	332	1,243	(679)	373	(175)
Increase (decrease) in cash and cash equivalents	1,088	4,075	7,455	(5,576)	(8,838)
Balance of cash and cash equivalents at the beginning of the period	3,664	13,734	6,279	23,385	22,572
Balance of cash and cash equivalents at the end of the period	4,752	17,809	13,734	17,809	13,734