CELLECT BIOTECHNOLOGY LTD. 23 Hata'as Street Kfar Saba, Israel 44425

July 22, 2016

Suzanne Hayes, Assistant Director Division of Corporation Finance United States Securities and Exchange Commission 100 F Street, N.E. Washington, DC 20549-6010

Re: Cellect Biotechnology Ltd. (formerly known as Cellect Biomed Ltd.) (the "Company") Registration Statement on Form F-1 Filed July 7, 2016 File No. 333-212432

Dear Ms. Hayes:

The purpose of this letter is to respond to your letter of July 12, 2016, with respect to the above-captioned filing. Concurrently with this letter the Company is submitting an amendment to its Registration Statement on Form F-1 (the "Filing"). For ease of reference, the Company's responses are keyed to your comments (inserted in italicized font).

Business

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1. Please revise your discussion of the BIRD Foundation grant to provide the following additional information:

- · Any known material provisions of the Cooperation and Project Funding Agreement;
- The circumstances under which you may be required to repay the grant and how the amount subject to repayment is determined;
- · The milestones that result in an obligation to repay the grant; and
- · Any circumstances which may result in your obligation to repay more than the amount of the initial grant.

Response to Comment 1:

The Company has amended the disclosure on page 63 of the Filing with respect to the BIRD Foundation grant to clarify that while the Company has been informed it is eligible to receive the BIRD Foundation grant, such grant award is subject to the execution of a Cooperation and Project Funding Agreement, which has not yet occurred. The Company is required to execute the Cooperation and Project Funding Agreement no later than September 14, 2016. As such, the Company has not yet received the BIRD Foundation grant and the terms of the Cooperation and Project Funding Agreement are not yet known.

Exhibit Index

2. Please file the amended agreements with Mr. Kasbian and Dr. Yarkoni as exhibits to the registration statement.

Response to Comment 2:

The amended agreements with Mr. Kasbian and Dr. Yarkoni are subject to shareholder approval, which is expected to be obtained at a meeting of the Company's shareholders to be held on July 24, 2016. The Company will file the amended agreements with Mr. Kasbian and Dr. Yarkoni upon obtaining shareholder approval of such amended agreements.

Please contact the undersigned at (+972) (9) 974-1444, or Oded Har-Even at (212) 660-5002 or Shy S. Baranov at (617) 338-2932, attorneys at Zysman, Aharoni, Gayer and Sullivan & Worcester LLP, the Company's U.S. counsel, if you have any questions or require additional information.

Respectfully,

Cellect Biotechnology Ltd.

By: <u>/s/ Dr. Shai Yarkoni</u> Dr. Shai Yarkoni Chief Executive Officer

cc: Oded Har-Even, Esq. Shy S. Baranov, Esq.