

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

Mail Stop 4546

July 27, 2016

Dr. Shai Yarkoni Chief Executive Officer Cellect Biotechnology Ltd. 23 Hata'as Street Kfar Saba, Israel 44425

Re: Cellect Biotechnology Ltd.

Amendment Nos. 1, 2 and 3 to Registration Statement on Form F-1

Filed July 22, 2016, July 25, 2016 and July 26, 2016

File No. 333-212432

Dear Dr. Yarkoni:

We have reviewed your amended registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement again and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any further amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Amendment No. 1 filed July 22, 2016

Business

Apotainer Selection Kit, page 66

1. We note your response to comment 1 from our letter dated July 12, 2016 and the revisions made in response to our comment. Additionally, we note that the BIRD Foundation's website, the BIRD model calls for repayments of 5% of each dollar reported as sales revenue from sales of the product or subsequent products based on the technology developed in the project; 30% from extending licensing rights; or 50% of the revenue earned from the sale of the technology to a third party. Additionally, the website states that BIRD is entitled to repayments of up to 150% of the conditional grant. Please revise your disclosure to provide this additional information or tell us the basis of your belief that the Bird Foundation will revise its program with respect to your grant.

Dr. Shai Yarkoni Cellect Biotechnology Ltd. July 27, 2016 Page 2

Amendment No. 2 filed July 25, 2016 Dilution, page 43

2. Please provide us your computation of \$3.90 pro forma net tangible book value per ADS, as adjusted to give effect to this offering.

Amendment No. 3 filed July 26, 2016 Exhibit 5.1

3. Please revise your legal opinion to provide an opinion with respect to the warrants.

You may contact Keira Nakada at (202) 551-3659 or Lisa Vanjoske at (202) 551-3614 if you have questions regarding comments on the financial statements and related matters. Please contact Scot Foley at (202) 551-3383 or me at (202) 551-3675 with any other questions.

Sincerely,

/s/ Mary Beth Breslin for

Suzanne Hayes Assistant Director

cc: Oded Har-Even, Esq. Zysman, Aharoni, Gayer and Sullivan & Worcester LLP