



DIVISION OF
CORPORATION FINANCE

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

October 29, 2014

Via E-Mail

David Hall
Chief Executive Officer
Replicel Life Sciences, Inc.
Suite 2020 – 401 West Georgia Street
Vancouver, British Columbia, Canada
V6B5A1

Re: Replicel Life Sciences, Inc.
Form 20-F for the Year Ended December 31, 2013
Filed March 18, 2014
File No. 000-50112

Dear Mr. Hall:

We have reviewed your filing 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 within ten business days by providing the requested information or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing any information you provide in response to these comments, we may have additional comments.

Form 20-F for the Year Ended December 31, 2013

Item 7. Major Shareholders and Related Party Transactions, page 30

B. Related Party Transactions, page 31

1. Please revise future filings to provide all information required by Item 7(b) regarding the “trade payables and accrued liabilities” and other related party transactions, including the names of the related parties. Please provide draft disclosure.

Independent Auditor's Report and Consolidated Financial Statements, page 1
Independent Auditor's Report, page 2

2. We note from the opinion paragraph of auditor's report that your consolidated financial statements are presented in accordance with International Financial Reporting Standards. Please confirm to us whether your auditor opined on your consolidated financial statements in accordance with International Financial Reporting Standards as issued by International Accounting Standards Board ("IASB"). If so, confirm to us that your future filings will include an auditor's report that states its opinion on whether your consolidated financial statements are presented in accordance with International Financial Reporting Standards as issued by IASB.

Notes to the Consolidated Financial Statements, page 8
Note 9. Licensing Revenue, page 26

3. We note that you recognized revenue of \$4,120,400 in 2013 related to the upfront payment you received from Shiseido under the Collaboration and Technology Transfer Agreement (the "Agreement"). We further note your disclosure that you did not allocate any of the upfront consideration to the future milestone payments under Article 4 of the Agreement. It appears to us that you have remaining obligations to perform under the Agreement and the upfront payment may be for services to be delivered over the entire contract period and should have been deferred and recognized on a basis that is consistent with the delivery over this period. Please provide us with your detailed analysis that supports your immediate recognition of the upfront payment under the Agreement, pursuant to IAS 18, including the identification of any goods or services that were provided in return for the upfront payment and the Company's remaining obligations to perform.

Item 18. Financial Statements, page 47

4. We note you refer your financial statement to Item 17. Please note that General Instruction E(c)(2) to Form 20-F requires that your financial statements be presented pursuant to Item 18 instead of Item 17. Please confirm to us that you will revise the reference to your financial statements in future filings under Item 18, or tell us why presenting your financial statements under Item 17 is appropriate.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

You may contact Steve Lo at 202-551-3394 or John Archfield at 202-551-3315 if you have questions regarding comments on the financial statements and related matters. Please contact Hillary Daniels at 202-551-3959 or James Lopez at 202-551-3536 with any other questions.

Sincerely,

/s/Tia L. Jenkins

Tia L. Jenkins
Senior Assistant Chief Accountant
Office of Beverages, Apparel, and
Mining