Reviewer’s report

Title: Influence of epigallocatechin-3-gallate in promoting proliferation and osteogenic differentiation of human periodontal ligament cells

Version: 0 Date: 20 Dec 2018

Reviewer: Franz Josef Strauss

Reviewer’s report:

The manuscript by Pei and co-workers investigated the potential effect of EGCG in proliferation and osteogenic differentiation on human periodontal ligament cells (hPDLCs). Based on previous studies the authors hypothesize that EGCG could have an effect on proliferation and osteogenesis in hPDLCs. To test their hypothesis they carried out not only proliferation and osteogenic differentiation assays but also flow cytometry and RT-PCR. However, the manuscript contains many flaws (as listed below) that should be addressed by the authors before the manuscript can be fully evaluated.

* The scientific writing and the English is rather poor, especially the introduction and the discussion. There are many grammatical errors making the manuscript unconvincing and difficult to follow. The aforementioned sections do not reach the minimum level of the Journal. Consequently, the manuscript should be rewritten and proof-read by a native speaker or by someone with more expertise in scientific writing. Yet, the material and methods section is quite acceptable. Additionally, words such as "get rid" are not appropriate in scientific writing and terms such as odontoseisis are currently not common in scientific literature.

* Background:

  o Certain previous findings are not adequately referred to and are not put into context of previous work. For example, Line 47/48 the sentence is misleading, it suggests that periodontitis affects 90% of the global population. Please be careful with the words and use updated references because that reference is from 2005.

* Statistics:

  o How many times were the results repeated? It is not clear. I guess 5-6 times because they assumed a normal distribution. How did the authors test the normal distribution? Two-way ANOVA is a robust test but it requires certain assumptions. With bar charts it is impossible for the reviewer to check the distribution of the data, a box plot would show the distribution of the data in a better way.
The authors mention that p=0.05 was considered statistically significant but in the results section they use a p value < 0.05 as statistically significant, please be consistent.

* Discussion

The authors conclude that EGCG could promote the osteogenesis on hPDLCs in a dose-dependent manner. Surprisingly, the authors did not mention whether there was a difference between the groups, they just mentioned a difference compared to the control. According to the data I suggest the word "might" instead of "could".

In general, all the comparisons were made against the control group and not against the other groups. If that is the case why did they use ANOVA and not t-test of Mann-whitney?

The authors did not mention any limitations of the study. Are there any?

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Unable to assess

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited
Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal