Reviewer’s report
Title: Apical Periodontitis: preliminary assessment of microbiota by 16S rRNA high throughput amplicon target sequencing.

Version: 0 Date: 15 Dec 2017

Reviewer: Yuichiro Kikuchi

Reviewer's report:
This manuscript reports on the comparison of the microbial composition of the periapical granulomas and radicular cysts.
This manuscript has shown some interesting results about the microbial differences in periapical granulomas and radicular cysts, which can help us to understand the mechanism of apical periodontitis and also can be helpful for the therapy.

The experimental procedures seem to be sound. However, some changes are necessary to make this paper more clear and complete.

Major Compulsory Revisions
It is difficult to understand the Figure 1 at a glance. I think it is not possible to simply compare PGs and RCs.
I ask the authors to create another table showing the ratio of bacterial species detected in each PGs and RCs sample.

Minor Essential Revisions
1. There are no page numbers making it difficult for the reviewers to make specific comments based on page numbers.

2. (Title)
I've never seen the expression of "16S high throughput amplicon target sequencing".
For example; Change "16S high throughput amplicon target sequencing" to "16S rRNA high throughput amplicon target sequencing".

3. (Abstract, line 6-7)
Change "space." to "space.". (period: red→black)

4. (Abstract, line 26-27)
Change "Staphilococcus" to "Staphylococcus".

5. (Background, line 28-29)
Change "Aps" to "APs".

6. (Background, line 36-37)

7. (Materials and methods, study design and patients, line 18-22)
Change "the Ethics committee of the Dental School" to "the Ethics committee of the Dental School, University of Turin".
And what is the committee's reference number?

8. (Results, first paragraph, line 45-52)
Delete "Apical periodontitis consisted of----------while RCs by its presence." These sentences were not results.

9. (Results, second paragraph, line 1)
It is to be noted that all patients were older than 18 years and were in good health conditions as per inclusion criteria [Table 1].
16S rRNA gene sequencing. A total of 163.832 raw reads were obtained after the sequencing. What is "16S rRNA gene sequencing"?

10. (Results, second paragraph, line 12-13)
Change "102 OTUs" to "202 OTUs".

11. (Results, third paragraph, line 15-19)
Alpha-diversity indices (Table 1) showed no difference on the level of complexity (P > 0.05) of RCs samples compared to PGs. Is "Table 1" correct?

12. (Results, six paragraph, line 5-6)
Is "Fig. 4" correct?

13. (References)
Please correct the notation of all author's name and page numbers as shown below.
(ex) BMC Oral Health example reference style:
Article within a journal

14. (Table 1)
Sample code " RC_2" is used twice. Please correct this.
Sample code " RC_4" Change "13.5" to "13.5".

15. (Figure 1)
The resolution of the figure is quite low, so I don't read the letters.
Replace this figure with still higher magnification photos.
And, there is no description about the difference of the red box and the blue box in figure legends.

16. (Figure 2 legend)
Change "granulom" to "granuloma".

17. (Figure 3)
The resolution of the figure is quite low, so I don't read the letters. Replace this figure with still higher magnification photos.
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.
Yes

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

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:
Acceptable

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