Reviewer's report

Title: A molecular survey of S. mutans and P. gingivalis oral microbial burden in human saliva using RE-PCR within the minority population of a Nevada dental school.

Version: 3 Date: 7 April 2012

Reviewer: Ryota Nomura

Reviewer's report:

Major Compulsory Revisions:
1. The RE-PCR methods used in this study seem to be appropriate for detection of P. gingivalis, which is considered to be difficult to isolate and quantify. On the other hands, the detection rates of S. mutans using those methods were quite low. Thus, it is possible to speculate that detection of S. mutans isolated on Mitis-Salivarius agar might be more sensitive than that with RE-PCR. In other words, it is easier to isolate S. mutans as compared to P. gingivalis. Therefore, the authors should describe the specific advantages of RE-PCR to strengthen the objective of the present study, especially for detection of S. mutans.

2. The authors focused on analyses of patients who visited the orthodontic clinic. This reviewer is concerned about differences in bacterial species between orthodontic and non-orthodontic patients. The authors should justify the subjects selected for analysis in the present study.

3. Lines 130-131: Why did the authors use saliva samples only containing a minimum of 3.5x10^5 cells? When considering the sensitive methods like PCR used in the present study, those amounts were quite large, as detection is possible with much smaller samples. The authors should clarify this point.

4. The authors should include more explanations relevant references regarding the RE-PCR methods as that is likely to be unfamiliar to most of the readers of the journal.

5. The authors describe clinical aspects in most parts of the Discussion section. However, that section should focus on the results obtained in the present study, especially with the RE-PCR methods employed. In addition, the advantages and weak points of RE-PCR should noted, as those would be beneficial for readers who are unfamiliar with the technique.

Minor essential revisions:

Methods: There are too many subheadings in the Methods section. Those could be merged in the revised version for the readers to better understand the entire Methods section.

Lines 215-254: A subtitle is needed for this portion. In addition, most of the
information described here should be presented in the Methods section.

Line 360: The word “addition” in this sentence should be written as “additional”.

Table 1.: The total number of subjects may be incorrect. Please check again the number of subjects in each group.

Table 2.: The phrase “samples (n)” should be changed to “samples (n=52)”.

Discretionary Revisions:
The reviewer wonders whether there was any correlation between detection of P. gingivalis/S. mutans and subject age.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests