Reviewer's report

**Title:** Transglucosidase improves the gut microbiota profile of type 2 diabetes mellitus patients

**Version:** 3  **Date:** 26 January 2013

**Reviewer:** Antonio Gasbarrini

**Reviewer's report:**

This is an interesting, well written paper assessing gut microbiota changes in diabetes patients after the treatment with transglucosidase.

**Major compulsory revisions**

1. In the Subjects and Methods section the Authors stated that the enrollment criteria and study design were previously described. Are the patients enrolled in this study the same of reference 1? Please specify and add more details about the study design and the enrollment criteria.

2. The Authors did not provide any explication about the evaluation of the sample size, about the number of healthy controls and about the choice of transglucosidase dosage. Please provide them.

3. The Authors should describe what kind of diabetes medication (including the dosage) are used throughout the study.

4. In the Results section the Authors did not specify the difference in Bacteroides/Firmicutes ratio between diabetic patients and healthy controls, but in the Discussion section They stated that smaller Firmicutes populations were observed in T2DM patients than in the healthy population. Please provide more details.

5. The major limitation of this study is that the Authors did not show any correlation between gut microbiota modification and metabolic state of the patients. Does modification of gut microbiota correlate with reduced levels of HbA1c?

**Minor essential revisions**

6. Please provide a table showing individual results for any patients and not only mean values and HbA1c levels before and after treatment.

**Discretionary revisions**

7. The abstract should specify how many healthy controls the study included

8. In the Subjects and Methods section the Authors stated that patients received treatment after every meal. Please specify that patients received treatment 3
times a day after main meals.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests