

## **Reviewer's report**

**Title:** Associations between dietary habits and body mass index with gut microbiota composition and fecal water genotoxicity: an observational study in African American and Caucasian American volunteers

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**Reviewer:** Maria Carmen Collado

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#### Comments to the Author

Several reports have been described differences in intestinal microbiota according to age, diet, substances as antibiotics or drugs, healthy status and even among different countries. For these reason, this manuscript entitled "Associations between dietary habits and body mass index with gut microbiota composition and fecal water genotoxicity: an observational study in African American and Caucasian American volunteers" investigates the influence on dietary habits on gut microbiota composition and cytotoxicity or genotoxicity of fecal water in order to detect differences that will give answers about the increment of colorectal cancer of African Americans compared to Caucasian Americans.

A total of 98 subjects were included in the study. Results showed no significant differences on dietary habits and also in genotoxicity of fecal water. However, dietary fiber, calcium, total fat and heterocyclic amines correlated with differences in microbiota composition. Total bacterial levels and raw counts of Bacteroides were increased in African Americans. In addition, in contrast to previous studies, the BMI was not associated with proportions of Bacteroides and Firmicutes.

The paper is well structured and well written. Objectives are clear, concise and also, the possible application is described. Methodology section requires more detailed information, important information has not been provided. Why the authors did not use all subjects included in the study for all tests?. The weak point of this study is the low number of subjects in some analysis as fecal water genotoxicity (n=21 AA and 22 CA) and gut microbiota analysis. In addition, it would be nice to include a table with the levels of bacteria from fecal samples to compare the microbial composition between AA and CA by use of FISH and qPCR techniques. The statistical analysis must be included on the table too. The experimental design is clear and also, the procedure but it would be nice to include more information because some part is unclear. Figures must be clarified, it would be accurate to include detailed information on the legends. Regarding the comparison between obese and lean subjects, it would be interesting to separate on AA and CA in order to know if there are differences on both groups. If not, please, include the criteria used to select the subjects for BMI vs microbiota comparison. Discussion needs also more information. Further

studies are needed. The reviewed paper provides novel information and open new research possibilities in the study of dietary habits and their relationship with human health.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

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