Reviewer's report

Title: Dietary total antioxidant capacity in relation to serum C-reactive protein among young Japanese women

Version: 1 Date: 23 June 2012

Reviewer: Helen Hermana Hermsdorff

Reviewer's report:

The present manuscript explores relationships between dietary TAC intake and CRP concentrations. The paper is well prepared, but some points must be addressed.

Major revisions:

1. The authors have focused the relationship of dietary TAC with CRP concentrations in the title, abstract, and introduction of manuscript, but other important point should also be highlight: the calculation of dietary TAC by different assays, which is an original outcome, and has been commented in the manuscript discussion.

In this context, the title would change to “Dietary total antioxidant capacity from different assays in relation to serum C-reactive protein among young Japanese women”. Lines 2-3, 20-21 (page 3), line 25 (page 4), line 1 (page 5), and lines 9-12 (page 13) must be changed.

2. Regarding statistical analyses, the authors used Student t’s test for continuous variables in the table 2. However, there are variables with high SD (including dietary TAC related), suggesting non-normally distribution. Thus, the authors should perform a normally distribution test before comparison between groups, and use adequate test according to normally distribution of each variable (Student t’s or Mann-Whitney signed-rank test). In addition, data as median and interquartile interval could be more appropriate in some cases.

3. Dietary fat as well as some types of fatty acid have been implicated in changing of plasma CRP. However, the inclusion of polyunsaturated fat intake in the regression models is not justified appropriately. I do not understand why the authors only used PUFA as an adjusting covariate, and not dietary total lipid (g/d) or trans fatty acid (g/d), for example. In this context, more information about the macronutrients, types of fatty acids, fiber, Japanese food-groups, according to dietary TAC (divided by its median or tertiles) should be included. As suggestion, the author can include a table with these informations.

4. The authors also should discuss other relevant papers in the manuscript’s discussion: 1) a review article (J Nutr 2007; 137:1493-1495), where the validity of TAC as a measure of functional efficacy of antioxidant defense in vivo was questioned; 2) a original paper (Nutr Metab (Lond) 2011; 8:59) that comments the relationships of dietary TAC with lipid biomarkers, plasma TAC and anti-inflammatory pathways.
Minor revisions:
- Delete lines 17-18 – page 4 – unneeded information
- Delete body height and weight from table 1- unneeded information

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.