Reviewer's report

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

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Reviewer: Nicoletta Pellegrini

Reviewer's report:

The present manuscript explores the relationship between the total antioxidant capacity (TAC) of diet and the serum C-reactive protein (CRP) level in young Japanese women. The manuscript is well prepared and well written and can contribute to better understand the role of TAC as a tool for investigating the potential health effects of dietary antioxidants occurring in mixed diets on a marker of inflammation associated with cardiovascular disease, type 2 diabetes mellitus and cancer. As stated by the authors, the worth of the present manuscript is also to have explored the effect of dietary TAC on CRP in a non-western population.

This reviewer has only a few questions and comments that they should be addressed before the manuscript can be considered for the publication (Major Compulsory Revisions):

1. based on the literature quoted in the manuscript (line 1, page 8) the CRP levels between 1 and 3 mg/L are reported as an average relative risk category. Why did the authors decide to consider serum CRP concentrations # 1 mg/L elevated?

2. the authors discussed in the Discussion section (page 11, lines 9-11) that different food groups contributing the dietary TAC in western populations and in their group. However, they did not group the single food items in food groups (e.g., all the fruits in a fruit group) missing the possibility to find that other foods can contribute to the dietary TAC. This reviewer suggests to calculate also the sum contribution of these food groups to the overall dietary TAC.

3. this reviewer disagrees with the author’s statement that the FRAP may be the most reliable of the four methods for assessing dietary TAC (page 10, lines 24-25). The different results obtained for other TAC assays is probably due to the different antioxidant mechanisms measured by these different assays because the major sources of dietary TAC are the same among the TAC assays and the TAC values of these food items are available in the literature (i.e., teas, coffee, chocolates). Please, reconsider the paragraph.

Minor Essential Revisions

Trolox is a commercial name, please use the capital letter throughout the text.

Page 5, lines 15-16: the cut-off for high energy intake sounds incredible high for
young women, please justify this value.

Page 6, line 21: the TAC values are usually expressed in mmol Fe++ per 100 g for FRAP assay. Please correct that in the text and in the tables.

Page 7, lines 14-15: the sentence is not clear, please rephrase.

Table 1: this should be redesigned by dividing the food items in food groups (e.g., fruits, vegetable, non-alcoholic beverages and so on) and calculating the sum of the contribution of these food groups to the overall dietary TAC.

**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