Reviewer’s report

Title: Effects of short-term fructooligosaccharide intake on equol production in Japanese postmenopausal women consuming soy isoflavone supplements: A pilot study

Version: 1 Date: 31 August 2012

Reviewer: Johanna W Lampe

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MAJOR COMPULSORY REVISIONS

INTRODUCTION

1. The introduction does not adequately address the uncertainty of the knowledge surrounding associations between diet and equol-producer status. For example, there have been many additional studies that do not support the findings of Lampe et al (ref 8) and this should be acknowledged. In addition, given that this study is in a Japanese population, a focus on studies of diet and equol-producer status that have been conducted in Japanese would be more relevant to the work presented here.

METHODS

2. The authors indicate that the purpose of the study was to determine whether FOS increases equol production in equol producers and stimulates equol production in non-producers. The reliance on a spot urine sample to quantitate changes in equol production as a result of the intervention seems inadequate to address the aims of this study. This needs to be better justified.

Details on several aspects of the methods also seem to be missing.

3. Page 4, line 3: Even if exclusion criteria are the same as another study, some details still need to be provided here.

4. Page 4, line 8: Did the equol-to-daidzein ratio clearly delineate equol producers from non-producers?

5. Page 4, line 8: How were equol and daidzein measured (assay) to determine equol producer status?

6. Page 4, line 15: What was the amount of daidzein in the isoflavone supplement? The only mention is total isoflavones as 25 mg aglycone. Also, was any guidance provided as to the time of day at which supplements should be consumed? This might affect the fasting serum concentrations?

7. Page 4, line 21: What was the level of quantitation of the equol assay?

8. Page 4, line 26: Again, there is reference to measuring daidzein, but no indication as to method used.

RESULTS AND DISCUSSION
9. Page 5, line 6-7: 34 of the original 43 recruited remained. That is a loss of 9 women. What happened to the other 4 (above the 5 who withdrew for personal reasons)?

10. Given the discussion and reference to existing studies, it is not clear how likely it would be that FOS would stimulate equol production in non-producers in your study? Presumably, the rats studied with FOS and daidzein (Ohta et al 2002) already had the capacity to produce equol? Further, just because certain species of Lactobacillus and Bifidobacteria have been implicated in conversion of daidzein to equol, does not mean that a supplement that increases these group more generally would affect the capacity to produce equol. This needs to be more clearly acknowledged.

MINOR ESSENTIAL REVISIONS

Table 1.

11. Units for body mass index needs to be included

12. The baseline serum equol concentrations for the two groups should be included.

13. Protein units should be (g), not (mg)

Table 2:

14. The ANOVA data in the table are very difficult to follow. Presenting the results in the text may be more effective.

15. Please do not use the term “microflora.” This is technically a misnomer (“flora” relates to plant kingdom) and the microbiology community is trying to get authors to use the term “microbiota” instead.

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.