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: 17 October 2012

Reviewer: Theresa Larkin

Reviewer's report:

Overall, a good study although very limited in time duration and therefore limited interpretation of results. Study design good and analyses appropriate, with additional discussion needed as outlined below.

Major Compulsory Revisions

1. Classification of equol vs. non-equol producers? The baseline plasma samples contained similar levels of equol between producers and non-producers. Can the authors include the baseline levels of urinary equol upon which they determined their classification into producers or non-producers.

2. In the discussion: “these groups tended to be higher after 1 week of isoflavones and FOS or sucrose (control) intervention than at baseline (P = 0.343 and 0.120, for FOS and control groups, respectively”. I don’t think you can call p values of >0.1 a trend or even comment on this tendency in this way. This is a very non-significant result and should be interpreted appropriately.

3. From the discussion: “This result is consistent with previous studies [7, 15] that have shown that the differences in the frequency of equol producers in a population are related to soy food intake.” What result is being discussed here? You cannot discuss your non-significant finding here in relation to it showing a difference in frequency of equol producers. These references do not agree with your findings – do they contradict what you found? You have not made comment on any changes in the frequency of equol producers in your study – do you have this data that should be included?

4. How were participants’ diets monitored? It was stated that extra soy foods were removed, but that usual diet (which could be high in soy foods/isoﬂavones) was maintained. Can the author comment on or clarify this in more detail.

5. Please discuss more the interaction effects.

6. Table 1: Can the authors please confirm and comment more on the significant difference in fat intake between equol producers and non-producers in relation to other studies?

Minor Essential Revisions

1. Abstract line 3: can be attributed to their a person’s ability to produce

Introduction line 8: please make the same change as above. It is not the
isoflavones’ ability to produce equol, it is the person’s (or the gut microflora) ability to do this.

2. In abstract, lines 11 and 12: “Healthy postmenopausal women were classified as equol producers or non-producers and assigned to FOS or control groups, respectively”. This is misleading – at the moment it says that equol producers were assigned to FOS and non-equols assigned to control groups. Please re-write or delete this; just ensure the details are covered in the sentence on the description of the randomised, crossover control.

3. Intro line 9: replace “although” with “indeed” or “because” or “since”

4. Intro line 16: replace “is poorly” with “are poorly”

5. Move the sentence: “Thus, FOS as well as dietary fiber is well known as prebiotics [9, 10]” to earlier in this paragraph to link between diet and gut microflora, and the effects of prebiotics on this, then you can continue onto FOS specifically.

6. Methods: it would be useful to include briefly the exclusion criteria for the context of this study.

7. Methods lines 7 – 9: Modify the following paragraph: All women provided their written informed consent to participate in the study. Subjects were classified as equol producers or non-producers based on their urinary equol to daidzein concentration ratio [equol producer: (equol/daidzein) log > -1.70], which was determined from urine samples. Urine samples were collected 9 from the subjects 1 day after they the subjects consumed food containing 22 mg soy isoflavones.

8. Clarify the following: “washout periods, each lasting 2 weeks

9. Methods, line 15 and 16: How does the 37 mg of conjugates match with 25 mg aglycones?

10. Results: line 20 replace “and” with “or”

Quality of written English: Needs some language corrections before being published

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