**Reviewer’s report**

**Title:** Novel essential amino acid supplements enriched with L-leucine facilitate increased protein and energy intakes in older women: a randomised controlled trial

**Version: 0 Date: 28 Oct 2017**

**Reviewer:** Carol Johnston

**Reviewer’s report:**

As reviewed by the authors, a large portion of older individuals (particularly women) do not meet dietary protein recommendations which may impact frailty rates and contribute to sarcopenia. There is emerging evidence that the EAA leucine in particular is crucial to the regulation of muscle protein synthesis. This report examined the acute effect of a leucine-rich essential amino acid supplement on appetite perceptions and ad libitum food intake in older women. There is little research currently available regarding the palatability of such a supplement and whether this type of supplement impacts appetite and concurrent mealtime energy intake. This is interesting research and the trials were carefully planned and included appropriate outcome measures. Some clarifications are necessary as outlined below.

1. The supplement ingredients need to be clearly stated. What are the sources of the macronutrients for each of the supplements? Adding a table clearly depicting the ingredients of the supplements would be helpful. Were the supplements purchased from a commercial vendor? The source of the supplements must be provided. Does the micronutrient content of the supplements differ?

2. In the Abstract, the supplements should be more clearly described. As stated, the Bar seems not to be rich in EAAs - only the Gel.

3. Verbal confirmation of the diet, fluid intake, and exercise were obtained from participants on the test days (page 5 line 38). These compliance rates should be reported in the results section.

4. According to the Control treatment, the amount of the test meal (porridge oats) consumed for breakfast seems low - these individuals were fasting - a more reasonable intake for breakfast seems to be twice this amount. Can the authors comment on the palatability of the porridge?

5. For the statistical analyses, were data normally distributed to permit parametric testing?

6. Please cite the 'previous research' that was used to determine sample size (page 10 line 9). What was the SD used for these calculations?

7. In the Discussion (page 14 line 7), the statement 'instead of protein' seems inaccurate. The Bar contained protein in addition to the EAA, correct?
8. The authors need to discuss the study limitations and delimitations. For example, the sample size is small, and the women were normal weight, free living and healthy. It is not known whether EAA supplementation with a different breakfast menu, or at the lunch or dinner meals, would have the same results. Older men may respond differently.

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