Reviewer's report

Title: A pilot placebo-controlled, double-blind, and randomized study on the cognition-enhancing and anti-stress benefits of a proprietary chicken meat ingredient in healthy subjects

Version: 3 Date: 18 June 2013

Reviewer: Jonathan Ling

Reviewer's report:

Thanks to the authors for this revised version of their manuscript.

Major Compulsory Revisions

Abstract

The first section of the background (from ‘Globalization...’ to ‘On the other hand...’) should be deleted as this information is not appropriate for an abstract. The abstract should start with ‘It has long been postulated’.

We do not know whether the participants were mildly stressed as none of the data related to the BDI are presented anywhere in the manuscript.

Background

P3 Where is the evidence on ‘accelerated ageing’? A reference to some of the debate on the ethical and safety concerns would be helpful. ‘Swirled vigorous debate’ is a slightly odd construction. There is no reference to any ‘evidence supporting the efficacies of foods and supplements in cognition enhancement’. It is difficult for anything to be entirely conclusive (end of P3), however several studies have found facilitation effects for cognitive tasks and at least some of these should be referenced.

P4 ‘In the preclinical analyses, CMI-168 demonstrated selective cognition-enhancing efficacies, particularly in the areas of working memory and spatial memory.’ Is there a reference that could be cited to support this point? Where the facilitation effects compared to EOC – did they differ?

Methods

Subjects – the number of participants should be clearly stated in this section. Details of stress should not be presented here (as presumably this was not an inclusion criterion – if it was then we need to know much more about the selection process). We also need to know how many males and females there were – much recent research has highlighted sex differences in cognitive abilities so this would be helpful for future researchers. In my previous review I asked that further information related to recruitment be added, and other information:

“This information should be placed in the subject section, and not in a separate section on sample characteristics in the results. Where were they recruited from?
How were they recruited? Did any drop out (we only have the final numbers in the study presented in the results)? Was compliance measured (e.g. were participants encouraged to return any unused capsules to the research team)? Were participants asked if they had complied?”

Information about whether participants were asked to return capsules has been added, however other information is still needed.

Thanks to the authors for clarifying that participants were on a mixed diet – presumably this means that they consumed meat - this should be added to the text. How was this data collected? I don’t see a reference to this in the materials section.

Study Design

It is good to know that participants were asked to return any unused materials – did any bring some back?

Although I understand the authors’ reasons for including the digit span backwards task, it is unusual to only give this and omit the forwards version. Was data also collected on this? If so, this should be reported. If it wasn’t a justification for why it was excluded should be made.

Sample size

Thank you for adding reference to the sample size, however could you also add the appropriate details of this calculation, anticipated effect sizes, power, confidence level, etc.

Results

Psychological profiles

The participants completed a battery of tests. These should have allowed the researchers to determine whether they were stressed; it seems odd to have relied on the judgement of psychiatrist to make this judgement and omit reporting of the BDI, etc. which were detailed at length in the method. Can these data please be added.

(1) Attention and working memory

There is much detail on digit span tasks; this should be moved to the method (everything down to ‘As shown in Figure 1’).

Were there any sex differences?

Discussion

Statistical references (eg p < .001) should be removed from the discussion.

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' below