Reviewer's report

Title: An investigation into the ameliorating effect of black soybean extract on learning and memory impairment

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Reviewer: Tran Manh Hung

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Minor Essential Revisions

BMC Complementary and Alternative Medicine
Title: An investigation into the ameliorating effect of black soybean extract on learning and memory impairment
Authors: Ji Hee Jeong, Hyeon Ju Kim, Seon Kyeong Park, Dong Eun Jin, O-Jun Kwon, Hyun-Jin Kim and Ho Jin Heo

The paper reports that non-anthocyanin fraction derived from black soybean seed coat extract inhibit the neuronal cell death caused by Aβ-induced cytotoxicity, and improve Aβ-induced learning and memory deficits. In vivo study, the results from pre-treated with sample indicate that the non-anthocyanin fraction displayed a significant anti-amnestic effect in the Aβ-induced mouse model. The potential neuroprotective effects of the non-anthocyanin fraction are linked to inhibition of AChE and MDA production in mice brain tissue with Aβ-induced amnesia. Three main components as procyanidin B1, epicatechin and procyanidin B2 were identified from this fraction by UPLC/MS. The author suggested that non-anthocyanin fraction including epicatechin as a main contributor might be effective in preventing the onset of learning and memory impairment, and in ameliorating cognitive defects in the early phases of neurodegeneration.

This manuscript is one of the scientific evident that confirms the effects of black soybeans on neuron cell culture and mice model. The content looks good to attract our readers, and good enough to publish in BMC Complementary and Alternative Medicine journal. I have no more options but to recommend publication after some minor re-corrections.

1. Please use abbreviation for non-anthocyanin fraction (maybe NAF or other..)
2. Please express statistical analysis in figures
3. Please explain why do you use this concentration range as 5, 10, and 20 mg/kg in vivo test, what basically information that makes you select these concentrations to do In vivo tests?
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