Reviewer's report

Title: Cynomorium songaricum extract enhances novel object recognition, cell proliferation and neuroblast differentiation in the mice via improving hippocampal environment

Version: 2  Date: 8 October 2013

Reviewer: Changjong Moon

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The manuscript by Yoo et al. entitled “Cynomorium songaricum extract (CSE) enhances novel object recognition, cell proliferation and neuroblast differentiation in the mice via improving hippocampal environment” describes the beneficial effect of chronic CSE treatment on memory ability and hippocampal neurogenesis in experimental animals. The data appear, for the most part, to be reasonably robust and are presented clearly and without over-interpretation. Nevertheless, attention to some issues would make the manuscript more compelling.

1. Is there any literature revealing that CSE promotes cell proliferating in vivo or in vitro? The authors need to show the references and introduce the results according to the references in the Introduction section. The information might support strongly this study.

2. More detail on the histomorphometric approach to quantify BrdU and PSA-NCAM-positive cells is needed.

3. The author should inform the primer sequences, accession numbers and product lengths of BDNF and a housekeeping gene used for quantitative real-time RT-PCR as well as a housekeeping gene served as an internal normalization control (GAPDH or beta-actin).

4. The discussion is very complicate and speculative. They need to discuss this study more carefully based on their results.

5. In the conclusion, the authors described a sentence. It is too short. Usually, the conclusion is comprised of sentences of 3 and over, which include the summary and suggestion based on their results).

Level of interest: An article of importance in its field

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.