Reviewer's report

Title: Effect of three different cultivars of Lepidium meyenii (Maca) on learning and depression in ovariectomized mice

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Reviewer: Shrinivas SK Kulkarni

Reviewer's report:

The authors have observed the effect of three different cultivators of Lepidium meyenii (Maca) on learning by using water finding task and depression by using forced swim test in mice. However, there are certain shortcomings that need clarification.

1. What was the weight of the animals that were used in the present study? Authors have measured the weight of the uterus in milligram only. Generally, the organ weights are always calculated as mg or g organ weight/kg of the body weight comparison with each other.
2. What was the route of administration of ketamine-xylazine anesthesia? Whether these two solutions were mixed in the same syringe or administered separately.
3. Have the authors carried out prior randomization of the animals before carrying out the experiments.
4. At what time of the day experiments were carried out.
5. What was the mortality rate in the present study?
6. How the dose selection was done as 1g/kg/day for 21 days. What was the LD50? Maca has been reported in the scientific literature to have a low degree of acute oral toxicity in animals.
7. Why Maca was administered nasogastrically than oral route of administration. This may be discussed.
8. Any biological study needs the use of standard reference drug for comparison of the effect on learning and antidepressant activity. Without this data the validity of the test procedure is questionable.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests

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

Declaration of competing interests:

'I declare that I have no competing interests'