Reviewer's report

Title: Evaluation of Anthelmintic potential of the Ethiopian Medicinal Plant Embelia schimperi Vatke in vivo and in vitro against some Intestinal Parasites

Version: 2
Date: 10 March 2015
Reviewer: Lyndy McGaw

Reviewer's report:

Major compulsory revisions:

1. The most recent guidelines of the OECD for the in vivo acute toxicity study should have been followed as the method used is rather outdated.
2. It appears that some available literature concerning the known chemical constituents of the plant species under study was not consulted and a more comprehensive literature search needs to be carried out.
3. Why was the phytochemical screening performed as it is not discussed in detail and the relevance is lacking?
4. In the Methods section, where the phytochemical screening tests are described, what are the references for the techniques used?
5. How many replicates were carried out at each concentration for the in vitro anthelmintic assay?

Minor essential revisions:

1. In the methods section of the Abstract, the species of hookworm tested needs to be mentioned.
2. In the results section of the abstract (final sentence) it should be made clear which assay is being referred to.
3. Is a dose of 1000 mg/kg of crude extract (or 750 mg/kg of the purified embelin) realistic to achieve in humans? This should be discussed in terms of applicability of the extract in human health.
4. In line 122, more information should be supplied with regard to the hot extraction of embelin. What temperature was used, and what volume of ethyl acetate extracted the fruit powder?
5. In line 143, what species of hookworm were tested, and were other species such as roundworms also present? Where was the stool sample obtained (no detail are given in this section)? In line 148, give the speed of centrifugation in “x g” rather than “rpm” and note the type and make of instrument used. With what was the concentration of larvae adjusted – a type of buffer?
6. In line 153, from which company was the albendazole sourced?
7. In line 156, what type of agar was used?
8. Please include protocol numbers for the ethical approvals obtained.

9. In the Results section where the phytochemical analysis is described, what is meant by “chromophores” and “free-quinones” as these are not classes of compounds. The NMR spectra of embelin must have been previously published – insert a reference to which the chemical assignments can be compared.

10. The Discussion section (line 257) refers to bioassay-guided fractionation being used to isolate embelin but this was not the case according to the Methods section. Please correct this.

11. Also in the Discussion, reference is made to other anthelmintic studies on the extract and embelin but more detail needs to be given and this section could be more clearly explained.

12. In the Conclusion, care should be taken not to state that the results of the in vitro study and an in vivo mouse assay can be extrapolated to efficacy in humans as many other factors play a role, for example dosages could be quite different, and human studies have yet to be carried out.

13. Grammar needs minor revision by a native English speaker.

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

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.