Reviewer's report

Title: Extracts of Euphorbia hirta Linn. (Euphorbiaceae) and Rauvolfia vomitoria Afzel (Apocynaceae) Demonstrate Activities Against Onchocerca volvulus Microfilariae in vitro

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Reviewer: Mike, Yaw Osei-Atweneboana

Reviewer's report:

1. General Comment
The authors of this manuscript investigated the effect of medicinal plants against the causative agent of onchocerciasis, O. volvulus. They assessed the effectiveness of Euphorbia hirta and Rauvolfia vomitoria against the immature stage of O. volvulus, the microfilariae by in vitro systematic evaluation. The methods used were appropriate and able to address the research questions. Also the data generated was sound and analysis carried out appropriately.

The authors concluded that the extracts from both plants possess antifilarial property, and ethyl acetate extract of E. hirta was found to be most effective, however this extract showed significant level of toxicity to monkey kidney cell lines. Also, the crude extract of E. Hirta was found to be effective and least toxic to the monkey kidney cells lines.

This is a valuable contribution to the field of ethnomedicine and the control of infectious diseases including onchocerciasis, however, it would have been more interesting if the authors had also assessed the efficacy of these plant products against adult O. volvulus. This is necessary because the recent report of emerging ivermectin resistance is occurring in the adult Onchocerca volvulus and also the current paradigm shift from control to elimination of onchocercasis requires a macrofilaricide.

MAJOR COMPULSORY REVISIONS

Results
2. The results section is relatively long and not easy to read and follow, every attempt should be made to re-write and make it clearer.

DISCRETIONARY REVISIONS

Discussion
3. The authors explored the literature to enable them show the safety and usefulness of the crude extracts of E. Hirta for treatment of some diseases and possibly onchocerciasis. I would like to see the authors exploring more literature to enable them relate the safety and usefulness of some of the extracts of E. Hirta found to be effective than the crude extracts
MINOR COMMENTS

BACKGROUND
4. Para 1 ln 7 - The phrase “Speculations of resistance of the parasite to this drug have recently emerged” should be reworded.

METHODS
Under sub-section: measurement of microfilaricidal action of extracts (page 5)
5. Para 1 ln 1 & 2 –
“One millilitre of each extract and drug preparations was delivered into three wells of 24-well plastic plate.” should read “One millilitre of each extract and drug preparations was delivered in triplicates into a 24-well plastic plate”

Under sub-section: inhibition determination of Euphorbia hirta extracts on monkey kidney cells (page 6)
6. Para 2 ln 7 & 8
“The formazan produced in each of the wells was transferred into corresponding wells of another microtitre plate and the optical density (OD) determined spectrophotometrically at an absorbance of 510 nm. Readings were taken in duplicate.”.

should read “The formazan produced in each of the wells was transferred into corresponding wells of another microtitre plate in duplicates and the optical density (OD) determined spectrophotometrically at a wavelength of 510 nm.

Note: replace “absorbance” with “wavelength “

DISCUSSION
7. Para 1 ln 1 – “plantl” is misspelled, should be “plant”

CONCLUSION
8. Para 1 ln 2 cl 2 - delete “extracts” in column 2

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

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