Reviewer’s report

Title: Potential in vitro anti-allergic, anti-inflammatory and cytotoxic activities of ethanolic extract of Baliospermum montanum root, its major components and a validated HPLC method

Version: 0 Date: 06 Dec 2018

Reviewer: Sikiru Balogun

Reviewer's report:

In this manuscript titled Anti-allergic, anti-inflammatory and cytotoxic activities of ethanolic extract of Baliospermum montanum root, its major components and a validated HPLC method" the authors claimed to have investigated the anti-allergic, anti-inflammatory and cytotoxic activities of the crude ethanolic extract of the root of B. montanum. In addition, they also conducted isolation of major phytochemical components of the same. They also mentioned to have developed and validated HPLC method for the determination of the crude extract's major compounds. The activities investigated were all in vitro related, and these include inhibitory effect of the crude extract on β-hexosaminidase released from RBL-2H3 cells, inhibition of nitric oxide (NO) production from RAW 264.7 cells and cytotoxic activity against cancerous liver cell lines (HepG2 and KKU M156) using sulforhodamine B (SRB) assay.

Although, the study is interesting, there are serious concerns to be addressed.

English language issues

The manuscript is filled with serious grammatical and spelling errors. These make the reading and understanding if the manuscript very difficult. I suggest that the authors make use of the service of a native English speaker for English corrections.

Title

I believe the use of the terms are misleading, since only in vitro activities were studied and no in vivo effects were shown. It would therefore be out of place to state that the activities studied represented true anti-allergic, anti-inflammatory studies, since these are multifactorial in vivo conditions.

I therefore suggest the title be changed to something like this "Potential in-vitro anti-allergy, anti-inflammatory, ….."
Background

There is need to revise the way it has been written. For example in line 89 p 5, the sentence should begin by "Previous preliminary…"

Anti-allergic activity

As Passante et al (2009) concluded "While RBL-2H3 cells may be useful as a model for mast cell IgE-mediated degranulation, other aspects may not be representative and they may share similarities with basophils rather than with other histamine-releasing cell types." Based on this premise as well as others, it would have been better if the authors could include one or more in-vitro model or at best, one in vivo model of the disease in question.

Anti-inflammatory activity

This title may be changed to in vitro anti-inflammatory activity. The authors should also carefully review the language errors in all the description of methods as well.

Results

Isolation and identification of pure compounds

Perhaps the authors wish to state on page 14 line 281 (Additional File 1) as supplementary file.

It is not clear why the authors said that it is unfortunate that a simple isolation method did not work.

Inhibitory activity of NO production from LPS-induced RAW 264.7

On page 16 L. 332 and 333, the authors stated that "High concentration of NO production from inducible NO synthase (iNOS) in macrophage causes several inflammatory diseases including rheumatoid arthritis and osteoarthritis". However, It is one thing to say that excessive NO production is linked to inflammation but it is wrong to claim that it causes inflammatory diseases, as stated in the manuscript.

Besides, 50 µg/mL is way too high concentration for an in vitro study. What was the basis for selecting this concentration? Why was dose-response effect not considered?
Cytotoxic activity

What are the criteria for classifying a substance as having cytotoxic activity? The authors should state their criteria for doing so. The authors may consider the work by Suffness, M., Pezzuto, J., 1990. Assays related to cancer drug discovery.

The authors also indicated that the extract and the isolated compounds exhibited selected toxicities, however, selectivity index was not calculated.

Discussion

The authors should focus the discussion squarely on their findings and relates these to what is in the literature. The authors made some conclusions, whereas the models used are different. For example, they stated on page 19 L 392 -394 " The anti- allergy of the crude ethanolic extracts was potent similar to previous report of leaves of B.montanum which reported mast cell stabilization and anti-histamine in systemic anaphylaxis model in vivo. It would be wrong to state that it present 'potent' anti-allergy activity, at least mention should be made to the differences in the models used.

The authors stated on p21 L 428 - 429 that "Due to few researches of propiophenones on biological activities, therefore, we compared the isolated propiophenones with phenylpropanoids which have analogue chemical structure and were widely". However, this doesn't seem to be correct, as analogues may possess widely different biological and pharmacological activities. If there are no studies, they should limit the discussion based on what they have. The authors also failed to discuss on the point why the crude extract demonstrated higher activity than the isolated compounds alone. This I belief will go along way in improving on the manuscript.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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