Reviewer’s report

Title: Anti-inflammatory effects of a methanol extract of Dictamnus dasycarpus Turcz. root bark on imiquimod-induced psoriasis

Version: 1 Date: 15 Apr 2019

Reviewer: Jitka Vostálová

Reviewer's report:

The manuscript is focused on anti-inflammatory and anti-psoriatic effect of methanol extract from Dictamnus dasycarpus Turcz. root bark. The topic is interesting and tries to explain the mechanism of positive effect of Dictamnus dasycarpus Turcz. root bark on skin disorders in traditional treatment.

I recommend rewriting the manuscript according the style of BMC Complementary and Alternative Medicine and comments mention lower. I also recommend using the passive in all the text. Remove number from headlines.

Abstract

Improve the abstract. Better describe design of experiment and explain conclusions.

Background

Page 4, line 20: Which effect of MEDD was found in reference 22?

Page 4, line 24 and page 5, line 1-6. Remove this text. The text describes the results of this study; it does not belong to the background; it should be used in the abstract conclusion. Specify hypothesis and the aims of this study.

Materials and methods

I recommend preparing a special paragraph with all used chemicals and antibodies with specification of their source. Also unify the style (company, country). Remove information about source of chemicals from methods.
Page 5: Improve the description of MEDD manipulation before application/using in this experiment. It is confusing.

Specify the Number of The Ethical Committee Permission.

Specify number of used animals. What was the number of animals in individual groups? Improve description of the study design.

Explain better and specify the negative control group (vaseline control) and positive controls (IMQ and IMQ+vehicle). Did you test effect of vaseline and vehicle application? Use more specific term for each experimental group of animals, now it is confusing.

What aesthetic was used in the study?

Page 6, line 12: Which samples were collected? Were the collected materials analysed immediately?

Page 7, line 19: The samples for PCR and ELISA were collected only from MEDD treated animals?

Page 8, line 9: How were the samples for western blot analysis prepared? Did you prepare mixed samples for each group? In Fig. 4 there are presented two representatives from two independent experiments. What does mean representative of two independent experiments?? Was the experiment on animals done twice? It will be more evident to show effects on mixed samples.

Page8, line 14: …rabbit anti-tubulin

Results

The used headlines of individual chapters present the observed effects. According to convention they should be more general, for example use: MEDD effect on symptoms of psoriasis…. Similar comment I have to the current form of title (headline) of legends to the figures - simplify the title (headline) of all of figures.

Unify the name of experimental groups of animals and try to express them more unequivocally.

Page 9, line 3-4. Rewrite this part. It is confusing.

Page 9, line 16. What does it mean "severity indicator"?? It is an indicator of psoriasis or inflammation or disease.

Page 9, line 16-24. Combine both paragraphs together.

Page 9, line 23. Specify number of figure.
Describe and explain the effect of vehicle on IMQ toxicity. The vehicle alone stimulated production inflammatory cytokines (Fig. 2, 3). Why??

Fig. 4. Were the levels of STAT1/STAT3 and p-STAT1/p-STAT3 influenced by vehicle? There are not significant differences between IMQ and IMQ vehicle?? How you can explain that STAT3 level in IMQ and IMQ +MEDD experimental groups is comparable? For example, STAT1 in IMQ+Vh is not significantly different from vaselina? Improve statistical analysis of all results - figures.

How you can explain the different effect on IL-17 level in skin and blood.

Why other inflammatory mediators were not measured in blood?

Discussion
Rewrite discussion in passive and discuss your results with known knowledge.

In Reference 27, there are no results from a clinical trial in patients with autoimmune disease but results from animal experiments.

Why the results from STAT5 are not presented in the results part?

Mention cellular function of STAT3. What is the effect of STAT3 on Th17 helper T cells?

Page 13, line 6-10. It is speculation which substances are responsible for extract effect. Isoquinoline alkaloids are structurally completely different from quinoline alkaloids presented in MEDD. Which glycosides are responsible for the anti-psoriatic effect?

Delete the last paragraph or rewrite it. Replace it with clearly formulated conclusions and submissions.

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

No

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:

Needs some language corrections before being published

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