Reviewer's report

Title: Gastroprotective effect of Desmosdumotin C isolated from Mitrella Kentii against ethanol-induced gastric mucosal hemorrhage in rats: possible involvement of glutathione, heat-shock protein-70, sulphydryl compounds, nitric oxide and anti-helicobacter pylori activity

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Reviewer: Christina Nasadyuk

Reviewer’s report:

The paper is devoted to the evaluation of the gastroprotective effect of desmosdumotin C from the plant Mitrella kentia in ethanol-induced model of gastric ulceration in rats. In general, the subject is interesting and the search for the new gastroprotective compounds with no adverse effects is important for the prevention of gastric ulceration.

Major Compulsory Revisions:

1) The English language is unacceptable in the manuscript, it should be revised properly by a native speaker, because in some sentences it is very hard to understand what the authors meant. There are also many unacceptable grammatical and typographical errors.

2) I suppose that the structure and style of data presentation should be improved. In the abstract of the manuscript it should be stated that pretreatment with DES attenuated gastric lesions, because just from the abstract it is not clear whether the rats were pretreated or treated with this compound. Also in the abstract the conclusions section is longer than the results. I suggest to make the conclusions more concrete and describe better the results.

3) In “introduction” you write that in vitro studies demonstrated the cytotoxicity of DES, so I have a question, why you decided that this substance will show gastroprotective effect in gastric ulceration?

4) You write that Mitrella kentii has anti-inflammatory and antipyretic effect. Is there any data on its influence on the stomach? Why did you decide that these effects make the background for the application of this plant for the prevention of the gastric ulcer? Maybe there is some data on antioxidant properties of Mitrella kentia, its influence on NO-system?

5) Concerning the materials and methods section, the sequence of procedures is not clear. I suggest you describe first how gross evaluation was performed and histological studies and then biochemical and other methodologies you used. In the section “Measurement of gastric juice acidity.....” it is not clear what you centrifuged? Gastric mucosa or gastric contents? Maybe this confuse is due to incorrect English translation. What material was used for pH measurement? As I understand first you performed the gross analysis of the stomach, then you homogenized gastric mucosa and performed the biochemical investigations in it?
6) From the section “materials and methods” it is not clear what was the difference between group A and B?

7) In the “results” it is written that ulcer control group produced the lowest content of gastric mucosa. You probably meant gastric mucus?

8) The results should be better analyzed and interpreted.

9) In the section “gross evaluation” was the difference statistically significant between the effect of different doses of DES C and DES C and positive control?

10) What about the influence of omeprazole and DES on mucus formation?

11) What about dose-dependent effect of DES on the other parameters you investigated? Did you compare the effects of different doses of DES C? Were they statistically significant?

12) In your statistics is p#0.05 compared to ulcer group? It would be interesting to compare the effect of different doses of DES C and the effect of omeprazole and DES C (in different doses)?

13) What was the total number of experimental animals? Maybe it would be reasonable to indicate in your tables and graphics the number of animals in each group?

Minor Essential Revisions:

1. You studied NO content in gastric mucosa but ignored NO-synthases activity. It is known that HSP-70 is a potent inducer of iNOS, causing hyperproduction of nitric oxide and increase of nitro-oxidative stress. In your study NO production decreased in ulcer formation. Maybe it would be reasonable to evaluate iNOS and cNOS activity in this study. Also it is known that there is an interrelation between iNOS and COX-2. At the same time there is some literary evidence that COX-2, not only COX-1 contributes to the preservation of the gastric mucosa integrity and COX-2 blockage may exacerbate the ulceration. These data should be better discussed.

2. The data on the activity of AST and ALT occur for the first time in the discussion, these indices should be presented in the “results” section first.

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

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests