Reviewer’s report

Title: The Effects of thylakoid-rich spinach extract and aqueous extract of caraway (Carum carvi L.) in letrozole-induced polycystic ovarian syndrome rats

Version: 0 Date: 04 Feb 2020

Reviewer: Abdel Halim Harrath

Reviewer's report:

In the present MS entitled "Effect of thylakoid-rich spinach extract and aqueous extract of caraway (Carum carvi L.) in letrozole induced polycystic ovarian syndrome", the authors tried to elucidate the eventual preventive and curative effects of caraway and thylakoid extracts in the management of PCOS using rat models. However, the results are too incomplete to publish this MS in this journal although this project contains a biological importance. I'd like to strongly recommend the authors to achieve (revise) points listed below before publication.

Major compulsory revisions
1. The authors performed a histopathological study for the right ovary collected from the different studied groups. The images of this study (Figs. 1, 2 and 6) are of poor quality. I strongly recommend the authors to change these images with other photos with high quality, especially that the journal is insisting on the fact to upload images with high resolution during submission (300dpi at least). Otherwise, I regret to inform the authors that the manuscript is likely to be of lower interest to the readership of BMC Complem Altern M.
2. The authors mainly focused on ELISA analysis of some biochemical parameters and stereological measurements to show the corrective effect of caraway and thylakoid extracts on PCOS. If the authors' hypothesis is correct that caraway and thylakoid extracts corrected PCOS status, some reproductive parameters should expectedly be ameliorated. The authors found that the number of follicles increased among the caraway and thylakoid treated groups, but I guess this is too incomplete to generate such hypothesis! They should study some molecular markers of fertility such as the expression of some steroidogenic-related genes/proteins (Cyp19, Cyp17, GDF...), proliferative markers (cyclin D, PCNA, …) and so on.

Minor revisions
3. I'm not clear on why the authors used the right ovary for their analysis? Why not the left or both ovaries right and left? Probably, most of readers also do not understand the stuff.
4. Page 2, Line 43:'Abstract section: Spell out the full name of "HDL-C".'
5. Background section: It seems that a relatively large body of knowledge already exists on the biological effects of caraway and even thylakoid extracts and, based on that, I advise the authors to develop the Background section substantially.
6. Page 3, Line 52, Background section:"…affecting 2.2% to 26% of women during their reproductive years worldwide". Please revise the percentages given carefully!!

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

Unable to assess

**Does the work include the necessary controls?**
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Yes

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**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
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I am able to assess the statistics

**Quality of written English**
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Acceptable

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