Reviewer’s report

Title: Anti-inflammatory activity of Jefea gnaphalioides (A. Gray), Astereaceae.

Version: 1 Date: 09 Jun 2018

Reviewer: Atallah Ahmed

Reviewer's report:

I have evaluated the paper entitled "Anti-inflammatory activity of Jefea gnaphalioides (A. Gray), Astereaceae" and I have the following major concerns:

- The correlation between the anti-inflammatory effect and the exact chemical constituents of MEJG is insufficient.

- The authors critically relied on the GC-MS data to prove the chemical composition of the extract, hence their biological relationship and this is not accurate and incomplete. Most of detected constituents by GC-MS in this work were sugars (e.g. glucopyranose and trehalose) or related components (e.g. quinic acid). I cannot believe that palmitic acid (a common fat metabolite of living organisms) and acubin (which ~ 1.2% of the silylated product of MEJG) are responsible for the present significant anti-inflammatory and related mechanisms of this extract.

- GC-MS method may give a better chemical map if the extract was previously subjected to a higher temperature and a longer time for silylation reaction or by changing temperature/gas flow program of GC. That is why only simple low molecular weight volatile/silylated products could be detected while other complex or aromatic compounds (e.g. flavonoids, triterpenoids, and quinic acid-based phenolic derivatives) were not detected. I advice the authors to consult the following paper: GC-MS Determination of Flavonoids and Phenolic and Benzoic Acids..............J. Agric. Food Chem., 2004, 52 (2), pp 222-227, DOI: 10.1021/jf035073r). The LC-MS or HPLC-UV/VIS methods is much more suitable for detection of the phenolic and flavonoids constituents expected in the extrat. Asteraceous plants are considered as rich source of quinic acid based chlorogenic acids and flavonoids.

- Therefore, I encourage the authors to generate more scientific evidence by using LC-MS analysis of the intact (non-silylated) extract, by determination of phenolic content (using Folin Ciocalteu's assay), flavonoid content (AlCl3 assay) and by measuring the in vitro antioxidant activity (using DPPH radical scavenging, b-carotene bleaching, ABTS, and/or TEAC assy) which should have been done prior to the in vivo study. Also, a phytochemical screening of this extract is required, particularly it was not previously reported for this plant. I believe that the flavonoid and phenolic constituents are majorly related to the anti-inflammatory activity shown in this work. Therefore, inclusion or exclusion of this fact is extremely important to make this manuscript acceptable for publication in BMC-CAM
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?
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Yes

Are the conclusions drawn adequately supported by the data shown?
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