Reviewer's report

Title: Isolation of methyl gamma linolenate from Spirulina platensis using flash chromatography and its cytotoxic activity

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Reviewer: Pilar Vila Donat

Reviewer's report:

The authors of the present manuscript aimed to isolate gamma linolenic acid from microalgae and to evaluate the cytotoxic effects of this isolate molecule by using A-459 cell line (adenocarcinoma human alveolar basal epithelial cells). The title of manuscript, as well as the idea of the research is interesting. Is very intriguing isolate and study the constituents of algae, as n-6 PUFA, which could have a lot of properties, such as anticarcinogenic activity.

However, I have a Major Revisions to the authors:

The objectives and methodologies of this article are not clearly presented. Moreover the results are very few and not well discussed. In addition are NOT reported graphics in which is possible observe cell proliferation/inhibition of cells, or in other words, concentration-effect curves when gamma linolenic is added to the cells, as well as, the concentrations of gamma linolenic used in the SRB assay are NOT reported. Only Table 1 provide results regarding IC50 of GLA and rutin, but are very scarces and no consistent with the text. If the isolate molecule is a potent cytotoxic agent towards human lung carcinoma cells, graphics and data that demonstrated it are required.

Neither statistical analyses of data were carried out. Without them, is uncertain to assert that compounds showed significance.

- Throughout the text the English usage is not suitable
- Abstract; methods (line 39-40 is not clear, and not explain the methodology)
- Background, second paragraph, line 77---> you should change the term "concentrations" by concentrates
- Last paragraph of Background, line 94 and 96---> the term "gamma linolenic acid (GLA) " are incorrectly written twice consecutively.
- Biological Screening section 3.2 "In-vitro cytotoxicity screening" line 208---> the culture was exposed to different concentrations of drug? What concentrations? Why are not provided? Line 211---> Authors performed experiment of cytotoxicity after 72 h of exposure. Justify the treatment was performed 72 h instead of 12 h, or 24 h or 48 h.
- References: reference 7 is written differently from the rest.
- Figure 1---> the image is very poor quality
- Figure 2 ---> is not cited in the text
- 5. Conclusion (line 241-243) --> these conclusions are not balanced and supported by the data.

**Level of interest:** An article of limited interest

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

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests