Reviewer's report

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

Version: 2
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Reviewer: Liming Zhang

Reviewer's report:

This manuscript reports a study on the isolation of methyl gamma linolenate from Spirulina platensis using flash chromatography and its cytotoxic activity against human carcinoma A-459 cell lines. A strength of the study is the isolation of methyl gamma linolenate and its characterization by IR, 1HNMR and 13CNMR. However, it suffers from several weaknesses that would require extensive revisions.

Major Compulsory Revisions:

My main concerns are the authors’ conclusions on the cytotoxic activity of methyl gamma linolenate (GLA) and its speculative potential in the treatment of lung cancer.

1. As the authors note, GLA is an essential polyunsaturated fatty acid and a potent nutraceutical. Both GLA and the control sample Rutin are low toxic. The effect of GLA on paclitaxel cytotoxicity in human breast cancer cells was not due to the cytotoxicity of the fatty acid itself, but as a modulator of tumour cell chemosensitivity in paclitaxel-based therapy (Reference [13] in the manuscript: Menéndez JA1, del Mar Barbacid M, Montero S, Sevilla E, Escrich E, Solanas M, Cortés- Funes H, Colomer R: Effects of gamma-linolenic acid and oleic acid on paclitaxel cytotoxicity in human breast cancer cells. Eur J Cancer 2001, 37(Suppl 3): 402-413). I guessed that the authors of this manuscript probably misunderstood the results in the Reference [13].

2. If the authors want to demonstrate the specific toxicity of GLA on the lung cancer, other cancer cell lines other than lung cancer should be selected as control group.

In summary, I am not convinced about the conclusions on the cytotoxic activity of GLA and the speculative potential of GLA in the treatment of lung cancer due to its cytotoxicity.

Minor Essential Revisions:

There are some typographical and grammatical errors in the manuscript. I suggest the authors have a native English speaker proofread the manuscript as they prepare a revision. Here are some examples:

Abstract, third paragraph, "A 150 lung cancer cell lines " or " A-459 cell lines" ?
Abstract, third paragraph, "be significant incomparision to...". What does it
mean?

Background, third paragraph, "..., The medical expenditures investing for the diagnosis..." -> "..., the medical expenditure for the diagnosis..."

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.