Reviewer's report

Title: Anti-borreliae efficacy of selected organic oils and fatty acids

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Reviewer: Prasad Dandawate

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Goc and coworkers have studied Anti-borreliae efficacy of selected organic oils and fatty acids. They have selected 47 lipids (30 volatile and non-volatile oils and 17 fatty acids) of plant and animal origin and tested against typical motile, knob/round-shaped persisters, and biofilm-like aggregates of Borrelia burgdorferi s.s. and Borrelia garinii. They have found that volatile oils are more potent than non-volatile oils and unsaturated fatty acids are more effective than saturated fatty acids. The study is straightforward and can be accepted in this journal for publication. Here are my few comments

1. Please include what is the basis of selection of these volatile oils or fatty acids? If they are effective clinically also what the authors thought on drug delivery?

2. The current chemotherapeutic combinations works against 80% of the cases, what are the reasons they don't work against 20% cases? Is there resistance phenotype involved in these 20% cases? Are there any genes that are involved in the resistance? If yes whether volatile oils or unsaturated fatty acids works against those resistance strains? It will be interesting to know whether volatile oils work in sensitizing those genes to current chemotherapy?

3. What is the probable mechanism of action of these volatile oils or unsaturated fatty acids? Can authors select some genes that can be involved as a target and perform PCR to show the same? What is the target of these volatile oils or unsaturated fatty acids when exerting Anti-borreliae activity?

4. Authors have done fluorescent imaging. It will be good if authors provide representative images.

5. Please provide chemical structures of the active compounds of these oils. That will be helpful in future drug development.

6. Authors can also consider combination of chemotherapeutic agents + volatile oil components study to test for anti-borreliae efficacy. It will be helpful for projecting clinical studies.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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