Reviewer's report

Title: In vivo activity of terpinen-4-ol, the main bioactive component of alternifolia Cheel (tea tree) oil against azole-susceptible and -resistant human pathogenic Candida species.

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Reviewer: David Wedge

Reviewer's report:

General

Biomedical Central 1080985485109619

In vivo activity of terpinen-4-ol, the main bioactive component of Melaleuca alternifolia Cheel (tea tree) oil against azole-susceptible and -resistant human pathogenic Candida species.

Francesca Mondello, Flavia De Bernardis, Antonietta Girolamo, Antonio Cassone, Giuseppe Salvatore.

Overall this is a well written paper on the anti-fungal nature of Melaleuca alternifolia essential oils to Candida. The scientific approach to evaluating M.a. oils is straight forward and adequately defined. The material and methods description is well done and provides a clear understanding and explanation of the controls, standards and quality control strains of test organisms. The work presented is a continuation of prior work on bioactive components of Melaleuca alternifolia with a focus on two major constituents 1) terpinen-4-ol and 2) 1,8-cineole. While the focus of the paper was on terpinen-4-ol and 1,8-cineole a complete bioassay-guided fractionation of the essential oil should be conducted. Often the major compounds contained essential oils or plant extracts do not possess the most interesting nor potent activity. A complete fractionation and biological assessment of the minor constituents should provide very interesting information. The data are sound and the appropriate statistics appear to be used to evaluate results. However, the statistical or experimental section should be expanded to describe the samples sizes (n=?) used to determine the means values, (eg. Cfu) and a clear statement of the number of times the different experiments were repeated. This should be done for each series of experiments eg. Vaginal infection model, antifungal activity ( MICs, MFCs, CFUs or other experimental units).

I believe that the composition of essential oil written in a text format is hard read (chemical identification and quantitative estimations section, page 7). If the composition and percentage with kovat index were presented in a table format it would be more clear and understandable for readers. The authors need to explain their use of retention indices on a polar or apolar columns in order identify constituents in the essential oil. In most chemistry journals the chemical identity and the kovat index is given in a table format. Papers with chemical constituents without their corresponding kovat index are normally not publishable. This section should be upgraded to meet

Discussion of biological activity, vaginal infection results, antifungal activity and corresponding MICs, MFCs appears well done and of interest to the reader.

The abstract is accurate and describes the experiment and results. The writin is acceptable and minor suggested revisions are made directly on the manuscript that has been converted into a PDF file are sent electronically to the editorial office. I believe the addition of kovat indexes are essential to the paper.

I recommend acceptance of the manuscript after Major Compulsory Revisions are completed.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

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Discretionary Revisions (which the author can choose to ignore)
What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests

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

Statistical review: No

Declaration of competing interests:

'I declare that I have no competing interests'