Reviewer's report

Title: Antimicrobial activity of three South African honeys and New Zealand Manuka honey on selected oral micro-organisms

Version: 1 Date: 24 April 2008

Reviewer: Shona Blair

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Minor Essential Revisions

General comments:

It would probably be better to use scientific names for the floral sources of the honeys, where possible, rather than common names as these can vary. For example, Eucalyptus cladocalyx is referred to as “sugar gum” in other places.

The full scientific names of the plants and the micro-organisms should be used the first time they are mentioned, then the abbreviated form can be used. Eg Eucalyptus cladocalyx then E. cladocalyx.

Referring to the test organisms as “oral” tends to infer that they were isolated from the mouth, rather than being standard cultures.

Abstract:

Inconsistent use of “species” and spp. (and the plural abbreviation of species should have a “.” at the end)

See above comment about scientific names

Background:

It would be worth including some information on the test organisms used and why these were chosen.

Paragraph one:

Some more recent references on the medicinal use of honey would be worth including, there have been quite a number of published studies on the medicinal use of honey since the ones quoted by the authors of this manuscript. For example:

Arne Simon, Kirsten Traynor, Kai Santos, Gisela Blaser, Udo Bode and Peter Molan. Medical Honey for Wound Care—Still the ‘Latest Resort’?
Evidence-based Complementary and Alternative Medicine
eCAM Advance Access published online on January 7, 2008

Elizabeth A van der Weyden Treatment of a venous leg ulcer with a honey
alginate dressing British Journal of Community Nursing, Vol. 10, Iss. 6 Suppl, 03 Jun 2005, pp S21 - S27

Arne Simon, Kai Sofka, Gertrud Wiszniewsky, Gisela Blaser, Udo Bode1 and Gudrun Fleischhack

Wound care with antibacterial honey (Medihoney) in pediatric hematology–oncology Supportive Care in Cancer Volume 14, Number 1 / January, 2006

Paragraph two:

“At present only honeys from Leptospermum species are sold with standardised levels of antibacterial activity.” – this is incorrect. There are medicinal grade honeys being sold in Australia and Europe, which are not from Leptospermum spp.

Methods:

The definition of the honeys used in the study is a little confusing, and using the term “so called” is inappropriate.

It may be helpful to provide more information on the source of the manuka honey. The relative inactivity of this honey suggests that it was not of medical grade.

Saying that the honey was free from “artificial” additives infers that there were other additives. Just stating that pure honey was used is all that needs to be said.

Had the honeys been heated during extraction or processing? That may explain the low levels of activity, as it would destroy the glucose oxidase if higher temperatures were maintained for long periods.

Were the honey solutions freshly prepared for the antibacterial and other assays? This would also affect the outcome of the experiments.

The description of the assay used to determine the MICs could be clearer.

How were honeys tested for sterility?

Microscopic examination not the most reliable way to check for purity.

In the paragraph listing the cultures used only the names of the organisms should be in italics, not (NTCT XXX) etc.

It has previously been shown that the amount of hydrogen peroxide that accumulates in diluted honey varies with time and dilution. This should be taken into account in the present study. See:

Results:

Tables 1-5 should be combined. The use + / - of notation wastes space and does not provide additional information. One table that lists all of the test organisms, honeys and their MICs would be much more informative.

Were the pHs of the different honeys averaged? If so, why?

The last line refers to Table 1, but it should be Table 6 (and see above re combining tables)

Discussion:

The discussion section is a little repetitive - it should more concise, as should the conclusion.

“It has been shown that the antimicrobial activity of honey may range from concentrations … greatest inhibition at around 20%.” – This is not correct, a greater range in activity has been reported. Both the type of honey and the organism it is being tested against will determine the level of activity. Furthermore, some honeys such as active manuka are very effective at less than 5%.

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, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests