Reviewer's report

Title: Inhibitory Activity of a Standardized Elderberry Liquid Extract Against Clinically-relevant Human Respiratory Bacterial Pathogens and Influenza A and B Viruses

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Reviewer: mary ann lila

Reviewer's report:

Major Revisions: Essential need for a professional treatment of the 'chemistry' side of the paper, to parallel the 'bioassay' side. The latter is thorough, the former is scant

Minor Essential Revisions: all the rest.

REVIEW

Title: Inhibitory Activity of a Standardized Elderberry Liquid Extract Against Clinically-relevant Human Respiratory Bacterial Pathogens and Influenza A and B Viruses

Authors: Christian Krawitz, Mobarak Abu Mraheil, Michael Stein, Can Imirzalioglu, Eugen Domann, Stephan Pleschka and Torsten Hain

Journal: BMC Complementary and Alternative Medicine

General comments|

This contributed manuscript details some very straightforward, simple bioassay results to demonstrate the antimicrobial/antiviral properties of a standardized, diluted elderberry extract. While these properties have long been heralded for elderberry in general and for Rubini in particular, it is good to have some additional firm and comprehensive substantiation of these claims. In general, it is worthwhile to have stronger substantiation of properties attributed to members in the 'superfruits' category. The manuscript is very good in terms of antimicrobial and antiviral assays.

In terms of elderberry phytochemistry and bioactive compounds, it is very weak, the authors barely touched the chemistry. The report is not particularly innovative nor does it offer any revealing hypotheses, however, it does provide corroboration and validation of these properties for elderberry, and does so in a quantitative manner that can be useful, plus it addresses the useful issue of simultaneous protection from bacterial and viral infections which can be concurrent.

Specific comments|

Abstract: lines 10-15. This is really not telling what the methods are, the text is
exceedingly vague and not helpful. Stating objectives without giving a clue of methods. Be specific here and line out what this work is contributing by virtue of the alternative bioassays within. The quantitation, the evidence for concentration effects, the liquid versus solid – get this encapsulated here.

Keywords: line 5. Here and in several other places in the manuscript, there is irregular ‘title case’ the word upper should not be capitalized here.

Introduction:
Lines 3-5. Inappropriate wording
Delete the phrase ‘…and are also referred to as ‘antioxidants’”
Anthocyanins (most) do have antioxidant capacity, but it is inappropriate to word this in a sentence that implies synonymous terms.

Page 5, line 3-5
"The European black elder contains the flavonoids, quercetin and rutin. Anthocyanins of the berries, which are responsible for their dark coloration, were identified as cyanidin-3-glucosides [9]"

Authors need to rephrase this sentence and discuss more about elderberry bioactives. Elderberry contains different glycosidation forms of cyanidin. Cyanidin 3-glucoside is only one among other cyanidin glycosides.

Methods:
p. 7 line 22 -- again, irregular title case. Brain Heart Infusion.
Page 7, line 7-10
"The elderberry-to-extract ratio of the product is 18:1 and the extract is standardized using membrane filtration to achieve a minimum anthocyanin concentration of 3.2% measured by HPLC."

The methods of standerdization is not clear, need to write more details. Also need the HPLC quantification details and give a reference.

p. 8 line 18. again, irregular title case

Results:
Lines 3-14. The timing to inhibition should be noted here and in the Table. Yes, it is in the Methods, however, timing is particularly critical to measured inhibition zones, and the authors are later making a point that the concentration/timing is even more striking in the liquid cultures, so the timing needs to be clear here.

p. 14 lines 8-19. This section is quite difficult to follow. Especially the unexplained final sentence.

p. 23 Table 1 again, irregular title case, and, the TIMING is important here

p. 24 Table 2 CFU define – a Table is supposed to stand alone for easy interpretation
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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'