Reviewer's report

Title: A screening for antimicrobial activities of Caribbean herbal remedies

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Reviewer: Emeka Nweze

Reviewer's report:

I have gone through the manuscript by Claribel Luciano-Montalvo et al titled ‘A screening for antimicrobial activities of Caribbean herbal remedies’.

I have the following major comments under the subheadings numbered below:
1. Preparation and extraction of plant material:
   Lines 2/3: What was the final concentration used? ‘Concentration to 15 mL’ is confusing
   A. Why did the authors lyophilize the plants extracts instead of storing in the refrigerator?
   B. The authors dissolved all the plant extracts in autoclaved water. Were all the extracts completely soluble? It is usually common practice to use solvents that can readily dissolve the extracted materials e.g DMSO
2. Disc Preparation:
   A. What was the final concentration of the plant materials in the filter paper discs?
3. Antimicrobial activity determination using disc diffusion assay
   A. What was the final bacteria concentration after adjusting the density to 0.5 McFarland units? This should be stated clearly.
4. Minimum inhibitory concentration (MIC) determination:
   A. Is there any reference to the definition of MIC provided here? I think there are better definitions of MIC in the literature. Eg. MIC is the lowest concentration of a specific antimicrobial agent that prevents the growth of an organism in vitro.
   B. What is the growth medium described in line 7 and what quantity was added??
   C. How were the issues with the diffusion of the extracts in the medium addressed?
   D. What do the authors mean by bacterial suspension containing 5X104 CFU? Is this CFU per mL? I do not also see the ATCC numbers which should be mentioned after the bacteria named here. The authors mentioned this only once (when they described the isolates tested) but omitted it in all other sections of the paper.
   E. In the last four lines, authors should clearly define what the MIC was and how they arrived at it? They mainly stated that the absorbance of the extracts were
subtracted from the absorbance of the experimental wells but did not say how they arrived at the MIC from these figures? Is this difference in absorbance the MIC?

5. Minimum bactericidal concentration:
A. In this section (line 5), the authors mentioned that there were positive and negative controls but did not specifically mention what these controls were?

6. Results and discussion:
A. From Fig 1A-D, it is not clear to me how the authors arrived at the various extract concentrations discussed. For example, how was the 139 ug/ml in line 9 arrived at?

Page 9. What does this statement mean: ‘….they failed to meet the p-value used in our analysis’?

On page 11, lines 7-10, the authors should compare experimental and control values using the same data units. A situation where % is used for extracts and then ug/mL is used for the control antibiotic Streptomycin and both compared together is not acceptable. Authors should express concentrations in the same units e.g ug/mL for both experimental and control values. This was pretty consistent through this section.

I also observed that many other plant extracts were tested but barely mentioned in the body text (e.g, Capraria biflora). Why were these data not captured in any of the Tables in the paper?

The list of abbreviated items mentioned in page 6 should be deleted and should be explained when first mentioned in the text.

7. Tables and Captions:
The dilutions arrived at in Table 1 is not very clear. For instance, Why would 100% of one plant extract be 1000ug/mL and 100% of another be 573 ug/mL? Is this based on the extract yield?? The extract yield was not indicated on this Table and this is usually necessary.

In Table 2, why did the authors test some extracts against 4 bacteria isolates and others on 3 or 2 isolates?

The authors generally ignored to mention the reference numbers of the isolates tested in many parts of the manuscript. It normal to write the ATCC numbers of isolates each time they are mentioned. I have highlighted before but I am mentioning it again here because of the consistency of this ommision. I also did not find any test data for H.influenzae, C.albicans and E.coli even though the authors mentioned that these were tested (see Pp 16)

Minor corrections
Page 1: author not autor
Page 2: In the results section, authors should highlight/mention specific details for e.g, specific extracts with best antimicrobial activities (MIC and MBC)
Page 3: under keywords, start the first sentence with capital letter
Under background, rewrite the first sentence:'The…………………….formulations are a viable option that could be useful in reducing the side effects associated with conventional antibiotic treatment........(1)’

Page 4: write the full meaning of PR

Page 5, first sentence, rewrite to: ‘The plant species that have been identified in the TRMAIL program and their traditional uses are the focus of the current study and are shown in Table 1’

Replace ‘plant organs’ with ‘plant parts’. Sterile cheese cloth??

Whatman chromatography no 2 filter paper.

There should be a reference cited to show the publication of the Caribbean Herbal Pharmacopeia

In vitro susceptibility studies of Haemophilus influenzae

Page 6: Cite a reference to capture the ‘methods for antimicrobial susceptibility testing’ version released in 2008.

Page 9: Line 7, ‘recommended herb for infectious diseases in the Caribbean’
Line 16: Change 20%-2% to 2-20% and in page 10, do same for 22-30%

Page 13: Change ‘ethanolic to ethanol’

Page 14, Line 16: replace ‘that’ with ‘than’

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare I have no competing interests