Author's response to reviews

Title: Antibacterial activities of selected Cameroonian spices and their synergistic effects with antibiotics against multidrug-resistant phenotypes

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Author's response to reviews: see over
Antibacterial activities of selected Cameroonian spices and their synergistic effects with antibiotics against multidrug-resistant phenotypes

Reviewer #1: Mainen Moshi

Reviewer's report: It is an excellent piece of work, worthy of publishing in BMC.

Answers. Dear reviewers thanks for your comments. The revisions have been made according to the reviewer’s #2 recommendations

Reviewer #2: Farrukh Aqil

Dear reviewers, thanks so much for your comments on our manuscript. The revisions have been made according to your recommendations. They are highlighted in red color in the revised manuscript. Please also find below and point-by-point the revision made.

I hope you will appreciate it and find our paper worth for publication this time

Point 1. Why author has tested synergism with phenylalanine beta-naphthylamide (PABN), a efflux pump inhibitor. Are tested strains specific to shown resistance by that mechanism? Or just to explore the properties of the plants.

Answers. The tested bacteria are MDR strains expressing active efflux as mode of resistance through the efflux pumps AcrAB-TolC or MexAB-OprM (See Table 2). PABN is a well known inhibitor of such pumps and any significant increase in the activity of an extract, firstly suggest that the active compounds are substrate of efflux pumps, but secondly indicate that this association can be envisaged in therapies involving MDR phenotypes.

Point 2. Phytochemical characterization of these plants has been done by color test. It would have been better if author characterize at least selected plant extracts further for actual signatures of these phytocompounds by HPLC/LCMS or GCMS etc. Method and discussion sections of the manuscript should be elaborated. Author(s) has shown phytochemical characterization, this section should be elaborate in the method section (only one reference “Harborne 1973” is not good enough), and further results should be discussed in the light of phytocompounds detected.

Answers. The detailed in the phytochemical screening methods are now provided. Concerning the future signature of these compounds by HPLC/LCMS or GCMS, this can only be done as perspectives. A gross discussion in relation to the phytochemical detected have been provided.
**Point 3.** What was the total volume of the media used for the susceptibility testing?

*Answer. The total volume was 200 µl, this is now provided in the manuscript*

**Point 4.** Manuscript should be checked for language corrections as many grammatical errors can be seen throughout the manuscript. Also author should be careful while italicizing the words.

*Answer. This has been done*

**Specific comments**

In general the numbers of references are too many. Try to keep minimum number of references.

*Answer. Dear reviewers, this have been reduced as recommended*

**Point 5.** Table 1: font size should be increased as per the journal guidelines; it is difficult to follow the table. Traditional uses of the plants can be deleted as many manuscript, reviews and books have been reported traditional uses.

*Answer. This have been done*

**Point 6.** Table 3: How author calculated yield of the extracts as author has reported extracts was in paste. I believe yield should be calculated on dry weight basis. Anthocyanines should be corrected as Anthocyanins

*Answer. Dear reviewers, after complete evaporation, the extract obtained were in form of paste, not powder. This always happened for plant extract containing a high concentration of non polar compounds. The mass of the paste can be determined easily. Anthocyanines have be corrected as Anthocyanins*

Table 4: Over all activity shown in this table is not very encouraging and it’s around 1 mg/ml for most of the extracts against most of the bacteria. Author should calculate FIC index for the synergism.

*Answer. Dear reviewers, taking in account the fact that all studied plants are edible and that we are working with MDR bacteria, the results can be considered as encouraging. It is not appropriate to calculated any FIC between extracts and PABN as this will not have a real significance. This is not the objective in using PABN. Besides, a single concentration of PABN was used and assays using other concentrations can results in completely different data.*

Table 5: Was there any rationale for the selection of the antibiotics used. Author has mentioned >128, >4, >8 and >16 fold synergism against AG100, how was it calculated when IC50 was <2 µg/ml.

What is 0,5 ? Is it 0.5 if yes please correct throughout the manuscript. Please remove all the commas from all the data points in all the tables.
Anwers. The antibiotics used were those commonly used in the treatment of bacterial infections, and we selected the most used ones in each class of antibiotic. For values such as >128, etc, they are calculated using the lowest tested concentration. E.g. <0.5 (>32) indicates that the lowest tested concentration was 0.5 µg/ml, and the MIC was not detected down to such value. 0.5 is therefore used in the calculation of the FIC and consequently the symbol above must be added after calculations of the FIC value.

Is it 0.5 if yes this has been corrected throughout the manuscript

Other point. Dear reviewer, all supplemental data are just evidence of the data reported in the manuscript and can constitute duplicity of the results if they are inserted in the main document. We therefore think that it should be better to left it as it is.

Thanks and sincerely

Victor Kuete, PhD