Reviewer’s report

Title: In vitro antimicrobial activity of plants used in traditional medicine in Gurage and Silti Zones, south central Ethiopia.

Version: 2
Date: 4 June 2015

Reviewer: Patricia Combarros-Fuertes

Reviewer’s report:

The manuscript titled “In vitro antimicrobial activity of plants used in traditional medicine in Gurage and Silti Zones, south central Ethiopia” written by Alemtshay Teka et al. deals with a very interesting topic. This research work evaluates, in vitro, the antimicrobial activity of different plant extracts in order to look for efficient and necessary alternatives to modern medicine to treat infectious diseases produced by microorganisms which are resistant to drugs currently used to treat them. The results derived from this research study could offer information from a scientific point of view and validate the traditional use of these plants. However, the article has some weaknesses which make difficult its publication.

I recommend to reformulate some parts of the article and to include some aspects, such as a simple statistical analysis, and after a major revision, I think that would be acceptable for publishing in BMC Complementary and Alternative Medicine.

Major Compulsory Revisions

1) The quality of written English is not good enough. This fact make difficult to understand what the authors want to say in some occasions. I would advise revising in general the English language on the all manuscript and doing some language corrections.

2) I recommend doing a statistical analysis (a simple one is enough). A scientific work needs a statistical analysis to validate the study and make the results obtained more robust.

I am not a specialist in statistic but in my opinion, applying a one-way ANOVA test or a Kruskal Wallis test (depending on if your data have or not homogeneity in variances) is enough to confirm the differences observed between the microorganisms tested treated with the same plant extract. The homogeneity of variances could be assessed with a Levene test (p>0.05 the samples have homogeneity of variances; p #0.05 the samples don´t have homogeneity of variances). Apply these tests when possible and adapt your “Results” and “Discussion” sections taking into account the results of this statistical analysis.

Standard deviations of the data from the different experiments should be added too.
3) Please rewrite the Discussion because I think that the ideas are a little bit disconnected between them. For example the second paragraph stated some ideas individually but all of them are connected, rewrite them in order to show this connection.

Minor Essential Revisions

1) Background
Paragraph 2 (almost at the end): “medicinal uses for the treatment of infectious diseases…” Please include one “s”

2) Material and methods
In “Assessment of minimum inhibitory concentrations (MICs)”: In the middle of the paragraph “Microorganisms´growth” and “microrganisms’growth”. Please delete the apostrophe in both cases.

3) Results
Paragraph 1 (almost at the end): “The Gram-negative bacteria´s…”. Please delete the apostrophe and the “s”, here it no make sense.

4) References
Reference 14: “Giday” and “Zay people” Please correct these mistakes.

Discretionary Revisions

1) Abstract
In “Methods”: I think that in this section is better to clarify that the extracts were obtained from different parts of the plant depending on the kind of plant.

In “Results” (almost at the end): “…at a higher MIC value…” it would not be "at a lower MIC value”? Because the MIC value with your extract is between 128 and 256 µg/mL and with oxacillin is 512 µg/mL. You have a higher antibacterial activity because you have a lower MIC.

In “Conclusions”: I think is better to put “The study revealed in vitro antibacterial activity…”

2) Background
Paragraph 1: you talk about “antibiotic-resistant” or “antibiotic”. As you worked with bacteria and one yeast (C. albicans) strains, I think it would be better to talk in general and not to focus only on bacteria (is only a suggestion).

Paragraph 3: I think it would be appropriated to make a comment, in general, on how these plants are prepared and how they are applied in traditional medicine.

3) Material and methods
In “Selection plants”: What do you mean exactly with the term “Voucher specimens” I have already seen it in other publications of the same field but I do
not completely understand.

If you worked with different parts of the different plants please, explain how did you “press” them (conditions, how did you process them…).

I would change “The plants were identified ...Ethiopia” by “The plants were identified and then authenticated by specialized plant taxonomists in the Department of Plant Biology and Biodiversity Management, Addis Ababa University, Ethiopia”

In “Microorganisms”: I advise you to explain in more detail which microorganisms were used with which extract because not all of them were tested with all the extracts. You explain something in “Results” but in my opinion you should clarify here.

In “Assessment of minimum inhibitory concentrations (MICs)”: How did you do your “full growth control”?

4) Results
I think that you should to talk on all the results even though some extracts were not active. A negative result is also a result. At the end you can conclude that more studies are needed to confirm these results if you do not want to reject its possible medicinal value.

Paragraph 2. “Moreover, this extract...than oxacillin (512 µg/mL)” Is not there some mistakes? “Moreover, this extract showed activity at a similar or even lower MIC value for the test against S. aureus ATCC 33591, ATCC 33592, SA3 and SA5 strains (128-256 µg/ml) than oxacillin (256-512 µg/ml)”.

5) Discussion
The same comment. I think you should to discuss all the results.

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

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests