Author's response to reviews

Title: In vitro anti-mycobacterial activity of nine medicinal plants used by ethnic groups in Sonora, Mexico

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Author's response to reviews: see over
Author’s response to Associate Editors comments

TITLE:

In vitro anti-mycobacterial activity of nine medicinal plants used by ethnic groups in Sonora, México

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Dear Dr. Tom Rowles,

I received the Associate Editor comments (20130825) regarding the manuscript that we sent for publication in BMC Complementary and Alternative Medicine (Manuscript, MS: 1284775545910449, entitled “In vitro antimycobacterial activity of nine medicinal plants used by ethnic groups in Sonora, Mexico”).

We have responded to all comments raised by the Associated Editor comments, and we hope that our improved revised manuscript is now suitable for publication in your prestigious journal.

The modified parts of the paper are highlighted in bold-face type and are aimed at clarifying issues raised by the Associate Editor.

I look forward to your reply and final decision.

Sincerely yours,

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Associate Editor comments:

1. Comment:
Overall, the style and grammar of written English in this manuscript still need proper editing.
Answer:
The style and grammar of written English in this manuscript was done by a native English speaking colleague.

2. Comment:
In the Conclusion section of the Abstract, the first sentence needs clarification (the same sentence is found at the beginning of the Conclusion section in the manuscript).
Answer:
The sentence was clarified in conclusion section of the abstract and at the beginning of conclusion section:
In conclusion abstract.
A. confertiflora and A. ambrosioides showed the best anti-mycobacterial activity in vitro. The activity of Guaiacum coulteri is consistent with the traditional use by Sonoran ethnic groups as anti-tuberculosis agent. For these reasons, it is important to investigate a broad spectrum of medicinal plants in order to find compounds active against Mycobacterium tuberculosis. In conclusion paper.
A. confertiflora and A. ambrosioides were included in this study, despite not being used for tuberculosis treatment by these ethnic groups, and showed the best anti-mycobacterial in vitro activity. The anti-mycobacterial activity of Guaiacum coulteri is consistent with their traditional use by Sonoran ethnic groups as anti-tuberculosis agent. However, for Schinus molle and Acacia farnesiana used for tuberculosis by these groups, no anti-mycobacterial activity was found. For these reasons it is important to investigate a broad spectrum of medicinal plants in order to find compounds active against Mycobacterium tuberculosis.

3. Comment:
If the authors meant that only Guaiacum coulteri demonstrated activity against Mycobacterium tuberculosis of all the evaluated plants used for treating tuberculosis in traditional medicine, this must be clearly stated. However, in stating this point, authors must bear in mind that they have not evaluated all the listed plant parts used for treating tuberculosis in Schinus molle and especially Acacia farnesiana.
Answer:
Guaiacum coulteri, traditionally used against tuberculosis by ethnic groups, resulted less effective in vitro than A. confertiflora in the anti-mycobacterial assay, which is not traditionally indicated as anti-TB plant. However, as we use only flowers from G. coulteri for the anti-mycobacterial assay, it is important to evaluate other parts of this plant to assess this activity. Furthermore, A. confertiflora is used by Sonoran ethnic groups to treat symptoms closely related to tuberculosis, such as fever and lack of appetite (Table 1). A. farnesiana, G. coulteri, and S. molle have been referred by Sonoran traditional medicine as anti-tubercular agents, but only G. coulteri resulted active under the conditions tested.
Several products of *A. farnesiana* (gum, flower, seed, leaves, cortex, root) are used by ethnias as anti-tubercular medicine, however in this study we only assess the activity of leaves and fruits of *A. farnesiana* and *S. molle*, this could explain our results.

4. **Comment:**
In the Materials and methods section under the subheading ?Preparation of organic extracts of plants with antimycobacterial activity?, clarification is needed on whether the extraction was done sequentially or non-sequentially.

**Answer:**
Extraction was done non-sequentially. This was included in manuscript

5. **Comment:**
Authors implied more than one plant by saying ?those plants whose methanol extracts exhibited antimycobacterial activity at < 200 µg/mL?? whereas it was only one plant species that they did this for.

**Answer:**
Indeed only *A. confertiflora* had antimycobacterial activity at < 200 µg/mL. It was clarified in the manuscript:
For the present study we defined as active the extract with a MIC value of ≤ 200 µg/mL, considering the presence in such extract of the active component(s) at adequate concentration for their further isolation and purification, such was the case of *Ambrosia confertiflora* methanolic extract.

6. **Comment:**
In the Materials and methods section under the subheading ?Qualitative phytochemical analysis?, authors described Baljet reaction only. What was it for? If for example, it is meant to screen for sesquiterpene lactones, authors should change the subheading to ?Screening for sesquiterpene lactones? (or something along that line). There is no need to have ?Baljet reaction? as another subheading. Authors must also cite the source reference for this test. This comment would therefore affect the title of and the column heading in Table 3.

**Answer:**
Baljet reaction is useful to screening sesquiterpene lactones.
The subheading was changed to: Screening for sesquiterpene lactones.

7. **Comment:**
On page 10, please note that the correct thing is Molina-Salinas et al and not just Molina-Salinas. The mention of such names should be followed with appropriate reference number in parentheses. The same should be done for Cantrell and collaborators mentioned on page 11.

**Answer:**
References were corrected in both cases.
8. Comment:
What do the authors mean by “intermedium polarity solvents?” mentioned on page 12?

Answer:
The term “intermedium” was used to describe such solvents which have a polarity between the chloroform and methanol solvents. The sentence was corrected.