Reviewer's report

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

Version: 1 Date: 26 February 2013

Reviewer: Virgilio Bocanegra-Garcia

Reviewer's report:

Minor Essential Revisions

Please take in account the following considerations:

The paper is concise and clear; however, findings are not properly discussed, and are just described with a limited comparison with previous reports. Discussion should include more input from authors point of view. Please note the following observations:

Background

1. About “Antibiotic misuse”. In the case of antibiotic treatment in TB infected patients, the main problem is not with misuse, but with patient treatment adherence, since when a patient stop taking the antibiotics, because of side effects or for other reasons, resistance arise.

Methods

Plant Collection

1. All Plants were collected all across the Sonora State, or just in a defined region such as the north or the south? This should be clarified, since the authors state that Sonora is the second largest state in Mexico, and environmental differences (temperature, humidity, soil composition, etc) may be present along the state

2. Please state if plant were collected from wild environments in the field, since the environmental conditions may have important effects in the metabolites production

3. Please state the final concentration of DMSO in the in vitro assays, since DMSO can have inhibitory effects by itself

Results and discussion

1. Why not to use the aqueous extract? Since the infusion is the traditional extract methods used, it would make sense, that the aqueous extract should be tested.
2. Author should discuss why the traditionally used plant G. coulteri resulted less effective than A. confertiflora that is not traditionally indicated as anti-tb plant. Also why A. confertiflora is more active than A. ambrosiodies, since they both are from the same genus.

3. The discrepancy with the Molina-Salinas report could be due to the different polarity of the solvent used, so the results are not comparable. Author should state that, and not just do a plain comparison of the results.

4. If SQLs are already been reported as possible active anti-tb compounds, Why the authors did not apply an analytical test for the measurement of those compounds? Or at least the use of a qualitative test to demonstrate that SQL are present in their extracts?

5. Authors should discuss why despite several SQL have been reported in A. confertiflora, with a low MIC that the one they find in their study, the MIC of A. confertiflora extracts even in less polar solvent is still higher that previous reports?

6. Since G. coulteri and S. molle has been the ones referred as traditionally used against Tb disease, why authors did not test less polar extracts in that plants to, so possible anti-tb activity could be detected? As it was seen in A. confertiflora, those extracts may have been more active than the methanolic extracts, even according with the Molina-Salinas report.

Conclusions

1. Authors state that the fact that G. coulteri was active against tb in vitro supports the empiric knowledge of its use in traditional anti-tb therapy, but in their results G. coulteri was not the most active plant against Tb in vitro since both the Ambrosia genus plants were more active, so, empiric knowledge would be inaccurate and the plants traditional used are not the best available choices. More about this fact should be addressed in the discussion section.

2. Authors results indicate that despite infusion is the traditional used method, it is not the best method for extract of the active compounds in those plants, since the extracts with less polarity were more effective, and authors do not indicated that neither in discussion nor in the conclusions.

3. Authors should state a brief and possible explanation of why the less polar extracts resulted more active, beyond the fact that SQL are extracted in that fractions, since already reported MICs are lower than the ones authors find in their study, so additional factors may be interfering.

1. Is the question posed by the authors well defined? yes
2. Are the methods appropriate and well described? yes
3. Are the data sound? yes
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? yes
5. Are the discussion and conclusions well balanced and adequately supported by the data? no
6. Are limitations of the work clearly stated? no
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? no
8. Do the title and abstract accurately convey what has been found? yes
9. Is the writing acceptable? Need revision

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

**Quality of written English:** Needs some language corrections before being published

**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