Reviewer's report

Title: Phenolic and flavonoid profile, antimycobacterial properties of six selected Turkish plants (Lamiaceae) used for tea, spice and folk remedies

Version: 2 Date: 30 September 2013

Reviewer: Jean de Dieu TAMOKOU

Reviewer's report:

The authors have determined the phenolic and flavonoid compositions and tested the antimycobacterial activity of six plants belonging to the family of Lamiaceae. The data presented are preliminary, but are encouraging. This article is of potential interest and the authors have done a good job at attempting to prepare their extracts in a standardized manner, with standardized measures of certain components. There is potential for further chemistry work with respect to isolation and identification of bioactive compounds that are effective against the Mycobacterium species. However, several points pertaining to the manuscript listed below should be addressed.

Major essential revisions are required.

1) The manuscript is overall poorly written.
2) There are some typographical and grammatical errors throughout the manuscript.
3) The title is not appropriate.

Abstract section:

4) The abbreviations: anti-TB leads, LC-MS, MICs, etc. were used in the manuscript even earlier than their description in the methods; therefore these abbreviations should be described in full form at their first use in the manuscript.
5) Please rewrite the background of the abstract and also summarize it.
6) Also, rewrite the following sentence to summarize it:

“Six Turkish medicinal plants of the family Lamiaceae (Stachys tmolea Boiss., Stachys thirkei C. Koch, Ballota acetabulosa (L.) Benth., Thymus siphthorpii Benth., Satureja aintabensis P.H. Davis, Micromeria juliana (L.) Benth. ex Reich.) were collected in 2009 – 2010 and subjected to a sequential extraction with different solvents according to their increasing polarity: petroleum ether, ethyl acetate, and methanol”

7) Line 16, What does "...were found to develop significant activity against..." mean?
8) Line 21, What does "… pronounced antimycobacterial activity… " mean?
9) The following statement " …not only inhibits but kills all the…." is repetition.
10) Please revise the keywords

Introduction section:
11) The Background has been poorly written. There is need for a major review.
12) There is much literature on biological activities of the studied plants that should help the authors in writing the background for their work.

13) Paragraph 2 sounds more appropriate to start the introduction. “Tuberculosis (TB) is an infectious bacterial disease caused by......... have provided an alternative source for the development of antimicrobial drugs [17].”

14) The 1st statement in the background should be moved and made the next statement of this section. “Lamiaceae members have been................such as antifungal [11], antibacterial [12], anticholinesterase and antioxidant [13], and anti-HIV-1 [14]”.

15) “This study investigated six plants of the Lamiaceae family (Stachys tmolea Boiss., Stachys thirkei C. Koch, Ballota acetabulosa (L.) Benth., Thymus sipthorpii Benth., Satureja aintabensis P.H. Davis, Micromeria juliana (L.) Benth. ex Reich.) with traditional claims for several diseases.”

This statement is not a scientific presentation. Please specify what you want to do.

16) The authors need to justify the choice of microorganisms according to their traditional use.

Preparation of inoculums for anti-tuberculosis assay

17) Any reference?

Antimycobacterial assay

Determination of Mycobactericidal Effect

18) Can the authors summarize these sections with references?

Results and Discussion

19) Results have not been scientifically reported. The tables need to be explained in the text, for the different strains and how these compare with other Lamiaceae species as presented in available literature should be highlighted. The authors need to scientifically present and discuss this section.

Conclusion section:

20) The authors should revise this section.

Jean de Dieu TAMOKOU, PhD
**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