Reviewer's report

Title: Total phenolic and flavonoid content and antibacterial activity and of Punica granatum L. var. pleniflora flowers (Golnar) against bacterial strains causing foodborne diseases

Version: 4 Date: 8 July 2015

Reviewer: Shoib Ahmad Baba

Reviewer's report:

The manuscript represents a very valuable piece of information and the authors have put in lot of efforts in the preparation of manuscript. The question posed by the authors is clear and well defined. The methods used are appropriate, well described and technically sound. The authors have scientifically validated the traditional use of Punica granatum. I believe the article is of broad readership and potentially acceptable for publication in your journal after the following minor essential revisions are carried out

Minor Essential Revisions

1. Abstract
   - Background should be modified, it should be clearly mentioned that the use of Punica granatum against food borne diseases is being scientifically validated.
   - In results, although the total phenolic and flavonoids content is positively associated with antimicrobial activity, it may not be only because of these compounds. Therefore I suggest modifying the conclusion as follows
   - After evaluation of total phenolic and flavonoid content chloroform fraction was found to have the lowest phenolic and flavonoid contents (3.8 mg 13 GAE/g and 1.1 mg RE/g respectively) and methanol fraction was found to have the highest phenolic and flavonoid contents 15 (18.1 mg GEA/g and 3.3 mg RE/g respectively). The total phenolic and flavonoid content was positively associated with the antibacterial activities of the fractions with chloroform extract exhibiting lowest antibacterial activity against E. coli 14 (MIC 25 mg/ml) and the methanolic fraction exhibiting the highest antibacterial effect against S. 16 aureus (MIC 0.19 mg/ml).
   - Further, while comparing the antibacterial activity of two fractions I suggest, the authors should compare the antibacterial of both chloroform and methanolic fractions either against E. coli alone or S. aureus. This may provide better insights about their differential antibacterial activity.

Section 1. Background

- Background looks weak, I suggest authors to refer to the following papers for better understanding.

Section 2. 4. Bacterial strains

The microorganisms were obtained from Iranian Research Organization for Science and Technology, Persian Type Culture Collection (PTCC), Tehran, Iran. But the authors have also used some ATCC strains and it should be mentioned.

Section 2.9 total flavonoid content

‘Samples remained’ should be replaced by ‘samples were kept’ (see page 8 line 21)

For Section 2.9 and 2.10 I suggest the authors to refer to the following article


Section 3. Determination of MIC

The have mention that E. coli was more resistant while as most sensitive. Since E. coli is Gram negative and S. aureus is Gram positive. Could it be because of the differences in cell wall composition? Gram positive often sensitive to plant extract for they have an outer peptidoglycan layer which is considered as an ineffective barrier.

Section 5. Conclusion

“Antibacterial effects of the methanol and water fractions on Gram negative bacteria are also relatively similar except for the methanol extract which revealed to be more effective on Salmonella typhi” should be replaced by “Antibacterial effects of the methanol and water fractions on Gram negative bacteria are also relatively similar except for the effect of methanol extract on Salmonella typhi.

Author Contributions are not clear. Please mention clearly.

Level of interest: An article of importance in its field

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