Title: Antibacterial, antioxidant and tyrosinase-inhibition activities of pomegranate fruit peel methanolic extract

Version: 2 Date: 5 July 2012

Reviewer: Nripendranath Mandal

Reviewer’s report:

Comments:
This is a preliminary study with information regarding on the antibacterial, antioxidant and tyrosinase-inhibition property of the pomegranate fruit peel extracts. However, it is not quite understandable why the antioxidant and antibacterial studies have been performed at the same time, since these two activities are not only unrelated, but also opposite in their mechanistic pathways. The present study is not clarified properly to justify its therapeutic properties. Authors should report the study on their antioxidant and free radical scavenging activities and correlate with various phytoconstitutents. Antibacterial and tyrosinase inhibition study should be done properly and correlate with various phytoconstitutents that can be reported as separate article. There are some major concerns for this article, which are summarized below.

Major comments:
1. Regarding antibacterial study with 80% methanol itself have antibacterial activity. Authors failed to convince the data as antibacterial activities with the extract dissolved in 80% methanol. Although they mentioned about solvent control in line 116-117 but it is not justified in the results.

2. The interest of the study, if focused on the antioxidant property, should be concentrated in much more common radical scavenging assays, viz. hydroxyl radical, superoxide radical scavenging etc. with the samples (See Hazra et al., 2008. BMC Complementary and Alternative Medicine 8:63).

3. The concentration range of the extracts used for the assays of antioxidant, FIC and FRAP are different in the methodology and result presented in the table. Which one is correct?

4. The values of total flavonoids content and anthrocyanins in the table 4 are different in the text in the result section. Which is the right one?

5. The extract dissolved in 100% DMSO in case of Tyrosinase inhibition study followed by dilution with PBS. What is the final concentration of DMSO in the
reaction mixture and its effects on inhibition of the enzyme? Authors should clarify it before making any conclusion.

6. The HPLC-MS spectra for all the standards must be incorporated in the figure along with the extracts chromatogram to verify the quantities of each component in the figure 3.

7. A large number of language, syntax and construction errors are there in the manuscript, which should be revised thoroughly. The manuscript must be copyedited before being accepted for publishing. Until and unless it is checked thoroughly, the manuscript may be liable for rejection.

Minor comments:

1. In the introduction as well as result and discussion sections, some statements are repeated. It should be corrected.
2. Legend of figure 1 should be corrected.
3. The conclusion portion should be rewritten keeping in mind about any future goal to investigate the active principle or mechanism for activities of the extracts.
4. Tables must comprise of a heading and the details are to be given as a footnote properly. Signify the values of the different letters such as a, b, c…etc.
5. The figure 2 for the tyrosinase-inhibition should be presented clearly for better understanding.
6. The references should be checked thoroughly for uniform and in prescribed format.

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: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests