Reviewer’s report

Title: Synergy of antibacterial and antioxidant activities from crude extracts and peptides of selected plant mixture

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Reviewer: Ashwini Mishra

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For BMC Complementary and Alternative Medicine

#Review of 9729972389204986

Comments to Authors:

The study entitled “Synergy of antibacterial and antioxidant activities from crude extracts and peptides of selected plant mixture” by Abdul-Mushin M Shami and colleagues does not appear to be novel. Authors have evaluated antibacterial and antioxidant activity of a mixture of 4 indigenous Australian plant extracts (prepared in hot water or ethanol) including extracted peptides on the growth of pathogenic bacteria such as S. aureus, E. coli, and B. cereus and P. aeruginosa. They have shown that mix-extract has a better potency against S. aureus, E. coli, and B. cereus. Although they claim that this is the first report of this kind, there are studies already been done on individual plants used in this study showing their antibacterial and antioxidant properties, see ref. 11,12 and 14. Overall the paper has been written very poorly with numerous confusing sentences throughout the manuscript (some of them as mentioned below) in addition to the incomplete details in methods and results sections and typographical errors.

Major Compulsory Revisions

The Peak F1 form Gel Filtration column has shown multiple peaks in HPLC elution. What is actual active component? The authors should repeat the experiments using individual peaks to identify the actual active peptide(s). Also, do amino acid analysis and peptide sequencing such that active component could be chemically synthesized for therapeutic purposes.

Why only the peak F1 was tested for antibacterial study and that too only on B.cereus, not on the other pathogens described in this study?

In figure6, is the Y-axis represents protein concentration in individual tubes or absorbance at 280 nm?

Minor Essential Revisions

Background:

Ambiguous sentence:
---A plant mixture containing indigenous Australian plants—should read as an indigenous Australian plant mixture

---An Australian plant mixture that contains indigenous Australian plants is examined should read as an indigenous Australian plant mixture was examined

---Gram-negative test bacteria strains---should read as Gram-negative test bacterial strains

Write the full form of abbreviation GAE

Methods:
--- Five grams of dried powder of this mixture were extracted—mixture itself was not extracted, it was used for extraction using the solvent, so proper sentence should be Five grams of dried powder of this mixture were used for extraction using 50 ml of --

---The sample was eluted in the column, should read as, the sample was eluted from the column

---The samples were measured for protein by— should read as -The samples were measured for protein concentration by

---They were measured at 595 nm should read as Absorbance of the samples were measured at 595 nm

---Bovine albumin should read as Bovine serum albumin

--- In this study, four bacteria, should read as In this study, four bacterial

--- (1 x 10^8 CFU) based on optical density (O.D.) measurement. At what wavelength?

--- Purification peptides from selected plants by gel filtration and HPLC should read as
Purification of peptides from selected plants mixture by gel filtration and HPLC

-- measured at 280 nm spectrophotometer ---remove spectrophotometer

Results:

---Figure 7 showed is Figure 8 showed

Remove letters on the top of the error bar (a, b, c and d) from figures 1, 2, 4 and 5 as individual columns are already color coded for different concentrations of the extract to signify the effect.

Level of interest: An article of importance in its field

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.