

# Review of: "Saponins and their synergistic antibacterial activity with traditional antibiotics against *Staphylococcus aureus* and *Escherichia coli*: Review"

Nam Weng Sit<sup>1</sup>

<sup>1</sup> Tunku Abdul Rahman University (Chinese University)

Potential competing interests: No potential competing interests to declare.

The review provides very useful information about the use of plant secondary metabolites, specifically saponins together with conventional antibiotics in tackling the antibacterial resistance issue with the focus on two specific bacteria, i.e. *Staphylococcus aureus* and *Escherichia coli*. The authors could elaborate the justification of selecting these two bacterial species for the review.

## Comments

- Replace the term "traditional antibiotics" with "conventional antibiotics". The latter term is more appropriate to be used for currently available antibiotics.
- Put all scientific names in italic forms, such as *S. aureus*, *E. coli*, ...
- Page 2 Line 9-11: The estimates from the European Center for Disease Prevention and Control (ECDC) are based on 2007, which is rather outdated. The latest estimates can be found in the report "Assessing the health burden of infections with antibiotic-resistant bacteria in the EU/EEA, 2016-2020" published by ECDC.
- Page 2 Line 32-34: Include the chemical structures for steroidal saponins and triterpenoid saponins. This will give a clearer differentiation between the two groups.
- Page 3 Line 11-12: The sentence "Reports indicate that 90–95% of *Staphylococcus aureus* strains worldwide are resistant to penicillin and 70–80% are resistant to methicillin." is inappropriately placed in this paragraph and can be removed. This paragraph focuses on the antimicrobial activity, which includes antibacterial, anti-fungal, antiviral, and anti-parasitic activities of saponins.
- Page 3 Line 16: Revise the name "*Klebsiella pneumonia*" to "*Klebsiella pneumoniae*".
- Page 3 Line 23: Revise the name "*Maesa lanceolate*" to "*Maesa lanceolata*".
- Page 4 Line 32: Give the full name for *S. epidermidis* and *B. cereus*, as they are mentioned for the first time in the manuscript.
- Page 6 Line 6: Revise "Fabacea" to "Fabaceae" and "Lamiacea" to "Lamiaceae", respectively.
- Page 6 Line 17: Revise "Euphrbiacea" to "Euphorbiaceae".
- Page 6 Line 18: Revise "...*K. pneumonia*, *Proteus spp.*, and *P. aueuroginosa*" to "*K. pneumoniae*, *Proteus spp.*, and *Pseudomonas aeruginosa*".
- Table 1: The table contains FIC indices for many bacteria other than *S. aureus* and *E. coli*, which are not consistent

with the title of the manuscript. The authors may remove the irrelevant data from the table or revise the title of the manuscript. The combination of the methanol extracts of *Melanthera elliptica* with tetracycline produced different FIC indices for *S. aureus* (0.047-0.53) and *E. coli* (0.066-0.2812). It is suggested to include explanations of these differences in the review. Revise the plant name “*Tribulus ris*” to *Tribulus terrestris*”.

- Page 9 Line 11: Revise “tetracycline” to “tetracycline”.
- Page 9 Line 14: Revise “...and *L. monocytogenes*” to “...and *Listeria monocytogenes*”.
- The full name for CDC is Centers for Disease Control and Prevention.

## References

- 2, 7 & 17: Use title case for the journal name.
- 3: Incomplete name for CDC
- 22: Use sentence case for the article name.
- 35: The author names are missing.
- 38, 45 & 46: Give the journal name in full.
- 44: Put the first author’s name in small letters.
- 50: Incomplete citation.