Reviewer's report

Title: Anti-Methicillin-resistance Staphylococcus aureus (MRSA) compounds from Bauhinia kockiana Korth. and their mechanism of antibacterial activity

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Reviewer: Hsiu-Mei Chiang

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Bauhinia kockiana (B. kockiana) exhibited strong antioxidant and antimicrobial activities. The present study aimed to assess the antibacterial activity of B. kockiana on MRSA, purify and identify the antibacterial compounds, and determine the mechanism of antibacterial activity. B. kockiana flower exhibited antibacterial activity of MRSA bacteria, and the MIC varies from 62.5 - 250 µg/mL. Tannins and flavonoids were detected. In addition, gallic acid and its ester derivatives purified from ethyl acetate extract inhibited MRSA at 250 - 500 µg/mL. SEM revealed that the cells have undergone plasmolysis upon treatment with the extract and compounds.

1. Tannins, flavonoids and gallic acid and the derivatives are commonly existed in plant extracts. Compound 1 and 2 is gallic acid and its derivative. What is the particularity of compound 1 and 2 isolated from this plant?
2. There are many studies reported the inhibition of plant extracts containing gallic acid on Methicillin Resistant Staphylococcus aureus. The novelty of this study must state clearly. In addition, more experiments are needed.
3. There are some problem in the flow chart of fractionation n Figure 2. The EtOH extract is used at the beginning and eluted to get FE1-4. The fractions are extracted separately. The flow chart is confused and must be modified.
4. The Figure Legends must show in the manuscript. What are the treatments in Figure 4 A to D? The images of SEM (Figure 4) show the morphology of Staphylococcus aureus in control and treated with the samples. However, it is difficult to understand the mechanism of the sample inhibiting Staphylococcus aureus. It needs more experiments and discussion.
5. The statistic analysis must label the Tables or Figures.
6. The abbreviation at the first time must spell out.
7. There are many grammar and typing errors. Please revise the manuscript carefully.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
I am able to assess the statistics

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