Qeios

Peer Review

Review of: "Antibacterial Activity of Malaysian Trigona itama and Trigona thoracica Honey Against Gram-Negative and Gram-Positive Bacteria"

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The manuscript "Antibacterial Activity of Malaysian Trigona itama and Trigona thoracica Honey Against Gram-Negative and Gram-Positive Bacteria" presents a study on the antibacterial properties of honey from Malaysian stingless bees, specifically the species *Trigona itama* and *T. thoracica.*

The study addresses a topic of scientific and social interest, exploring the antibacterial properties of natural products, which have potential therapeutic applications and contribute to sustainability and the local economy. The inclusion of important Gram-positive and Gram-negative bacteria (*S. aureus, S. epidermidis, Streptococcus. pyogenes, E. coli, Salmonella typhi, K. pneumoniae*) adds clinical relevance to the work. The study expands knowledge about stingless bee honey and its therapeutic potential, which is underexplored, especially in the Malaysian context.

However, some points should be addressed in a revised version:

The text is detailed, but at times there is a reproduction of ideas, which can make reading difficult. The writing could be more concise.

The study did not include an in-depth chemical analysis of the honey (e.g., phenolic compounds, sugars, enzymes). I think this could better explain the observed antibacterial mechanisms.

A comparison between stingless bee honey and other sources of honey, such as that produced by Apis mellifera, would be important, as it would provide more robustness to the work. The lack of such data weakens the therapeutic contextualization.

doi.org/10.32388/5UOO01

I think the manuscript could discuss in more depth the limitations of the study, such as seasonal variations or the influence of the floral origin of the honey.

A more detailed discussion is necessary, as there are several studies in the literature addressing data on the antimicrobial activity of stingless bee honey in other regions of the world. Thus, I believe it is important to compare the results with previous studies that investigated honey from other species, highlighting similarities and differences in the levels of antibacterial efficacy.

Discuss in more depth how the results can be applied in clinical practice, such as in treatments for antibiotic-resistant bacterial infections.

I suggest including graphs to complement the tables, such as diagrams that show the relationship between honey concentration and the zone of inhibition.

I believe that some images would make the work more visual, such as showing the species Trigona itama and Trigona thoracica in the natural environment or in apiaries, as well as an image of an agar plate with the inhibition zones highlighted, showing the clarity around the wells containing honey.

I suggest reviewing the text to improve the writing and eliminate repetitions and spelling errors, and to ensure a clearer flow of ideas.

Declarations

Potential competing interests: No potential competing interests to declare.