

**UNIVERSITI TEKNOLOGI MARA**

**ANTIMICROBIAL ACTIVITY OF METHANOLIC  
AND AQUEOUS *Rhodomyrtus Tomentosa* LEAVES  
EXTRACT AGAINST *Staphylococcus Aureus*  
AND *Escherichia Coli***

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Project submitted in fulfilment of the requirements for the degree of  
**Bachelor in Medical Laboratory Technology (Hons.)**

**Faculty of Health Sciences**

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## **DECLARATION**

I hereby declare that this thesis is based on my original work and has not been submitted previously or currently for any other degree at UiTM or any other institutions.

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## ABSTRACT

Food poisoning is one of the most risky illnesses that can affect humans or death in developing countries. Most reports are associated with bacterial contamination through the process of preparation food. Researcher nowadays attempts to discover a safer agent to use in food preparation as a food preservative agent, so the solvent used in extract preparation is really important. Thus, the potential of *Rhodomyrtus tomentosa* leaves as antimicrobial agent has been explored in this study. It was tested against two bacteria which are *Staphylococcus aureus* (gram positive) and *Escherichia coli* (gram negative). Antimicrobial activity of methanol and aqueous *Rhodomyrtus tomentosa* leaves extract was compared using gram staining, bacterial identification, antimicrobial sensitivity testing (AST), minimal inhibitory concentration (MIC), minimal bactericidal concentration (MBC) and statistical analysis. Disc diffusion technique was used for AST where the mean area of inhibition methanol and aqueous extract against *Staphylococcus aureus* was 18 mm and 16 mm respectively, whereas there is no area of inhibition for *Escherichia coli*. MIC is done to determine the minimum concentration that the extract need to inhibit the bacteria. After that, MBC was performed to confirm the previous MIC result. Statistical analysis shows no significant difference between methanol and aqueous extract on antimicrobial activity. In conclusion, both aqueous and methanol leaves *Rhodomyrtus tomentosa* yield similar antibacterial activity which prone for *Staphylococcus aureus* and can be used safely toward foodborne pathogen.

Keywords:antimicrobial, methanol, aqueous, *Rhodomyrtus tomentosa*, food poisoning