DETERMINATION OF METHANOLIC AND ETHANOLIC EXTRACTS OF *Hylocereus polyrhizus* AS A POTENTIAL ANTIMICROBIAL AGENT AGAINST SKIN PATHOGEN

By

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DECLARATION

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

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ABSTRACT

The persistent development of resistant strains of bacteria against the currently available antimicrobial agents demands the search of new antimicrobial agents. The utilization of medicinal plants as natural substitute is the primary area of research to overpower the drug resistance of infectious agents. In the present study, antimicrobial activity of *Hylocereus polyrhizus* is investigated against skin pathogens of six bacteria including three types of Gram positive (*Bacillus cereus, Staphylococcus aureus, Staphylococcus epidermidis*) and three types of Gram negative (*Escherichia coli, Proteus mirabilis, Pseudomonas aeruginosa*) using disc diffusion method and broth micro-dilution method. Two types of *H. polyrhizus* extracts were prepared using methanol and ethanol as extraction solvents, while DMSO (Dimethyl sulfoxide) and water as dissolution solvents. *H. polyrhizus* of methanol extract displayed noteworthy antimicrobial activity against all tested bacteria except for *P. mirabilis* and *P. aeruginosa* compared to ethanol extract. The minimum value of minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) for different bacterial strains ranged from 125mg/mL to 250mg/mL. In conclusion, the present study provides the scientific rational for medicinal use of *H. polyrhizus* as alternative medicine. The use of *H. polyrhizus* extracts has great significance as substitute the existing antimicrobial agent with fewer side effects towards the consumer.

Keywords: antibacterial, *Hylocereus polyrhizus*, skin, pathogen