

UNIVERSITI TEKNOLOGI MARA

**PHYTOCHEMICAL ANALYSIS,
TOXICITY AND ANTIBACTERIAL
ACTIVITIES OF *Strobilanthes crispus***

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BSc

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AUTHOR 'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

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ABSTRACT

Diseases involving the emergence of bacteria has been treated traditionally since ancient times using medicinal plants as they contain the components of therapeutic element. Hence, in this study, a medicinal plant that could be the next solution to green antibacterial agent was discuss. It included antibacterial activities against selected gram-positive and gram-negative bacteria by Kirby–Bauer disc method, toxicity evaluation by brine shrimp lethality assay and phytochemical analysis using GC-MS of ethanolic leaves extracts of *Strobilanthes crispus*. From this study, *S. crispus* shown remarkable antibacterial activities toward *S. epidermidis* at the highest concentration (250 mg/ml) but not effective against *P. aeruginosa*. The statistical analysis (ANOVA) show that there were significant different between the data which mean that the differences among the data can be assumed coming from the manipulation of treatment and experiment only. From the phytochemical analysis, there were 14 phytochemical constituents that was identified to be present in the extract with 90% and above. They were 5-hydroxymethylfurfural, palmitic acid, octadec-9-enoic acid, cyclopentadecane, linoleic acid, methyl 7,10,13-hexadecatrienoate, acetic acid, phytol, isopropyl linoleate, linolenoylglycerol, oleic acid, elaidic acid, glycerol oleate and squalene. From this, few was reported to possess antibacterial activities which are acetic acid, glycerol oleate, oleic acid, isopropyl linoleate and phytol. While in toxicity evaluation, *S. crispus* was found to be non-toxic toward the nauplii as the LC₅₀ was 58289.12 µg/mL which was higher than 1000 µg/mL thus considered as non-toxic based on Meyer toxicity index.

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