

PHYTOCHEMICAL STUDY OF *Curcuma longa* RHIZOME

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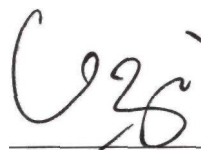
This Final Year Project Report entitled “**Phytochemical Study of *Curcuma longa* Rhizome**” was submitted by Wan Nurul Husna Binti Wan Zaidi, in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Chemistry, in the Faculty of Applied Sciences, and was approved by



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ABSTRACT

PHYTOCHEMICAL STUDY OF *CURCUMA LONGA* RHIZOME

This study emphasizes on the phytochemical constituent identification of *Curcuma longa* rhizome. The dried rhizome were extracted for 16 hours using Soxhlet extractor with three different solvents of different polarity; hexane, chloroform and ethanol. The extracts obtained were evaporated by using rotary evaporator to obtain pure crude extracts. Ethanol extract resulted in the highest percentage yield with 30.97 %. The best TLC profile for ethanol sample was hexane:ethyl acetate solvent system at ratio 2.5:2.5 with the clearest separation. Chloroform and hexane extracts exhibited clear separation at the ratio 1.5:3.5. For phytochemical screening tests, only terpenoid and phenol were detected in the ethanol extract. Chloroform extract exhibited positive result for both saponin and terpenoid tests. Hexane extract gave positive results for the presence of saponin, glycoside, terpenoid and fatty acid. For antibacterial test by using disc diffusion method, Gram positive bacteria, *B. subtilis* exhibited the largest inhibition zone while Gram negative bacteria, *E. coli* resulted in the smallest inhibition zone due to the thin but impermeable cell membrane. Ethanol extract exhibited the highest antibacterial activity compared to chloroform and hexane crudes.