PHYTOCHEMICAL ANALYSIS AND ANTIMICROBIAL EFFECT OF *Clinacanthus nutans* AGAINST *Staphylococcus epidermidis* and *Pseudomonas aeruginosa*

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ABSTRACT

PHYTOCHEMICAL ANALYSIS AND ANTIMICROBIAL EFFECT OF *Clinacanthus nutans* AGAINST *Staphylococcus epidermidis* and *Pseudomonas aeruginosa*

Clinacanthus nutans or Belalai Gajah belongs to the family of Acanthaceae. This study is designed to evaluate the antimicrobial activity and phytochemical constituents of *C. nutans*. The crude extracts obtained were 0.93g, 1.01g and 7.42g for petroleum ether, chloroform and methanol extracts. The crude extracts were evaluated for the antibacterial activity using agar disc diffusion method. The extracts were tested in different concentrations which are 300mg/ml, 100 mg/ml, 75 mg/ml, 50mg/ml, 25 mg/ml and 12.5 mg/ml. Antibacterial activity of petroleum ether at concentration 50 mg/ml was the highest against *Staphylococcus epidermidis* with 1.7 mm zone of inhibition while *Pseudomonas aeruginosa* at concentration 12.5 mg/ml with the zone of inhibition of 7.4 mm is the highest for methanol extract. Thus, *P. aeruginosa* is the most susceptible. The most active extract for antimicrobial activity is methanol which showed the strongest inhibition zone. The phytochemical analysis of methanol extracts of *C. nutans* leaves showed the presence of alkaloid, tannins, flavonoids, steroids and cardiac glycosides. The petroleum ether extract contains steroids and cardiac glycosides while chloroform extract contains steroids only. However, methanol extract reveals alkaloids, tannins, flavonoids, steroids and cardiac glycosides. The developing solvents of TLC analysis for petroleum ether extract was 3:7 (petroleum ether: chloroform), chloroform extract was 4:1 (hexane: chloroform) and methanol extract was 5:4:1 (methanol: ethyl acetate: acetic acid). Petroleum ether extract showed 13 compounds, chloroform extract showed 21 compounds while methanol extract showed 10 compounds respectively.