

**PHYTOCHEMICAL SCREENING AND ANTIMICROBIAL ACTIVITIES  
OF *Barringtonia racemosa* LEAVES AGAINST SELECTED BACTERIA**

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**Final Year Project Report Submitted in  
Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Science (Hons.) Biology  
in Faculty of Applied Sciences  
Universiti Teknologi MARA**

**JANUARY 2017**

## ABSTRACT

### PHYTOCHEMICAL SCREENING AND ANTIMICROBIAL ACTIVITIES OF *Barringtonia racemosa* LEAVES AGAINST SELECTED BACTERIA

*Barringtonia racemosa* or "Putat Kampung" was known to show various types of biological activities such as analgesic, antitumor and antimicrobial activities. *B. racemosa* has several secondary metabolites which included the diterpenes, triterpenoids, flavonoids, steroids and saponins. Chemical-based medicines mainly give unwanted side effects to the consumers. The microbial resistance towards these antibiotics also keep increasing. Therefore, the search for new potential effective plants to fight pathogenic microorganisms was timely to do. This study was carried out to determine the phytochemical compound in *B. racemosa*'s methanol and hexane leaves extract, to identify the antimicrobial activities of *B. racemosa* leaves extract against selected Gram-positive and Gram-negative bacteria and to determine the minimum inhibitory concentration (MIC). The bacteria used were *Staphylococcus aureus*, *Bacillus subtilis*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*. In this study, the antimicrobial activities of methanol and hexane extracts of *B. racemosa* were determined using disc diffusion and MIC tests. In phytochemical screening, alkaloids, flavonoids, tannins, terpenoids and saponins compounds were examined. 400 mg/ml, 200 mg/ml, 100 mg/ml and 50 mg/ml concentrations were used in determining the inhibition zones in disc diffusion method while 100 mg/ml, 50 mg/ml, 25 mg/ml and 12.5 mg/ml concentrations were used in MIC test. The results showed the presence of alkaloids, flavonoids, tannins, terpenoids and saponins in methanol extract while in hexane only tannins was present. For disc diffusion, the methanol extract showed the highest antimicrobial activity against *P. aeruginosa* at 400 mg/ml concentration while for hexane extract, there was no antimicrobial activity were detected against all bacteria tested. The concentration at 12.5 mg/ml was determined as the MIC for methanol extract. As a conclusion, *B. racemosa* has a promising high potential as an antibacterial agent and be able to replace the existing chemical-based products

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