

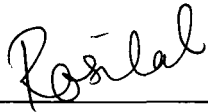
**ANTIBACTERIAL AND ANTIOXIDANT PROPERTIES OF  
*Shorea sumatrana* LEAVES**

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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 the Faculty of Applied Sciences  
Universiti Teknologi MARA**

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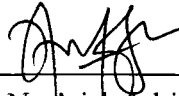
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## ABSTRACT

### ANTIBACTERIAL AND ANTIOXIDANT PROPERTIES OF *Shorea sumatrana* LEAVES

The timber value of *Shorea sumatrana* has been well known from decades. *Shorea* is a major exotic species found in tropical regions and they are one of the endemic plants in Malaysia. This study is aimed to evaluate the antibacterial and antioxidant properties of the methanol extract of *Shorea sumatrana* leaves. The antibacterial activity of the methanol extract of *S. sumatrana* was assessed against gram-positive and gram-negative bacteria by disc diffusion method. On the other hand, the antioxidant activity was detected by DPPH radical scavenging activity. In the preliminary screening experiment of antibacterial activity, all of the tested bacteria showed varying degrees of sensitivity to the leaves extracts excluding *P. aeruginosa*. Results obtained that *S. epidermidis*, a gram-positive bacterium as the most susceptible to the extracts of leaves at the applied doses. Besides, only *P. aeruginosa* was resistant to the extracts. My findings clearly demonstrate that the leaves extracts of *S. sumatrana* had strong antibacterial effects and raises the possibility of using the extracts as antibacterial agents in treating pathological conditions caused by bacteria infection. Although the effect of *S. sumatrana* leaves against some pathogenic bacteria *in vitro* is promising, further microbiological and pharmacological studies will be required. In present study, *in vitro* antioxidant activities of the methanolic extracts of leaves of *S. sumatrana* were determined by spectrophotometric methods. Antioxidant activities of extract were expressed as percentage of DPPH radical inhibition. The methanolic extract of *S. sumatrana* leaves showed maximum antioxidant activity of 98.87% at 500 µg/ml concentration. Thus, this study reveals that leaves of *S. sumatrana* has a potential as a natural sources of antioxidant.