PHYTOCHEMICAL ANALYSIS AND ANTIBACTERIAL ACTIVITY OF *Etlingera elatior* (Jack) R. M. Smith LEAVE AND FRUIT EXTRACTS AGAINST COMMON TYPES OF NOSOCOMIAL BACTERIA

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ABSTRACT

PHYTOCHEMICAL ANALYSIS AND ANTIBACTERIAL ACTIVITY OF *Etlingera elatior* (Jack) R. M. Smith LEAVE AND FRUIT EXTRACTS AGAINST COMMON TYPE OF NOSOCOMIAL BACTERIA

An increase in the number of bacteria resistant to antibiotics around the world has needed new antibacterial agents. For this, the antibacterial activities of *Etlingera elatior* extract were evaluated against selected Gram-positive bacteria (*Staphylococcus aureus*, *Enterococcus faecalis*) and selected Gram-negative bacteria (*Esherichia coli* and *Serratia marcescens*) in this study. The *E. elatior* leaves and fruits part were extracted using methanolic solvent. Standard phytochemical laboratory methods were used to screen the constituents in the plant. Disc-diffusion, minimal inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) methods were used to carry out antibacterial activities. The phytochemical screening had elicited five compounds that possessed antibacterial effect namely flavonoid, terpenoid, tannin, alkaloid, and saponin variedly in plant extraction. The findings from this study showed that both fresh and dried fruit extract exhibited the highest antibacterial activity towards both gram-positive and gram-negative bacteria with the inhibition recorded for fresh fruit against *E. coli* (16.33±0.58), *S. aureus* (16.67±0.21) *and E. faecalis* (17±2.64) respectively and while for dried fruit inhibited *E.coli* (15.67±1.15), *S. aureus* (16.67±0.58) and *E. faecalis* (17.00 ±1.00) respectively with the concentration for the MIC value were ranges from 6.25 mg/ml to 1.56 mg/ml. MBC value were in the range from 25 mg/ml to 6.25 mg/ml that can completely kill the bacteria. It is a suggested that the extraction varied with more different solvents such as chloroform, ethyl acetate and aqueous extract. Also, it is recommended to use other microorganisms such as *Candida albican* in order to evaluate the microbial spectrum and the bioactivity of the *Etlingera elatior*.