# *IN VITRO* ANTIMICROBIAL ACTIVITIES OF SOURSOP (*Annona muricata)* LEAVES EXTRACT AGAINST COMMON HUMAN PATHOGEN

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## ABSTRACT

### *IN VITRO* ANTIMICROBIAL ACTIVITIES OF SOURSOP (*Annona muricata)* LEAVES EXTRACT AGAINST COMMON HUMAN PATHOGEN

*Annona muricata* commonly known as soursop from the family annonaceae have used in this study. Global population used medicinal plant as disease healing and antibiotic. The crucial fact about the treatment of the human pathogen is the ability of this pathogen to develop resistance to antibiotic. This research was conducted to evaluate the antibacterial and antifungal activities of *A. muricata* leves extract against known human pathogenic microorganisms. This study also conducted to determine the minimal inhibitory concentrations of *A. muricata* leaves extract that able to inhibit the growth of tested bacterial and fungal pathogen. The phytochemical analysis was also conducted to determine the presence of active secondary metabolite that act as antimicrobial agents. The bacterial that used in this study were *Staphylococcus aureus* and *Escherichia coli* whereas the fungal pathogen used were *Aspergillus niger* and *Candida albican. A. muricata* leaves were extracted using distilled water and methanol as solvent for extraction. Results showed that methanol yielded about 4.4% (8.8 g) of extract whereas distilled water yielded about 3.1% (6.2 g) of extracts. The antimicrobial study showed that methanol leaves extract of *A. muricata* gave the larger zone of inhibition against *E. coli* and *C. albican* with 11.6 mm and 2.3 mm zone inhibition respectively. Meanwhile distilled water leaves extract of *A. muricata* gave the larger diameter of zone of inhibition only against *S. aureus* with 2.2 mm diameter. The determination of minimal inhibitory concentration (MIC) of *A. muricata* leaves extract showed that, methanol leaves extract gave the MIC at 800 µg/mL against *E. coli* and 200 µg/mL against *C. albican.* For distilled water leaves extract of *A. muricata,* the MIC was at 600 µg/mL against *S. aureus* only. The analysis of *A. muricata* methanol leaves extract revealed the presence of flavonoid, glycoside, tannin, steroid and phenol, while in *A. muricata* distilled water leaves extract showed the presence of flavonoid, glycoside, saponin and phenol.