EVALUATION OF ANTIBACTERIAL AND ANTI-INFLAMMATORY ACTIVITIES OF *Senna alata* AND ITS PHYTOCHEMICAL CONSTITUENTS

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ABSTRACT

EVALUATION OF ANTIBACTERIAL AND ANTI-INFLAMMATORY ACTIVITIES OF *Senna alata* AND ITS PHYTOCHEMICAL CONSTITUENTS

Senna alata has been used to treat wide range of microbial and inflammatory diseases in traditional medicinal practice. In relation to growing demand of plant-based drugs, call for this research, which aimed at evaluating the phytochemical contents, antimicrobial and anti-inflammatory activities of *S. alata*. Two different percentage of solvents were used; 70% and 95% of ethanol. The extracts were subjected to phytochemical screening using standard procedures, and the antimicrobial activity against two bacterial isolates which are *Escherichia coli* and *Bacillus licheniformis* were tested using Kirby bauer disc diffusion method. Phytochemical screening shows the presence of flavonoids, tannins, alkaloids, steroids, saponin and terpenoids in the leaves extract. The 95% ethanolic extract of *Senna alata* showed antibacterial activity with zone of inhibition (ZOI) diameter of 15.3±1.2mm, 12.3±1.2mm and 9.3±1.2mm while 70% of ethanolic extract showed 12.7±2.5mm, 11.3±1.2mm and 11±2.4mm on *Escherichia coli*. When tested on *Bacillus licheniformis*, 95% ethanolic extract of *Senna alata* showed 9.7±0.9mm, 7.3±0.5mm and 6.7±1.2mm ZOI, while for 70% ethanolic extract; 11.7±1.2mm, 9.7±3.1mm and 8±1.6mm were recorded. The results indicate that *Senna alata* leaves has the potential that can be harnessed to produce complementary medicine for antibacterial activity. For the anti-inflammatory activity test, the 95% ethanolic leaves extract of this plant showed 36.8 % of inhibition while diclofenac sodium exhibited 29.6 % of inhibition at the same concentration which is 0.25mg/ml. These results revealed that the leaves extract of *Senna alata* possesses significant anti-inflammatory activities based on the inhibition of protein denaturation.