ANTIBACTERIAL EVALUATION OF *Curcuma longa*, *Punica granatum* AND *Terminalia catappa* EXTRACTS

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ABSTRACT

The *in vitro* antibacterial activities of three Malaysian medicinal methanolic plant extracts were determined using broth dilution method; rhizome extract of *Curcuma longa*, leaf extracts of *Punica granatum* and *Terminalia catappa*. Four different strains of bacteria that are *Escherichia coli* 0157:H7, *Escherichia coli* (ATCC 0157), *Listeria monocytogenes* (ATCC 19115), and *Staphylococcus aureus* (ATCC 700699) were selected. Only the extract of *Terminalia catappa* was found to exhibit antibacterial activity against *Escherichia coli* 0157:H7 with minimum inhibitory concentration (MIC) value of 500 µg/ml. The best MIC value (15.63 µg/ml) was obtained with the extract of *Punica granatum* against *Staphylococcus aureus* (ATCC 700699). The extracts were further fractionated using paper chromatography. Rhizome extract of *Curcuma longa* cannot be separated when viewed using visible light, long-wave, and short-wave ultra-violet illumination, thus, only two extracts were selected for further antibacterial screening. Most fractions showed very low antibacterial activity (1000 µg/ml) and others were nil. From the experiment, it was found that the extract of *Punica granatum* has strong potency against *Staphylococcus aureus* (ATCC 700699). The results obtained from this study will provide some new scientific evidence and verification of the traditional uses of the plants in treating bacterial infections.

Keywords: Antibacterial activity, medicinal plants, *Curcuma longa, Punica granatum, Terminalia catappa*, methanol.

Acknowledgements: We gratefully acknowledge the support received from Prof. Shaida Fariza Sulaiman. We are also thankful to the laboratory expert for their kind assistant.