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 ultraviolet 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.

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