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Preliminary study on antibacterial activity of extracts of *Eucalyptus melliodora*

M K Pathmanathan* and K Uthayarasa
Department of Botany, Faculty of Science, University of Jaffna, Jaffna, Sri Lanka

The objective of the study was to demonstrate the antibacterial effect of ethanol, methanol and aqueous extracts of leaves of *Eucalyptus melliodora* on five pathogenic bacteria by *in vitro* bioassay. Dried leaves powder was soaked with ethanol for 72 hours and filtered with No.1 whatman filter paper. This procedure was repeated for three times and all the extracts were pooled together. The resultant residue was dried and similar extraction was done with methanol and sterile water. The solvent from each extracts was removed and antibacterial activity was tested against *Pseudomonas aeruginosa, Klebsiella* sp*, Escherichia coli, Staphylococcus aureus and Bacillus* sp by agar well diffusion method. 15 ml of autoclaved and cooled nutrient agar was incorporated with 1 ml of bacterial inoculum (10^6cells / ml). It was poured into sterile petri-dish and allowed to set. The well of 8.0 mm of diameter was made on it and 100 µl (50 mg/100 µl) of each extract was inoculated into the well. 100 µl (50 µg/ 100 µl) of streptomycin was used as standard and the mixture of DMSO and acetone was used as solvent control. Plates were incubated at suitable temperature (37^oC) for 24 hours and the diameter of zone of inhibition was measured. The results were expressed as mean value of triplicate experiments. The results revealed that the growth of all the test pathogens were suppressed by all the test samples with the zone of inhibition ranging from 12.0 mm to 29.0 mm. Ethanol, methanol and aqueous extracts showed the highest activity on *Klebsiella* sp*, Bacillus* sp and *Staphylococcus aureus* respectively and the zone of inhibition was fallen in the range of 24.0 mm to 29.0 mm. The effect of ethanol extract on *Pseudomonas aeruginosa* and *Escherichia coli* was found to be less compared to the rest of the data and the zone of inhibition was 13.0 mm and 12.0 mm, respectively. The standard experiment demonstrated that among the test bacteria *Bacillus* sp was more sensitive to streptomycin and *Escherichia coli* was less sensitive to streptomycin. In order to make clear comparison of the crude extracts with standard further bioassay should be done with the equal concentration of both. Mixture of DMSO and acetone did not affect the growth of all test bacteria.

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*sumpath17@yahoo.com Tel: 021-2229645