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Investigation of antibacterial activity of methanolic extract of selected medicinal plants against important plant and human pathogenic bacteria

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Abstract

Medicinal plants play a vital role in the treatment of various plant diseases and hospital infections caused by bacteria. The aim of this work was to evaluate the effectiveness of methanolic extract of five medicinal plants traditionally used in Iran against three gram-positive and five gram-negative bacteria using agar disc diffusion method at four replications. The results indicated that the methanolic extract of *Peganum harmala* fruits affected on all tested bacteria at 500 mg/mL concentration. Also, the methanolic extract of *Sophora alopecuroides*, *Acroptilon repens*, *Hyssopus officinalis* and *Eucalyptus* leaves at 500 mg/mL concentration showed the high inhibitory effect on *Rathayibacter toxicus*, *Xanthomonas campestris pv. campestris*, *Escherichia coli* and *X. C. campestris*, respectively. The present study finds clear evidence supporting the traditional use of the plants in treating plant diseases and hospital infections related to bacteria. Our results suggest that these plants may be a good candidate for further biological and pharmacological investigations.

Keywords: Medicinal plants, Antibacterial activity, Agar disc diffusion method