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RESEARCH ARTICLE

Phytochemical screening and antioxidant properties of alcoholic extract and antibacterial activity of *Rosmarinus officinalis* L., Leaves

Abstract:

Antibiotic resistance is increasing due to the increased use of antibiotics. The emergence of new antibacterial drugs with fewer side effects than antibiotics is an issue. The medicinal plant rosemary is widely used in traditional medicine. In this study, an ethanol extract from the leaves of this plant was tested against the most common hospital-acquired infections. The following study aimed to ascertain the phytochemicals, antibacterial, and antioxidant activities of commercial rosemary flavonoids in leaf extract used on major hospital pathogens through disc diffusion and MIC tests. The *Rosmarinus officinalis* plant was used in this experimental study to evaluate its antimicrobial efficacy against pathogens by disc diffusion and MIC tests. The leaves of this plant were extracted in ethanol at concentrations of 200, 100, 50, and 25 mg/ml and evaluated for their antimicrobial effect against several pathogenic strains. In addition, the optical density in the spectrophotometer (620 nm) was used to calculate the minimum inhibitory concentration (MIC) test. In this investigation, *Pseudomonas aeruginosa*, *Enterobacter faecalis*, *Staphylococcus aureus*, and *Escherichia coli* were all sensitive to the effects of the ethanolic extract of rosemary leaves at a concentration of 200 mg/mL. The minimum inhibitory concentration (MIC) of *E. coli* and *P. aeruginosa* in this extract changed from 25 mg/ml to 100 mg/ml concentration, while the other types of bacteria required only 200 and 100 mg/ml. These findings imply that high concentrations of rosemary extract inhibited all species, including *E. coli*, *S. aureus*, *P. Aeruginosa*, and *E. faecalis*.