

Study of Antimicrobial Effects of Trigonella Foenum hydro-alcoholic Extract on Different Bacterial Strains

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Abstract

Background and objectives: Infectious diseases are the leading cause of mortality in the world. With the increase of Microbial resistance to chemical antibiotics and low side effects of medicinal herbs, it has become of great importance to use herbs as a source of antimicrobial compounds.

Material and Methods: In this study, the extract of Trigonella foenum leaf and seed was prepared using 70% ethanol. Minimum Inhibitory Concentrations (MIC) and antimicrobial Sensitivity were determined using microdilution broth and disk diffusion method, respectively. The Results were compared with Gentamicin, Ciprofloxacin and Fluconazole. The tested strains were: clinical strains of *Staphylococcus aureus*, *Escherichia coli*, *Klebsiella pneumonia*, *Enterococcus faecium*, *Candida albicans* and two standard strains of *Staphylococcus aureus* and *Pseudomonas aeruginosa*.

Results: The least MIC of the leaf extract against the standard strain of *S. S. aureus*, *E. faecium* and clinical *S. aureus* is 64 µg/ml and for seed extract against *E. faecium* and Standard *S. S. aureus* is also 64 µg/ml. The largest diameter of inhibitory zone caused by leaf extract on Standard *S. S. aureus* is 23mm, and for seed against *E. faecium* is 18 mm.

Conclusion: Because of antimicrobial effects of leaf and seed extract of Trigonella foenum, these extracts can be used as anti microbial compounds in pharmaceutical and food industries. Therefore, the isolation, identification and purification of the antimicrobial compounds of the extracts are recommended.

Key words: Trigonella foenum, Antimicrobial effects, Minimum inhibitory concentration.