

In Vitro Antibacterial Activity of *Pimpinella Anisum* Essential Oil Against Some Pathogenic Bacteria

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Background & Objectives: The increasing prevalence of antibiotic resistant bacteria has led to a demand for new agents that could be used to decrease the prevalence of bacterial disease. There is evidence that essential oils extracted from plants could be employed as antimicrobial agents in food systems. As a medicinal plant, *Pimpinella anisum* has been used as a stimulating effect of digestion, antibacterial, antiparasitic, antifungal and antipyretic. The aim of this study was to determine essential oil compositions of *Pimpinella puberula* and their antimicrobial activity.

Methods: Essential of this plant prepared by using a clevenger for 3h to water-distillation. Antibacterial properties were evaluated by standard Microplate serial dilution methods to determine MIC and MBC values.

Results: Chemical analysis of plants essential oils by GC/MS showed that 15 component with the %97.2 in *Pimpinella anisum* essential, Longifulen and benzene were the major component, The MIC and MBC values were the 4800 and 9600 µg/ml for *Listeria monocytogenes* and 9600 and 19200 µg/ml for *Salmonell typhimurium* respsectively. These results indicate that this essential oil has appropriate antibacterial properties against gram positive bacteria in comparison gram negative.

Conclusion: Therefore, it can be suggested to purify and evaluate the active substances of this essential oil for future application as antibacterial agent and food preservative to combat pathogenic and toxigenic microorganisms.

Keywords: Antibiotic Resistant; Essential Oil; *Pimpinella anisum*