Phytochemical and Antimicrobial Properties of Allium ascalonicum Essential Oil

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Backgroung & Objectives: Due to the side effects of chemical and synthetic antimicrobial agents and emerging increase in bacterial resistances, more studies have recently focused on characterization of novel potential natural antimicrobial agents of plant, animal and microbial sources. Such substances are thought to have more half life and fewer side effects. The goal of the present study includes determination of biochemical properties and antimicrobial effects of *Allium ascalonicum* essential oils against bacterial pathogens of clinical importance including *Escherichia coli* and *Staphylococcus aureus*.

Methods: The chemical analysis of the essential oil by Gas chromatography/mass spectrophotometer (GC/MS) shows the presence of 15 substances (96.62%) and organosulfur substances had the highest concentrations among other substances.

Results: MIC and MBC results (were evaluated by standard Microplate serial dilution Methods) showed that the highest antimicrobial activities against S.aureus (MIC 2400 µg/ml, MBC 9600 µg/ml) and the lowest antimicrobial activities was observed in cases of *E.coli* (MIC 9600 µg/ml, MBC 19200µ g/ml).

Conclusion: These results indicate that this essential oil has appropriate antibacterial properties. Therefore, it can be suggested to combine this essential oil with other agents for the preservation of foods against pathogenic and toxigenic microorganisms.

Keywords: *Allium ascalonicum*; Essential Oil; *Escherichia coli*; *Staphylococcus aureus*