

## Antibacterial effect of *Allium paradoxum* extract against several foodborne pathogens

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### Abstract

Due to the adverse and harmful effects of chemical compounds as preservatives, today plant extracts and essential oils are recommended to maintain the quality of food and increase their shelf life. The use of essential oils in food, cosmetics and pharmaceutical industries has expanded today due to their antimicrobial and antioxidant properties. The antioxidant and antimicrobial activity of essential oils is due to the presence of phenolic and flavonoid groups. These compounds increase the permeability of the cell membrane and the loss of cell components. In this study the MIC and MBC of both leaves and root extract of *Allium paradoxum* were determined against several pathogens; including *Escherichia coli*, *Staphylococcus aureus*, *Bacillus cereus*, *Listeria monocytogenes*, *Salmonella Typhimurium*, *Pseudomonas aeruginosa*. The minimum and maximum MIC and MBC of *Allium paradoxum* leaves and root extract for tested foodborne pathogens were 4 and 16 mg/ml, and 8 and 32 mg/ml, respectively. The findings showed that the *Allium paradoxum* extracts had good antibacterial activity and can use for shelf life extension in the food industry.

**Keywords:** Foodborne pathogens, *Allium paradoxum*, MIC, MBC.

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