

## Study of the effect of ethyl acetate and chloroform extracts of *Scilla persica* HAUSSKN against *Staphylococcus aureus* and *Escherichia coli*

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**Background and Aims:** *Staphylococcus aureus* due to the potential morbidity and increasing resistance against anti-bacterial drugs has become one of the world's major health problems and toxin of this Bacteria are caused nausea, vertigo and diarrhea. The enterotoxin produced by *E. coli* responsible for gastrointestinal toxicity and gastrointestinal symptoms caused by it. In traditional medicine, the plant *Scilla persica* HAUSSKN has been used as an edible plant that is effective in treating constipation. In this study, anti-bacterial effects of Chloroform and Ethyl acetate extracts of *Scilla persica* HAUSSKN plant was evaluated and compared for a gram-positive bacteria (*Staphylococcus aureus*) and Gram-negative bacteria (*Escherichia coli*).

**Methods:** Ethyl acetate and Chloroform extracts of the herb *Scilla persica* was prepared by maceration method and their anti-microbial effects was examined by using the disk diffusion and dilution method (macro-dilution). The minimum inhibitory concentrations of bacteria (MIC) and minimum bactericidal concentrations of bacteria (MBC) was determined against bacteria: *Staphylococcus aureus*-PTCC1112 and *Escherichia coli*-PTCC1330. It should be noted that DMSO and nalidixic acid were used as a negative control and positive control, respectively.

**Results:** The results showed that Ethyl acetate extract had significant effect on both bacteria, so that the maximum inhibition zone, MIC and MBC was 26/3 ± 0/1 mm, 6.25 and 6.25 mg/ml for *Staphylococcus* and was 23/7 ± 0/3 mm, 6.25 and 12.5mg/ml for *Escherichia coli*, respectively. Also, the Chloroform extract had only a positive effect on *Staphylococcus* (Inhibition zone, 16/4 ± 0/2 mm) and was almost ineffective on *Escherichia coli*.

**Conclusions:** Due to the significant effects of Chloroform and Ethyl acetate extracts, *Scilla persica* HAUSSKN plant has an anti-microbial effect and its Phytochemical researches is valuable and interesting.

**Keywords:** Disk diffusion method; *Scilla persica* HAUSSKN; Macrodilution; *Staphylococcus aureus*