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# Study the kinetic of *in vitro* antibacterial activity of *Salicornia spp.* against *Staphylococcus aureus* strains

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**Background and Aims:** Salicornia is a halophyte plant growing in different part of Iran. There is several reports about antibacterial effect of europea species but there is no report about antibacterial effect of Iranian species. In this research we study the antibacterial effect of extract of different Iranian Salicornia species, against Staphylococcus aureus by aiming to serve that as an alternative for antibiotics to avoid the side effect of them on the host cells.
**Methods:** Plant extract were prepared in final concentration of 100 mg ml-1 from different Salicornia species gathering from different part of Iran. Bacterial suspension was prepared by using Staphylococcus aureus isolated from food. The bacterial culture were treated by plant extract or oxytetracycline antibiotic compare with control. A treatment was incubated overnight at 37 °C in 96 well microplate in microplate reader system (BioTek's PowerWave XS2, USA). Analyses were conducted using SPSS (SPSS version 11) repeated measures ANOVA model.
**Results:** the effect of extract of Salicornia shown reduction of the growth of Staphylococcus aureus during 24 hours, however this effect is lower than 25 ppm of oxytetracycline antibiotic known as a strong inhibitor of growth of Staphylococcus strains Many Salicornia spp extract were shown moderate effect, reducing 1.5 times and some like Salicornai iranica gathering from Kharameh in fars province has extreme effect, reducing 5 time of bacterial growth rate during 24 hours. Not only the changing of the species change the antibacterial effect, but also the place of the growth of the plant showed big influence on the antibacterial effect of the plant.
**Conclusions:** It seems the effect of the extracts was depends on the plant species and the plant growth climates and the bacterial species can be different.

**Keywords:** Antibacterial activity; Staphylococcus; Salicornia