Evaluation of antimicrobial effect of ethanol and chloroform extracts of *Stachys byzantina*

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**Background and Aims:** In this study antimicrobial effects of ethanol and chloroform extracts of *Stachys byzantina* which were used as antimicrobial agent in Iranian folk medicine were evaluated against 11 strain of gram positive and negative bacteria by Determination of MIC and MBC value.

**Methods:** Preliminary antibacterial activity study of the ethanol and chloroform macerated extracts of S. byzantina were investigated against eleven bacterial strain by cup plate method. After primary evaluation of the antibacterial activity of ethanol and chloroform extracts of S. byzantina MIC and MBC of extracts were determined by broth macro dilution method against the test organisms as recommended by the national committee for clinical laboratory standards NCCL 2006.

**Results:** The ethanol extract of S. byzantina showed more antimicrobial effects against all tested Gram positive and Gram negative bacterial strains with the largest diameter of inhibition zones 28 mm against *Staphylococcus aureus* (ATCC 29923) with lowest MIC and MBC value equal to (1.5, 6.25 mg/ml). The other MIC and MBC values against *Micrococcus luteus* (ATCC9341), *Klebsiella pneumoniae* (ATCC10031), *Escherichia coli* (ATCC8739), Methicillin Resistance *Staphylococcus Aureus* (ATCC33521), *Pseudomonas aeruginosa* (ATCC27853), *Streptococcus sanguis* (ATCC1447), *Streptococcus sorbinas* (ATCC1601), *Streptococcus mutans* (ATCC35608), *Streptococcus salivarius* (ATCC9222), *Streptococcus faecalis* (ATCC1373), with were assessed to be (0.15,3.1), (3.1,50), (3.1,100), (12.5,25), (12.5,50), (6.25,100), (12.5,50), (12.5,100), (12.5,100), (12.5, up to 200) mg/ml, respectively. The chloroform extract hasn't show good track of antimicrobial effect in comparison to ethanol extract.

**Conclusions:** The results concluded that the ethanol extracts of *S. byzantina* has a potential antimicrobial effect due to its flavenoids part of extract which reduced in chloroform extract. Ethanol extract of *S. byzantina* had the best antimicrobial effect on the tested micro organisms.

**Keywords:** MIC; MBC; Antimicrobial