

Antibacterial activity native medicinal plants extracts in Lorestan, Iran

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Abstract

Background & Objective: There is an increasing interests in substitution of natural products for synthetic chemicals in drugs and foodstuff. Reports of antibiotic resistant bacteria and side effects of chemical food preservatives suspected to be carcinogenic have drawn attention towards application of herbal and natural substances. Towards this end, edible plants are more safe and therefor have priority for investigation. In this study, antibacterial activities of six medicinal plants including *Thymus* (T.) *eriocalyx* and *T. persicus*, *Allium* (A.) *haementhoides*, *Fumaria* (F.) *parviflora* Lam, *Buxus* (B.) *hyreana pojark*, and *Tragopon* (Tr.) *carcifolus* Lorestan province in Iran were examined.

Materials & Methods: In this study, flowers and leaves from *T.persicus*, *T. eriocalyx*, and leaves from other plants were collected from Zagros highlands, dried and soaked in hexan for 48. The solvent was separated then evaporated under reduced pressure. The concentrated extracts were shaken and foze at -10°C. Then it was centrifuged and the solvent was evaporated. The extracts were finally resuspended in sterile PBS containing DMSO. Antibacterial activities were examined by disk diffusion and broth microdilution technique, using standard (ATCC) gram positive and negative bacteria and standard (Muller Hinton agar and broth or Isosensitest agar) media in order to determine Minimum Inhibitory (MIC) or Bactericidal (MBC) concentration.

Results: Strong antibacterial activities were observed against both gram positive and negative bacteria including *E.coli*, *S. aureus* and *P. aeroginosa* by *T.eriocalyx* and *F. parviflora*. Also *B. hyreana pojark* showed antibacterial activity against *S. aureus* at a concentration of MIC=320 µg/ml and MBC=80 µg/ml.

Conclusion: This study showed that *T.eriocalyx*, *F. parviflora* and *B. hyreana pojark* have antibacterial effects in vitro. Therefore it is suggested the application of these extract in medicine and food industings could be helpful.

Key Words: Antibacterial, Medicinal plants, *Thymus eriocalyx*

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