ANTIBACTERIAL EFFECT OF ESSENTIAL OILS FROM *PEROVSKIA ABROTANOIDES* KAREL AGAINST PERIODONTAL PATHOGENS, *STREPTOCOCCUS MUTANS* AND *STREPTOCOCCUS SANGUINIS* AND IT'S RELATIONSHIP WITH PLANT PHENOLOGY

Vejihe mokhtarshahi,[1,*]. Parwaneh Abrishamchi,[1] Kiarash Ghazvini,[2] Javad Asili, [3]

[1] Department of Biology, Faculty of Science, Ferdowsi University of Mashhad, Mashhad, Iran
[2] Microbiologist, Department of microbiology, Faculty of medicine, Mashhad University of Medical Sciences, Mashhad, Iran
[3] Department of Pharmacology, School of Medicine , Mashhad University of Medical Sciences , Mashhad , Iran
E-mail: v.mokhtarshahi@stu-mail.um.ac.ir

In long period of time, plants were used to improve dental health and promote oral hygiene. Periodontal disease is a complex inflammatory disease characterized by bacterial infection. The aim of present study was to determine the antimicrobial activity of essential oils extracted from *Perovskia abrotanoides* Karel against oral pathogens, *Streptococcus mutans* (ATCC35668) and *Streptococcus sanguinis* (ATCC CIP.55.128). Perovskia is a genus belongs to the Lamiaceae family which is represented in Flora Iranica. The aerial parts of Perovskia *abrotanoides* Karel were collected during three periods of growth: vegetative, full flowering and seed setting from Kalat in northeast of Khorassan Razavi province of Iran. Essential oils were extracted by steam distillation method. Extraction yields related to leaves at vegetative, flowering and seed setting were estimated as 1.69%, 1.49% and 1.29% w/w respectively. Efficiency of essential oils extraction for flowers was 1.64% w/w. Antimicrobial activity was assayed via broth macro dilution method. Minimum inhibitory concentrations (MIC) and minimum bactericidal concentrations (MBC) of essential oils were determined. Essential oils showed effective antimicrobial activity at low concentrations especially full flowering (flowers and leaves) and seed settinging. The MIC and MBC from essential oil of flowers was the same with leaves flowering and seed setting. Therefore, MIC and MBC were measured as 0.125, 1 µg/ml for *Streptococcus mutans* and 0.25, 2 µg/ml for *Streptococcus sanguinis*.