Abstract: Background and Objectives: Not surprisingly, valuable natural sources of biologically active compounds derived from medicinal plants are growing to be ever more eminent for the elimination of pathogenic microorganisms, due to the anti microbial resistance of microorganisms against common antibiotics.

Materials & Methods: Accordingly, the essential oil from aerial parts of Perovskia abrotanoides karel (Lamiaceae) was analyzed by gas chromatography coupled to a mass spectrometry system. Additionally, the microbial growth inhibitory activity of the isolated essential oil were determined using agar diffusion method against nine bacterial species of both gram positive and negative ones; Escherichia coli, Staphylococcus aureus, Staphylococcus epidermidis, Klebsiella pneumonia, Pseudomonas aeruginosa, Bacillus cereus, Entrococcus faecalis, Shigella dicentria and Salmonella typhimorium. The minimal inhibitory concentrations were also determined by serial agar dilution method for all strains of bacteria to evaluate the growth inhibitory properties.

Results: Twenty three compounds were identified, representing 99.7% of the total oil. The main components of the oil were identified as verbenone (25.1%) followed by terpinolene (22.6%), sabinene (12.2%), β-ocimene (6.8%), viridiflorene (5.2%), trans-carveol (5.2%), and α - phelandrene (4%). Although the essential oil showed activity against all the tested microorganisms, differences in microbial susceptibility were registered. Concisely, these variations could be explained by the differences both in the cell wall layers of gram negative and positive bacteria and also the chief constituents of the essential oil contributing in its superior anti microbial activity.

Conclusion: Overall, our results validated the traditional usage of P. abrotanoides by the native healers of Golestan province in north of Iran as anti inflammatory, and anti microbial agents for treatment of different infectious diseases.

Perovskia abrotanoides, antimicrobial activity, essential oil, Bacillus cereus, Staphylococcus aureus, Entrococcus faecalis

Presentation: Poster