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# Evaluation of the antibacterial activity of Zataria multiflora Boiss, Rhus coriaria L. (Sumac), Mentha piperita L., and Ocimum basilicum L. extracts on Brucella strains isolated from brucellosis patients

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## Abstract:

Since brucellosis has been called a chronic illness and treatment of patients infected with this bacterium has not been successful, the present study aims ed to evaluate the effects of several medicinal plant extracts on clinical Brucella strains. Materials and methods: First, Brucella strains were isolated from brucellosis patients. Then an antibiotic resistance assay was performed for these strains, while the antibacterial activity of the above-mentioned extracts was evaluated. Results: After performing accurate evaluations, the obtained results showed that all of the isolated Brucella strains were sensitive to tetracycline, doxycycline, and gentamicin, and the rates of antibiotic resistance to rifampin and streptomycin were 83.3% and 11.1%, respectively. The mean zone of growth inhibition for Zataria multiflora Boiss. was >=28.77 mm, Rhus coriaria L. (sumac) was 22.55 mm, Mentha piperita L. was >=7.5 mm, and the gentamicin disk was >=30 mm. The mean minimum inhibitory concentration (MIC) for Z. multiflora was 1237 mg/mL, and it was 3255.2 mg/mL for sumac, and 5642 mg/mL for M. piperita L. The minimum bactericidal concentration (MBC) rate for these herbs was 5900 mg/mL, 9027 mg/mL, and 12152 mg/mL, respectively. Furthermore, no anti-Brucella activity was observed for Ocimum basilicum L. Conclusion: The results obtained in this study prove that Z. multiflora extracts show high anti-Brucella activity and it can be used for better treatment of brucellosis.