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Antimicrobial activity and biochemical analysis of *Sorbus domestica* leaves

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Medical herbs have many bioactive components and they are used in microbial treatments since ancient times. *Sorbus domestica* is also called service tree and it is important for folkloric medicine in Turkey. This tree is a native species of southwest Asia, northwest Africa and Europe. The antimicrobial activity of *S. domestica* leaves were investigated against 17 bacteria and 1 fungi by using disk diffusion method. These microbial strains include *Bacillus*, *Enterobacter*, *Enterococcus*, *Escherichia*, *Klebsiella*, *Listeria*, *Pseudomonas*, *Salmonella*, *Staphylococcus* and *Candida* genera. Twelve of them are standard species and they are important for exact determination of antimicrobial potential. 6, 12, 24 mg samples were prepared by using ethanol extraction method. Bioactive composition of this sample was also determined by Gas Chromatography-Mass Spectroscopy (GC-MS) and National Institute of Standards and Technology (NIST) library was used for mass spectra analysis. The results were presented that *S. domestica* has antimicrobial activity against fourteen microorganisms tested. One of them was observed to be highly susceptible (15-30 mm); seven of them are moderately susceptible (14-10 mm) and three of them are low susceptible (9-7 mm). Several active metabolites were identified, but some composition of this sample didn't match with the library. Unknown molecules should be analyzed by NMR spectra for identification and their 3D structure determination.

Keywords: Antimicrobial activity, bioactive composition, ethanol extract, medicinal plant, *Sorbus domestica*