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ANTIMICROBIAL ACTIVITY AND BIOCHEMICAL ANALYSIS OF FRANKENIA HIRSUTA

ÖZCAN ŞİMŞEK[1], ALI YETGİN[2], KEREM CANLI[3], ERGIN MURAT ALTUNER[4]

ABSTRACT

Frankenia hirsuta is widely located in Turkey, but antimicrobial potential of it wasn't determined. Broad range of microorganisms was used for this determination. By using disk diffusion method, 17 bacteria and 1 fungi susceptibility was analyzed and these microbial species are Bacillus subtilis ATCC 6633, Candida albicans ATCC 10231, Enterobacter aerogenes ATCC13048, Enterococcus durans, Enterococcus faecalis ATCC 29212, Enterococcus faecium, Escherichia coli ATCC 25922, Escherichia coli CFAI, Klebsiella pneumoniae, Listeria monocytogenes ATCC 7644, Salmonella enteritidis ATCC 13075, Salmonella infantis, Salmonella kentucky, Salmonella typhimurium SL 1344, Staphylococcus aureus ATCC 25923, Staphylococcus carnosus MC1.B, Staphylococcus epidermidis DSMZ 20044 and Streptococcus agalactiae DSMZ 6784. 0.77, 1.54 and 3.08 mg samples were prepared by using ethanol extraction method. Also, bioactive composition of this sample was determined by Gas Chromatography-Mass Spectroscopy and National Institute of Standards and Technology (NIST) library was used for mass spectra analysis. The results were presented that F. hirsuta has antimicrobial activity against all of the studied study except E. aerogenes, E. coli. Two of them have high susceptible (higher than 15 mm); eleven of them have moderate susceptible (14-10 mm) and only three of them have low susceptible (9-7 mm). Several active metabolites were identified, but some composition of this sample is not match with library. Unknown molecule should be analysed by NMR spectra for 3d structure determination and identification. These results are the first report for the antimicrobial potential and chemical composition of F. hirsuta.

KEYWORDS

Frankenia hirsuta, antimicrobial activity, bioactive composition, ethanol extract.

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