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CHEMICAL CONSTITUENTS AND BIOLOGICAL ACTIVITIES OF DIFFERENT SOLVENT EXTRACTS OF PROSOPIS FARCTA GROWING IN EGYPT

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Different solvent extracts from the aerial part of *Prosopis farcta* growing in Egypt have been biologically evaluated by studying their antimicrobial, anticancer and antioxidant activities. Furthermore, the chemical analysis using GC/MS has been performed for the promising extracts n-hexane and methylene chloride, and this analysis led to the identification of 26 and 32 compounds respectively from n-hexane and methylene chloride. The major compound identified in the n-hexane is (Z) 9.17- octadecadienal (10.60%) while for methylene chloride is tricosanoic acid (9.24%). In addition, chromatographic isolation of the ethyl acetate and n-butanol extracts resulted in the isolation of four compounds which were identified as; dihydrokaempferol-3-O-α-L-rhamnoside (1), apigenin (2), 4'- methoxyquercetin (tamarixetin) (3) and acacetin-7-O-α-L-rhamnoside (4). n-hexane and methylene chloride showed moderate antimicrobial activities against three microbes for each, that is, Shigella spp., *Escherichia coli and Proteus vulgaris* for n-hexane and *Erwinia spp., Escherichia coli and Staphylococcus epidermis* for methylene chloride. On the other hand, the ethyl acetate showed higher antimicrobial activities against *Shigella spp., Escherichia coli, and Candida albicans*. Likewise n-butanol extract showed higher activity against *Shigella spp., Erwinia spp., E. coli, P. vulgaris, S. epidermis and Candida albicans*. Moreover, the anticancer activities were evaluated against four human tumor cell lines namely; HepG-2, HeLa, PC3 and MCF-7. The n-butanol extract showed the highest activity against MCF-7 cell line with IC50 of 5.6 µg/ml compared to 5-fluorouracil with IC50 of 5.4 µg/ml, while the ethyl acetate showed the highest activity against Hela cell line with IC50 of 6.9 µg/ml compared to 5-fluorouracil with IC50 of 4.8 µg/ml. Also, the inhibition percentages (I%) of 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid (ABTS) radical were 83.1, 82.0, 87.2 and 87.0% respectively for the n-hexane, methylene chloride, ethyl acetate and n-butanol extracts, respectively, compared to ascorbic acid with 89.2%. In, conclusion the different extracts of P. farcta aerial part showed promising antimicrobial, anticancer and antioxidant activities, in which may be return to their identified bioactive secondary metabolites.

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