

Antitumor, antioxidant, antimicrobial activities of the methanolic extract of licorice roots

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Twenty phenolic compounds were isolated from the methanolic extract of licorice roots (*Glycyrrhiza glabra* L.) and identified on the basis of chromatographic methods, HPLC and spectroscopic data. The efficiency of licorice methanolic extract as anticancer agent for breast, colon and liver was tested. The results showed that the IC₅₀ of the extract was 28 µg/ml for anticolon cancer and 31.2 µg/ml for antibreast cancer, while it was 3.43 µg/ml for antihepatic cancer. The antioxidant activity was measured by 2, 2'-Diphenyl Picrylhydrazyl (DPPH) radical scavenging method at three different concentrations 0- 25, 50, 100 µl. This extract showed strong antioxidant activity against DPPH as compared with vitamin C. Antimicrobial activity of methanolic extract of licorice was studied against three bacterial strains (*E. coli*, *Staphylococcus aureus* and *Salmonella typhi*) and four fungal species (*Fusarium oxysporum*, *Aspergillus niger*, *Penicillium* sp. and *Trichoderma* sp.) at concentration 0.1 ml and 0.3 ml (10 mg / 1 ml). The extract showed strong inhibitory effect for most species at concentration 0.3 ml (10 mg / 1 ml).

Keywords: Licorice, *Glycyrrhiza glabra*, Phenolic constituents, Antitumor, Antioxidant, Antimicrobial

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