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Synergistic antimicrobial effects and GC-MS analysis of phytocomponents of *Commiphora quadricincta*Nehad Mahmoud Gumgumjee, Nariman A H Aly and Fawziah H Malawi  
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The *Commiphora quadricincta*, a small tree, belong to Burseraceae family is traditionally known for its medicinal properties. The present study was therefore carried out to investigate the synergistic antimicrobial activities and the phytochemicals of the bioactive components in the extract of this plant species. The antimicrobial activities of stem, bark and leaves extract was investigated against 7 medically important bacterial strains, namely *Bacillus subtilis*, MRSA, *Micrococcus*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Klebsella pneumoniae* and five fungi (*Aspergillus niger*, *A. fumigatus*, *A. flavus*, *Candida albicans* and *Saccharomyces* spp.). The antibacterial activity was determined using agar well diffusion method. The most susceptible bacteria to this extract are *Escherichia coli*, while the most susceptible fungi were *A. flavus*. GC-MS analysis revealed that the ethanol extract of *Commiphora quadricincta* contained mainly; 2-Methyl-3-pentanol (2.84%); Butyl hydroxytoluene (22.32%); 9,12,15-Octadecatrienoic acid, 2-phenyl-1, 3-dioxan-5-yl ester (5.90); Ethyl isoallocholate (11.21%) ; Amyrin (2.22%) and Flavone 4'OH, 5'OH, 7 di-O-glucoside (11.21%). Most identified compounds are known to have antimicrobial activity.

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## Factors that determine the quality of canned tuna fish in Iran

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Canning is one of the important ways to fish preservation and the skipjack tuna fish have the most commercial importance in fish industry. Quality is assessed by the tuna meat quality, freshness, texture and fat, which can be altered by factors as kind of capturing, preparation and storage time. These factors were correlated to identify those that affect quality. The data obtained from five tuna major canned factory. The parameters and fish quality analyzed by multiple linear regressions and the result shows live catching, quick chilling and fewer days of storage positively affected the quality.

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