

Chemical Characterization of Octopus Vulgaris Ink and Evaluation of its in-vitro Antioxidant, Antimicrobial, and Anti-Schistosomicidal Activities

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Abstract : One of the most distinctive and defining features of cephalopods squid, cuttlefish, and Octopus is their inking behavior. Their ink, which is blackened by melanin but also contains other constituents, has been used by humans in various ways for millennia. The present study aims to investigate the chemical profiling of the Octopus vulgaris ink extract and to evaluate its antioxidant, antimicrobial, and anti-schistosomal activities. The present results showed that GC-MS examination of Octopus vulgaris ink comprises 21 compounds. The main detected compounds are (E)-1, 2, 3, 4-Tetra (4-phenylphenyl)-2-butene-1,4-dione, Lipo-3-episapelin A, and 5,10-Dihexyltetraabenzoporphyrin. Results showed that the octopus ink had antioxidant capacity and the capability to mask DPPH free radicals in comparison with ascorbic acid. Octopus Vulgaris ink extract had inhibitory action against three gram-positive bacteria, Streptococcus faecalis, Staphylococcus aureus, and Bacillus subtilis, and three gram-negative bacteria, Neisseria gonorrhoeae, Escherichia coli, and Pseudomonas aeruginosa. Additionally, the extracted ink revealed antifungal activity against Aspergillus flavus and yeast as Candida albicans. The obtained data indicated the effectiveness of ink extract in pharmaceutical industries as an antioxidant, antimicrobial and antischistosomicidal

Keywords : antimicrobial, antioxidant, ink, octopus vulgaris

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