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Cytotoxic and antioxidant activities of three endemic Algae of Oman Sea

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Background and Aims: Seaweeds or marine macro algae are potential resource in the marine environment. During the last years, many studies have been made on biological activities of the seaweed , and could be potential rich sources of natural antioxidant. Hence, the present study was aimed to investigate the antioxidant properties of three different brown seaweed extracts and their different fractions using various in vitro free radical scavenging procedures.
Methods: The samples of three algae (Padina australis, Sargassum ilicifolum, Caulerpa peltata) were collected from Oman sea in Chahbahar, Iran in 2008.Each dried, ground alga (ca.100 g) were Soxhlet extracted, successively, with hexane(10h), dichloromethane (DCM) (8h) and methanol (MeOH) (10h) .Solvents were removed in vacuous by rotary evaporator at a maximum temperature of 45° C.each crude extract used for bio assay tests.
Cytotoxic activity of the all extracts of algae against the cancerous cell lines compared with normal cell line were assessed using MTT assay and Brine shrimp Lethality bioassay. Screening of extracts for antioxidant activity was performed with DPPH free radical method.
Results and Conclusions: Antioxidant activities of extracts have been compared with quercetin and vitamin C. All extracts were weaker than standards. Based on our results, the weak activity observed for all extracts in MTT assay. Despite the results of MTT assay, most of extracts were toxic in the brine shrimp bioassay. This result suggests these algae can be used as a source of natural food without any cytotoxic and harmful effect to human cells.

Keywords: Cytotoxic activities; Antioxidant; Oman Sea