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## Evaluation of antioxidant properties of aqueous extract of brown *Sargassum vulgare* macroalgae collected from Qeshm coast

M. Ahadifar<sup>\*1</sup>, S.M. Ojagh<sup>2</sup>, S.H. Hoseinifar<sup>2</sup>, M. Kordjazi<sup>3</sup>,  
M.A. Khanlar<sup>4</sup> and A.R. Alishahi<sup>5</sup>

<sup>1</sup>M.Sc. Student, Dept. of Fisheries, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran,

<sup>2</sup>Associate Prof., Dept. of Fisheries, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran,

<sup>3</sup>Assistant Prof., Dept. of Processing of Fishery Products, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran,

<sup>4</sup>Ph.D. Graduate, Dept. of Fisheries, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran,

<sup>5</sup>Assistant Prof., Dept. of Fisheries, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran

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### Abstract

Antioxidant are the main agents of neutralizing free radicals, which are active and harmful substances for humans. The aim of this study was to investigate the antioxidant properties of aqueous extract of *Sargassum vulgare* brown algae collected from the shores of Qeshm on a laboratory scale. After collecting the algae from the shores of Qeshm and washing with fresh water, extraction of *Sargassum vulgare* algae was performed then the desired extract was obtained in dry freeze dryer as a powder. The parameters of total Phenol, total antioxidant properties, free radical scavenging activity of DPPH, superoxide free radical, iron ion chelating ability and hydroxyl radical were investigated in this study. According to the results the content of total phenol, total antioxidant activity, DPPH free radical, superoxide free radical percentage, iron ion chelating ability and hydroxyl radical in their highest concentrations equivalent to 16.22 mg of gallic acid per 100g of extract 521.70 mg of ascorbic acid per gram of extract, 24.08%, 14.08% and 33.65% were calculated, respectively. Due to the high ability of *Sargassum vulgare* brown algae extract in antioxidant activities this algae extract can be introduced as a rich source of natural antioxidant compounds in food, pharmaceutical cosmetic and health industries.

**Keywords:** Antioxidant, Aqueous extract, Brown macroalgae, Free Radicals

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\*Corresponding author: mitraahadifar@gmail.com