Determining of antioxidant activity of *Gracilaria corticata* macroalgae from the Bandar-E- Lengeh and Qeshm Island using non-polar (N-hexane) extracts

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Abstract

In this study, the antioxidant properties of *Gracilaria corticata* (red macroalgae) were investigated. Sampling was performed from the shores of Bandar Lengeh and Qeshm Island in the spring of 2019 and identified at the species level using morphometric characteristics. Non-polar extract of *Gracilaria corticata* was prepared using non-polar hexane solvent and examined by DPPH assay using spectrophotometer. Comparison of the mean of antioxidant and reduction activity of samples in different concentrations showed significant difference between antioxidant and reduction activities between Bandar Lengeh and Qeshm Island samples. In this study, macroalgae extract from the coasts of Bandar Lengeh showed more activity in terms of inhibiting DPPH free radicals respect to macroalgae extract belonging to Qeshm coasts. Extracts collected from Bandar Lengeh and Qeshm Island, inhibited 50% of DPPH free radicals in concentrations of 566.5 and 895.5 µg/ml, respectively. Also, N-hexane extract of the samples collected from Bandar Lengeh and Qeshm reduced 50% of the ferric ions at concentrations of 1020 and 1168 µg/g, respectively. The results of this study showed that the N-hexane extract from the studied species belonging to Bandar Lengeh coasts showed more activity in terms of DPPH free radical scavenging and ferric ion reducing power compared to Qeshm Island samples, which could be due to increased oxidative pressure due to increased presence of environmental stresses, especially pollutants, in the Bandar-e-Lengeh area compared to Qeshm Island.

Keywords: Persian Gulf, Red algae, Antioxidant activity, *Gracilaria corticata*.