



## ***ANTIOXIDANT ACTIVITY OF *Gracilaria edulis**** ***(RHODOPHYSEAE)***

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Recently marine seaweeds especially *Gracilaria edulis* are being used to produce new drugs as well as healthy and delicious low calorie foods. These are known as primary sources of secondary metabolites and are also used as natural antioxidants and antimicrobials. The purpose of the research was to determine the antioxidant activity of *G.edulis*. Different concentrations such as 5, 10, 15, 20, 25 and 30 µg/ml of the methanol extract of *G.edulis* and other aromatic compounds such as 2, 4 dinitro phenyl hydrazine and Aniline derivatives were prepared to determine antioxidant activities by hydrogen peroxide scavenging assays on absorbance at 230 nm. The methanol extract at the concentration of 5µg/ml recorded the highest total antioxidant activity ( $p<0.05$ ) compared with other *G.edulis* sample concentration. Steady state antioxidant activities of methanol extract of *G.edulis* were exhibited at its 15ug/ml. In IBM SPSS package 2010, Chi squared test and paired test were clearly shown the absorbance, inhibition or percentage scavenging of hydrogen peroxide depend on the concentration of the *G.edulis* methanol extract. These two statistical tests exhibit the relationship between the concentration of the methanol extract of the *G.edulis* ( $p<0.05$ ) and antioxidant activity. When methanol extract of *G.edulis* concentration increased, Hydrogen peroxide absorbance was decreased and percentage scavenging of hydrogen peroxide or antioxidant activity was increased. Aniline compounds were more active than other tested aromatic compounds. Antioxidant activity of these tested compounds depends on presence of active groups and its position and number. The OH and NH<sub>2</sub> were highly active when present in ortho followed by para and meta positions. The NH<sub>2</sub> electron donor substitution group gives positive effect to antioxidant activity. And the NO<sub>2</sub> electron withdrawing group gives negative effects. Antioxidant activity was high in *G.edulis*, followed by aniline, 2,4 dinitro phenyl hydrazine and 2,4 dinitro aniline. Finally *G.edulis* showed prominent antioxidant activity. This study is used in future for bakery products development.

**Keywords:** *Marine Sea weed, Hydrogen Peroxide Scavenging, Methanol Extracts, Antioxidant*