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Evaluation of Total Phenolic and Antioxidant Contents of Sulfated Polysaccharide from *Chnoospora minima* (Hering, 1856)

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Abstract

Active metabolites and functional ingredients of seaweeds have valuable beneficial health effects. Sulfated polysaccharides in seaweeds have been increasingly studied over the years in the pharmaceutical field, given their potential usefulness in applications such as designing of drug delivery systems for cancer and diabetes. *Chnoospora minima* is a brown algae belongs to family scytosiphonaceae that contains Fucoidan as its major polysaccharide constituent. This study examined the total phenol and antioxidant potential of sulfated polysaccharide isolated from *Chnoospora minima*. Antioxidant activities of purified sulfated polysaccharides were evaluated using 2, 2 diphenyl-1-picrylhydrazyl (DPPH) free radical scavenging and Ferrous Reducing Ability of Plasma (FRAP) assays. Total phenolic content was determined using spectrophotometric technique, based on the Folin-Ciocalteau reagent, and the values were expressed as Gallic acid equivalence. The total Phenolic content was 1.22 ± 0.22 mg Gallic Acid Equivalence Weight (GAE)/g of dry mass. The free radical scavenging activity of the sulfated polysaccharide from *Chnoospora minima* revealed that the reduction of DPPH occurred in a concentration-dependent manner with high reductions occurring at the highest concentration. The radical scavenging activity of sulfated polysaccharide from *Chnoospora minima* was 0.32 ± 0.22 mg/ml compared to the standard DPPH ($IC_{50} = 0.0087 \pm 0.067$ mg/ml). The ferrous reducing antioxidant power of *C. minima* was 14.24 ± 5.47 mg Trolox equivalence (TE)/1 g of sample. According to the results, sulfated polysaccharide from *Chnoospora minima* showed high antioxidant thus the extract can be considered as a potential source of natural antioxidants agents.

Keywords: *Chnoospora minima*, Sulfated Polysaccharide, Antioxidant potential

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