

Evaluation of antioxidative activity of phenolics in methanolic extracts of blue green algae

ABSTRACT

A phenolic rich extract has been isolated from the algae species, *Arthrospira platensis*. The objectives of this study were to determine the total amount of phenolics extracted from blue green alga and to evaluate the antioxidative activity of phenolic extracts in different concentrations of methanolic solvent using free radical scavenging assay. This study began with extraction of the *Arthrospira* with liquid nitrogen into powder after filtration and overnight drying in the oven. This is followed by determination of total phenolics in different concentrations of methanolic solvent and studied for free radical scavenging activity using 2, 2-diphenyl-picrylhydrazyl assay. The concentrations of total phenolics determined by the folin-ciocalteu method was found to be 252.72 mg.l⁻¹ gallic acid equivalent in aqueous extracts which showed that phenolic compounds can dissolve more in water medium. The 100% methanolic extracts showed significantly higher antioxidative activities in all assays while in different concentrations of 100% methanolic extracts, the concentration of 120 mg.l⁻¹ showed the highest free radical scavenging activity. This study showed that blue-green algae is rich in phenolic compounds, which are natural antioxidants and may help reduce the problem of climate change by absorption of CO₂ from the atmosphere.

Keyword: Antioxidant; Antioxidative activity; Free radical; Phenolic; Algae; *Arthrospira platensis*