ABSTRACT

Green seaweeds are considered as a valuable source of bioactive compounds because they are able to contain wide variety of secondary metabolites which are characterized by a broad spectrum of biological activities. *Ulva fasciata*, is an edible green alga which is rich in protein and carbohydrates in its cell-wall. Polysaccharides are used as a natural polymer in various applications, including as thickening or gelling agents in food manufacturing and pharmaceutical production. The alga contain blade like structures. Darker rhizoids are present due to which it is attached to substrate and has parietal chloroplast. *Ulva fasciata* was collected in bulk quantity from the Ayub ghot, Karachi coastal area, Pakistan. Three organic extracts prepared with different solvents (methanol, *n*-hexane and chloroform) and aqueous extract of seaweed, *Ulva fasciata* belonging to phylum chlorophycota was studied for antioxidant activity by different methods (TPC, FRAP, DPPH, MC and TAA) and phycochemical evaluation by GC-MS analysis. GC-MS analysis was done by Folch method. The present study reveals that methanolic extract of *Ulva fasciata* showed significantly high antioxidant potential as compared to *n*-hexane and chloroform. and the results of GC-MS analysis revealed the presence of fatty acids, hydrocarbons along with various types of chemical compounds in *Ulva fasciata.* Diethyl phthalate is present in high percentage pea area 33.06%. Qualitative phycochemical analysis revealed the presence of carbohydrates, proteins, reducing sugars, saponins, terpenoids, alkaloids and terpenes. The crude extract of *Ulva fasciata* manifest desirable antioxidant activity, hence in the future, it would be good if it is further taken for treatment of human diseases.