

Crude proteins, total soluble proteins, total phenolic contents and SDS-PAGE profile of fifteen varieties of seaweed from Semporna, Sabah, Malaysia

Abstract

It is crucial to determine several protein-related parameters at the initial stages of proteomic analysis of any biological samples. In this study, crude protein content, total soluble protein, total phenolic content and the SDS-PAGE profile of fifteen varieties of seaweed from Semporna, Sabah, Malaysia were analysed. The crude protein, total soluble protein and total phenolic content of all seaweed samples were in the range of 3.99 to 13.18 % of dry weight, 0.52 to 1.45 mg/mL in acetone dried powder samples and 8.59 to 48.98 mg PGE/g dry weight, respectively. In general, the differences (crude protein, total soluble protein and total phenolic content) among all fifteen varieties of seaweeds were significant ($p < 0.05$). There was also a strong positive correlation between crude protein and total soluble protein concentration (Pearson's Correlation Coefficient (r)=0.923; $p=0.01$) in these fifteen varieties of seaweed. A distinctive protein pattern was observed in the SDS-PAGE gels between three different seaweed classes of green, red and brown colours. All of these results are important in sample preparations (extractions) before furthering proteomic analysis in order to identify and characterize seaweed proteomes.