Qualitative and quantitative screening of biochemical compositions for six selected marine macroalgae from Mediterranean coast of Egypt

Chemical composition of the six selected macroalgal species (Colpomenia sinuosa, Padina pavonia, Sargassum linifolium, Pterocladiella capillacea, Caulerpa racemosa, and Laurencia pinnatifidia) obtained from Alexandria coast of Egypt were investigated for proteins, carbohydrates, lipids, vitamins, chlorophylls, total carotenoids, and total phenols. In addition, lipid-soluble, and water-soluble antioxidant, and anti-α-glucosidase activities were measured for these six macroalgal species. The ash contents varied from 11.2 to 35.4 % on a dry weight basis for P. capillacea and Laurencia pinnatifidia, respectively. The protein contents ranged from 5.63 % in brown macroalgae C. sinuosa to 8.73 % in P. pavonia. A relatively wide range in carbohydrate contents was observed (20.06 – 46.75 %) for the test algal species. The highest lipid percentage was found in green alga C. racemosa (5.91%) followed by brown algae P. pavonia (3.57%) and C. sinuosa (2.64%). The phenolic contents varied from 1.32 mg GAE/g for C. sinuosa to 4.00 mg GAE/g in P. pavonia. The lipid-soluble compounds exhibited higher antioxidant capacity (73.18 - 145.95 µM/g) than that of the water-soluble ones ranging from 24.83 µM/g in C. racemosa to 74.07 µM/g in S. linifolium. The most potent anti-α-glucosidase activity was observed for P. pavonia with IC50 of 17.12 µg/ml.

Biography
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