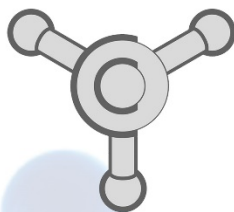


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Antioxidant potential of R-phycoerythrin, red protein isolated from macroalga *Porphyra* spp.

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Algae have been consumed as food and medicine for centuries. Their benefits are so pronounced, due to high concentrations of vitamins, minerals, antioxidants and proteins, that they are commonly referred to as superfoods. R-phycoerythrin (R-PE) is a red protein-pigment complex from the light-harvesting phycobiliprotein family, present in large quantities in red algae. It contains covalently bound open chain tetrapyrrole pigments: red phycoerythrobilin and yellow-orange phycourobilin. This study aims to evaluate the antioxidant potential of R-PE from commercially available red alga *Porphyra* spp. ("nori"). Two other phycobiliproteins (with dark blue phycocyanobilin pigment): R-phycocyanin (also isolated from *Porphyra* spp.) and C-phycocyanin (from Hawaiian *Spirulina Pacifica*), were used for comparison purposes. Purified phycobiliproteins were evaluated for antioxidant and metal ion chelating activity by various *in vitro* antioxidant assay systems: DPPH-, ABTS-, hydroxyl radical-, and superoxide anion radical-scavenging activity, ferric ion reducing ability of plasma (FRAP) assay, ferrous ion-chelating activity (FICA), and reducing power (RP) assay. The results showed R-PE exhibit concentration-dependent antioxidant potential similar to, if not better than that found in phycocyanins, confirming the exceptional value of R-PE as a nutraceutical (dietary supplement, functional food and pharmaceutical).