

Antioxidant phenolic compounds in four edible seaweeds

Solange I. Mussatto, Silvia Martins, José A. Teixeira

IBB-Institute for Biotechnology and Bioengineering, Centre of Biological Engineering, Universidade do Minho, Campus de Gualtar, 4710-057, Braga, Portugal

In the last few years, great attention has been paid to the antioxidant phenolic compounds, since they are bioactive compounds with ability to promote several benefits for human health, such as the reduction in the incidence of degenerative diseases like cancer and diabetes, reduction in risk factors of cardiovascular diseases, antioxidant, anti-mutagenic, antiallergenic, anti-inflammatory, and anti-microbial effects, among others [1]. Marine flora and fauna are reported to have a wide number of interesting biological properties, which allow their use in several medical applications. Seaweeds, in particular, are reported to be rich in polysaccharides, minerals, proteins and vitamins. However, the antioxidant activity of these marine species has been few documented. The present study aimed to determine the antioxidant activity and total phenolic content in four of the most common edible seaweeds, namely Sweet Kombu (Laminaria saccharina), Nori (Porphyra umbilicalis), Dulse (Palmaria palmata), and Sea Spaghetti (Himanthalia elongata). The antioxidant activity determined by different methods revealed Sea Spaghetti as being the specie with the highest antioxidant potential. These results are of interest since antioxidant compounds are beneficial for the human health, and antioxidant compounds obtained from natural sources are preferred for consumption than synthetic antioxidants. The presence of antioxidant phenolic compounds in the edible seaweeds could also elevate their value in the human diet as food and pharmaceutical supplements [2].

References:

- [1] Martins S, Mussatto SI, Martínez-Avila G, Montañez-Saenz J, Aguilar CN, Teixeira JA, "Bioactive phenolic compounds: Production and extraction by solid-state fermentation. A review" Biotechnol *Adv* (2011) 29: 365-373.
- [2] Kumar KS, Ganesan K, Subba Rao PV, "Antioxidant potential of solvent extracts of *Kappaphycus alvarezii* (Doty) Doty An edible seaweed" Food Chem (2008) 107: 289-295