

Novel antioxidants from Icelandic seaweeds



Using natural antioxidants from marine source is an innovative alternative to enhance oxidative stability, flavor quality and nutritional value of food products, as well as for utilization in functional foods or nutritional supplements.

Wholesome seaweed

Natural antioxidants can be used to increase oxidative stability, flavor and nutritional value of food and can also be used as nutritional supplements to improve human health. Seaweeds, as a source of functional compounds with potential health benefits, are gaining worldwide interest as results have shown that seaweeds are a rich source of various natural antioxidants such as polyphenols, which play an important role in preventing oxidation in foods and oxidative stress in humans.

Screening of antioxidant activity in Icelandic seaweed

The aim of the project *Novel antioxidants from Icelandic marine sources* is to screen for antioxidant activity in Icelandic seaweed to be used as food additives, functional ingredients or nutritional supplements. In spring 2007 different seaweed species were collected in Hvassahraun, total amount of polyphenols determined and antioxidant activity tested using three different antioxidant assays. Ten seaweed species were collected, including

seven brown algae (*Fucus vesiculosus*, *Laminaria digitata*, *Alaria esculenta*, *Fucus serratus*, *Saccharina latissima*, *Laminaria hyperborea*, and *Ascophyllum nodosum*), two red algae (*Palmaria palmata* and *Chondrus crispus*), and one green algae (*Ulva lactuca*).

Seaweeds contain polyphenols with bioactivity, including antioxidative activity. Our results have shown that brown algae generally contained higher amounts of polyphenols than red and green algae, especially *F. Vesiculosus*, *F. Serratus*, and *A. nodosum*. A high correlation was observed between the content of polyphenol and antioxidant activity of the seaweed species. Work on ACE (angiotensin-converting enzyme) inhibitory activity indicated potential anti-hypertensive properties of *Fucus vesiculosus*. Next steps are purification of the seaweed polyphenols and characterization of their antioxidant properties for further usage in complex food systems.

Usage

Using natural antioxidants from marine source is an innovative alternative to enhance oxidative stability, flavor quality and nutritional value of food products, as well as for utilization in functional foods or nutritional supplements. The market for antioxidants is big and the demand for natural antioxidants is increasing. The opportunity for niche products like Icelandic seaweed extracts and purified polyphenols from seaweed with beneficial health effects is therefore great.

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