Seaweed as a rich new source of heart-healthy food ingredients

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In an article that may bring smiles to the faces of vegetarians who consume no dairy products and vegans, who consume no animal-based foods, scientists have identified seaweed as a rich new potential source of heart-healthy food ingredients. Seaweed and other "macroalgae" could rival milk products as sources of these so-called "bioactive peptides," they conclude in an article in ACS's *Journal of Agricultural and Food Chemistry*.

Maria Hayes and colleagues Ciarán Fitzgerald, Eimear Gallagher and Deniz Tasdemir note increased interest in using bioactive peptides, now obtained mainly from milk products, as ingredients in so-called functional foods. Those foods not only provide nutrition, but have a medicine-like effect in treating or preventing certain diseases. Seaweeds are a rich but neglected alternative source, they state, noting that people in East Asian and other cultures have eaten seaweed for centuries: Nori in Japan, dulse in coastal Europe, and limu palahalaha in native Hawaiian cuisine.

Their review of almost 100 scientific studies concluded that that some seaweed proteins work just like the bioactive peptides in milk products to reduce blood pressure almost like the popular ACE inhibitor drugs. "The variety of macroalga species and the environments in which they are found and their ease of cultivation make macroalgae a relatively untapped source of new bioactive compounds, and more efforts are needed to fully exploit their potential for use and delivery to consumers in food products," Hayes and her colleagues conclude.

More information: "Heart Health Peptides from Macroalgae and Their Potential Use in Functional Foods" *J. Agric. Food Chem.*, 2011, 59 (13), pp 6829–6836 DOI: 10.1021/jf201114d

Abstract

Macroalgae have for centuries been consumed whole among the East Asian populations of China, Korea, and Japan. Due to the environment in which they grow, macroalgae produce unique and interesting biologically active compounds. Protein can account for up to 47% of the dry weight of macroalgae depending on species and time of cultivation and harvest. Peptides derived from marcoalgae are proven to have hypotensive effects in the human circulatory system. Hypertension is one of the major, yet controllable, risk factors in cardiovascular disease (CVD). CVD is the main cause of death in Europe, accounting for over 4.3 million deaths each year. In the United States it affects one in three individuals. Hypotensive peptides derived from marine and other sources have already been incorporated into functional foods such as beverages and soups. The purpose of this review is to highlight the potential of heart health peptides from macroalgae and to discuss the feasibility of expanding the variety of foods these peptides may be used in.

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