

Proving health benefits of a new class of compounds extracted from seaweed faces regulatory hurdles

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Seaweeds are a traditional accompaniment to many Asian dishes. They have also become increasingly popular across the world as an exotic delicacy. And not only do they taste wonderful, but they are also attributed a range of anti-inflammatory and antioxidant characteristics. These could be beneficial for health prevention applications ranging from anti-obesity to cancer protection. The problem is that until now very little of their activity has exactly been proven.

The EU funded [SWAFAX](#) project aims to fill that gap for these marine plant that can be used as food, for their health benefits. The chemicals in seaweed that attract scientists are polyphenols, which are a large class of more than 4,000 so-called phenolic compounds typically found in vegetables and fruit. Polyphenols are thought to bring health benefits by their antioxidant activity, which counters the ill-effects of [oxygen metabolism](#) in cells such as damage to DNA.

Not only are polyphenols unique, but they are also found in high concentrations in certain brown seaweeds, such as *Ascophyllum nodosum*. This variety contains 14% dry weight polyphenols, compared to 2-3% in [terrestrial plants](#). This high concentration along with ease to culture, harvest and process could, according to project leader Ian Rowland, a professor of human nutrition at the University of Reading, UK, make them attractive as a cheaper source of for nutritional supplements.

Experts in the field believe that polyphenols from seaweeds have been under-researched. "There are many indicative studies out there," notes Garry Duthie, a professor of nutritional science at the University of Aberdeen, UK, who heads the natural products group at the Rowett Institute of Nutrition and Health. "But I am not aware that any polyphenol from seaweed or otherwise has a proven health benefit in nutritionally relevant amounts."

By contrast, polyphenols from [land plants](#) are already widely used as functional food ingredients and [food supplements](#). "Seaweeds also contain similar compounds to land plants," Rowland tells youris.com, adding: "but [a kind of [polyphenols](#) called] phlorotannins are unique to certain seaweeds." The activity and bioavailability of these phlorotannins are the focus of the project. They could open the door to a greater exploitation of such marine resources down the line.

As with many food nutrients, however, it's unclear whether the activity found in vitro translates into useful activity in the body. To date, a 24-person clinical trial to test bioavailability has been completed at the University of Reading, UK. A larger study with 80 participants is also under way thanks to project partners based at the Northern Ireland Centre for Food and Health (NICHE) at the University of Ulster, Coleraine, UK. It is designed to measure the antioxidant and anti-inflammatory activity of these phlorotannins.

Proving benefits for health could take a long time before anyone could benefit from them. In particular, they could require drawing comparison in terms of activity level with well documented active compounds. For example, cocoa and apples are high in another type of phenolic compounds called flavanols that, according to Richard Hurrell, professor emeritus at of the Institute of Food, Nutrition and Health at the Swiss Federal Institute of Technology, Zurich, have proven physiological effects in humans, which lead to [health benefits](#). He believes they could thus provide a good comparator. "We should compare the levels in these foods to those found in seaweeds."

Provided by Youris.com

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