

Seaweed for Weight & Blood Sugar Management: Scientific Review Paper

Seaweed is well recognised to contain a range of compounds which have potential health benefits, and important bioactives that may be used as antiviral, antibiotics, anti-thrombic, anti-inflammatory and other natural enzyme-inhibiting agents.

But what is it about seaweed that makes it a specifically valuable food to help with weight and blood sugar management?

Read on to find out more on the research, and EU Health Claims around metabolism, decreased fat absorption, and control of weight.

Seaweed: traditional use to cutting-edge science

Seaweed has a traditional use as a natural whole food to help manage weight and blood sugar release. However, it is only fairly recently that the science has been understood and started to be demonstrated in formats that are workable, commercially viable and appealing to consumers.

Seaweed & Co.'s range of PureSea® seaweed ingredients have been studied by Newcastle University Medical School and Aelius Biotech using their world-leading human gut model system. This approach removes the need for animal experimentation and provides highly pertinent insight into how PureSea® can work in-vivo, and in multiple relevant product formats such as breads, capsules, beverages, and meats and fish.

Health claims approved in the EU around the natural and vegan iodine levels in PureSea® include supporting:

- **Energy Yielding Metabolism**
- Cognitive Function
- Growth in Children
- Healthy Skin
- Nervous System
- Production of Thyroid Hormones and Thyroid Function

and with pending claims around *Ascophyllum nodosum* including:

- **Decreases fat absorption**
- **Control of weight**

PureSea® for fat absorption

Extensive research on seaweed extracts - alginates (polysaccharides) - have demonstrated an impact on reducing fat absorption. The action is via the inhibition of lipase (the enzyme responsible for fat breakdown), which results in less absorption of fats, and more passing through the body, with resultant potential for weight loss.

Taking this insight to PureSea®, as a wholefood form of seaweed containing the polysaccharides as well as other compounds that have impact on weight management, similar impacts on fat digestion were observed. Figure 1 demonstrates how glycerol release in the human gut model is influenced by the presence of the commercially available drug Orlistat, alongside the PureSea®, and a substrate control (olive oil). Glycerol is one of the components produced when fats are broken down. Therefore, the lower the glycerol release, the less fat has been digested. As can be seen, there is a difference of a lower glycerol release between the substrate control (oil) and when PureSea® Natural seaweed is present of 33% at 120minutes, 38% at 150minute, and overall 28% lower at 180minutes. The 0.5g of PureSea® used is reflective of in-vivo requirements in terms of volume and activity in the human gut (Figure 1).

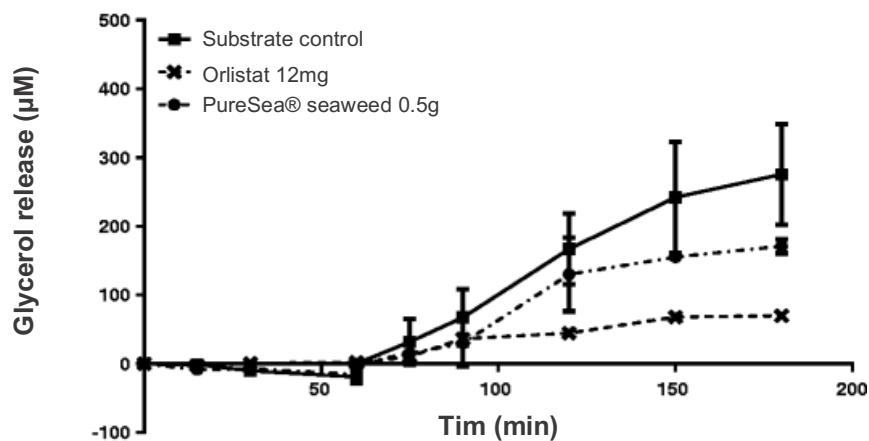


Figure 1 Glycerol release during digestion of fat in the human gut model using substrate control (olive oil), Orlistat drug, and wholefood PureSea® seaweed species

PureSea® for blood sugar management

In addition to fat absorption, the polyphenols in PureSea® have been demonstrated to inhibit alpha-glucosidase enzymes, which are responsible for the digestion of carbohydrates and release of glucose to the blood. In doing so, there can be a more sustained release of glucose and less spikes in blood sugar, and so more of a feeling of satiety

This is demonstrated in studies digesting bread as the control carbohydrate, compared to bread plus PureSea® Natural. The results show significant differences in glucose release over time during digestion (Figure 2).

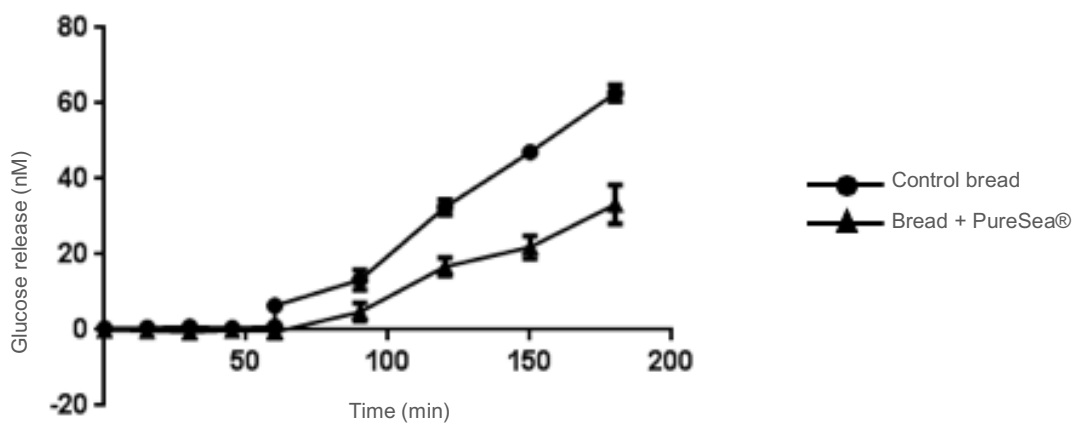


Figure 2: Glucose release from bread and bread + PureSea® Natural seaweed during digestion in human gut model

Furthermore, when comparing PureSea® Natural and PureSea® Protect (the micro-encapsulated version), PureSea® Protect offers enhanced polyphenol release during the small intestine phase of digestion. This is due to the protection during the gastric phase of polyphenols in the seaweed via the micro-encapsulated coating. This targeted release of key nutrients provides great opportunity for enhanced blood sugar and weight management.

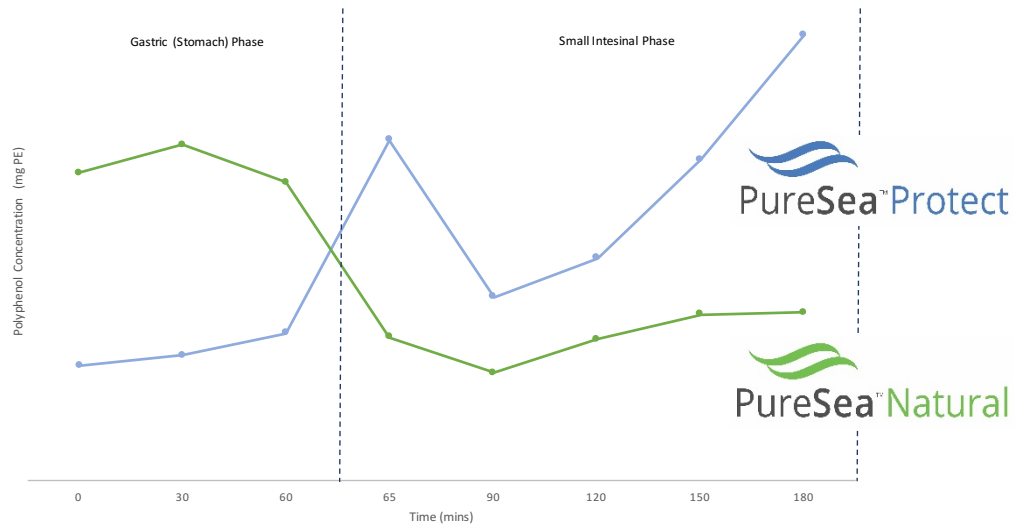


Figure 3: Polyphenol release during digestion comparing PureSea® Natural and PureSea® Protect

Why Choose PureSea® for Weight & Blood Sugar Management

Obesity and diabetes are global epidemics that need solutions workable for consumers lifestyle choices.

Seaweed provides a natural, vegan source of key compounds that have been shown to offer potential to satiety, fat absorption and blood sugar management. Furthermore, the PureSea® range offers ingredients applicable for use in any food, beverage or nutrition products, requiring as little as 0.5g inclusion. And, with proven research benefits, and pertinent EU approved and pending health claims around the natural iodine levels supporting metabolism, and fat absorption and control of weight.

PureSea® is sustainably harvested from the pristine Scottish Outer Hebridean islands, ensuring a safe, quality supply, with iodine measured every batch and standardised on the specification, and delivered in a range of powder formats that are easy-to-use. PureSea® Protect is specifically developed as a micro-encapsulated, white, odourless and highly dispersible powder. It can be used in any application without impacting on the finished product, and offers targeted nutrient release during digestion.

The full PureSea® range includes:



PureSea® Natural

Organic Hebridean Ascophyllum Seaweed



PureSea® Smoked

Naturally Oaked Smoked Organic Scottish Seaweed



PureSea® Protect

Micro-encapsulated Hebridean Seaweed

FOR ADDITIONAL INFORMATION ON PURESEA®



marketing@lehvoss.co.uk



www.seaweedandco.com



+44(0) 20 8343 5400

