PureSea® Protect



NATURAL HEALTH & WELLNESS

THROUGH SUSTAINABLE SEAWEED

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PureSea®

WHY PURESEA® PROTECT

PureSea® Protect is a unique, new and innovative ingredient for the ultimate delivery of the gold-standard seaweed - ensuring you have all the benefits, without the strong flavour or aroma of the sea.

ALL OF THE BENEFITS, WITHOUT THE FLAVOUR

After five years of intensive R&D, proprietary microencapsulation processes have been developed enabling PureSea® Protect to meet consumer trends - for healthy ingredients with purpose - offering nutritional benefits, approved health claims, and a genuine story of provenance and sustainability.

- Thyroid function
- Cognitive function
- Skin health
- Energy yielding metabolism
- Nervous system
- Development in children

Protect your flavours

The seaweed flavour & aroma are locked away by a coating of plant-based protein, protecting your finished products by ensuring minimal flavour impact of this neutral coloured powder.

Protect your nutrients

The protein coating ensures key nutrients are protected during processing and digestion, making them more available when needed.

APPLICATION CONCEPTS

With low inclusion rates, PureSea® Protect enables six EFSA Approved Health Claims, and offers a diverse range of benefits for multiple applications such as:

SPORTS NUTRITION

The ideal ingredient in protien and other powder blends with sweet flavours, adding a **health claim linked to energy and metablism.**

COLLAGEN & BEAUTY

Utilise this flavourless ingredient within collagen and beauty-from-within powder blends, enabling **health claims of skin health, and extensive evidence around improved hair and nails.**

GREEN BLENDS

With flavour and powder dispersion being key to consumer uptake, this is an easy-to-incorporate ingredient, providing **approved health claims from essential natural nutrition that is most often overlooked.**

FOODS

When you need the **story and nutrition of seaweed, but without flavour impacts**, PureSea Protect can be used across a vast range of food products.

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TARGETTED RELEASE

PureSea® Protect's unique coating ensures targetted release of key nutrients during digestion for optimal nutrition and benefits.

INDEPENDENT SCIENTIFIC STUDY

PureSea® Protect's targetted release

Title:

Determining the nutrient release profile of PureSea® Protect, microencapsulated seaweed, through the digestion process.

Researchers:

Dr Peter Chater (Aelius Biotech)

Background:

The coating developed for PureSea® Protect ensures a barrier for flavour and aroma as well as providing protecting during the gastric phase of digestion. This can result in a higher release of nutrients in the small intestinal phase for potential better absorption as compared to uncoated seaweed.

Method:

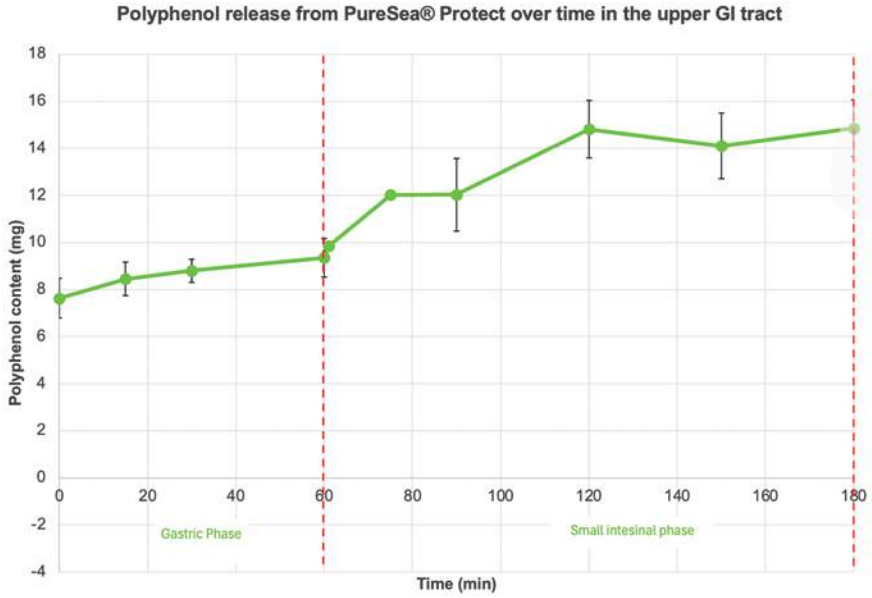
In vitro testing in a proprietary model gut system of polyphenol release as a marker of nutrient release over time.

Key findings:

The release of polyphenols increased significantly into the small intestinal phase of digestion as the coating of PureSea® Protect was digested post-gastric phase

Conclusion:

The distinctive coating of PureSea® Protect ensures a better protection of key nutrients through digestion, with lower release of marker nutrients in the gastric phase, where they are not as well absorbed or utilised, as compared to the increased release in the small intestinal phase, for potential better absorption.



Application:

An on-trend ingredient with approved claims that has limited impact on flavour or aroma, and with proven delayed release profile. Ideal for sports nutrition, beauty and multi-vitamin type powder blends.

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WHY PURESEA®

Natural health and wellness delivered through the gold-standard sustainable seaweed.



PureSea® is sourced from sustainable proprietary production in the pristine Scottish Outer Hebrides.



Safe, consistent & standardised source of essential nutrition. Every batch tested for safety, quality & nutrition.



Fully online transparent traceability system including unique DNA Authentication.



Independent analysis shows PureSea® is lower in heavy metals, and higher on measures of quality as compared to other sources of seaweed.

KLBD · EU/Non-EU Agriculture · Organic Food Federation · Vegan · DNA Authenticated Seaweed Source

PureSea® ensures customers have the confidence of using the gold-standard seaweed ingredient, and can access brand benefits including:

PureSea® BRAND BENEFITS

SCIENCE & RESEARCH

Access to PureSea® scientific research and support from the experts on the applications and benefits of PureSea® to address health, flavour and nutrition

PROVENANCE

The unique and sustainable story of where PureSea® is from in the pristine and stunning Scottish Outer Hebrides.

TRACEABILITY

Access to online traceability by batch linking to sites of harvest, technical documentation, photography and even down to the name of the harvester.

PROMOTION

Promotion and partnership of brand affiliated products where needed through the PureSea® network.

BRAND ASSOCIATION

Authorised use of the PureSea® trademark on pack and in marketing literature.

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SEAWEED **SELLS**

The trends and why consumers are looking for it.



Consumer interest in seaweed has almost doubled over the last 5 years!

> About to start a love affair with seaweed!
>
> **Jamie Oliver**

> The superfood of the year!
>
> **this morning**

> Tastes fantastic!
>
> **THE GREAT BRITISH BAKE OFF**

> An essential iodine source.
>
> **BBC**

The health halo of seaweed is recognised by mainstream TV shows and top celebrity doctors, nutritionists and chefs

Consumers expect seaweed-based food to be healthy and sustainable.

HEALTHINESS	77%

Consumers gave seawed an average rating of 77/100 for healthiness.

SUSTAINABILITY	72%

Consumers gave seaweed an average rating of 72/100 for sustainability.

"Highly nutritious and fast gaining attention"
Sainsbury's
(3rd largest supermarket in the UK)

"Customers crave seaweed"
Waitrose
(Waitrose, ABC1 demographic supermarket)

Seaweed-based food products taste better than seaweed alone.

Seaweed as an ingredient is ideally suited for nutritional supplements, blends, beverage and functional foods.

PureSea® seaweed ingredients deliver the natural innovation, proprietary formats and gold-standard quality for your brands to meet this rising consumer demand.

** UK consumer beliefs about seaweed, Swansea University research

Consumers know seaweed is good for them!

88% of consumers perceive seaweed to be good for them* yet the key barrier for purchasing and more mainstream uptake is format. Consumers are looking for familiarity, with an element of seaweed for health and nutrition benefits.

88%

* UK Government funded research

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THE NEED FOR **SEAWEED**

Addressing clear market needs and nutritional deficiencies

Naturally rich in iodine, PureSea® seaweed can address the huge and growing global iodine deficiencies.

5 BILLION

Affected globally by iodine deficiency (68% of global population)*



Europe is an Iodine deficient continent+

49%

increase in plant-based diets in Europe^

Seaweed provides vital plant-based nutrition – it is the *only* natural, plant-based source of essential iodine.





PureSea® offers essential nutrition from the sea™.



Current government health advice is not suitable for increasingly plant-based diets. Even those reducing fish and dairy intake are at increased risk of iodine deficiency.

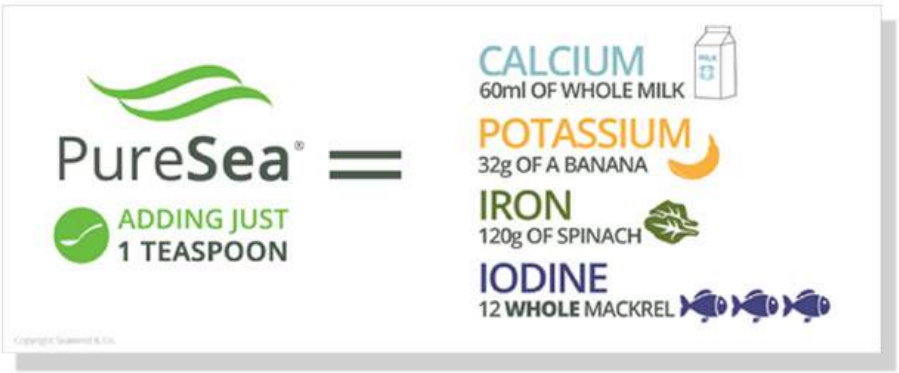
Consumers know that fish is good for them, and with government healthy eating guidelines recommending eating fish every week, there is an awareness that the nutritional benefits of seafood need to be found elsewhere. PureSea® seaweed is the answer.

* Passarelli et. al. (2024) Global estimation of dietary micronutrient inadequacies: a modelling analysis. The Lancet. Vol 12.
+EUthyroid Consortium's Krakow Declaration on Iodine in 2018. Referenced in the Iodine Global Network Annual Report 2020
^Plant-based foods in Europe: How big is the market? The Smart Protein Plant-Based Food Sector Report.

PureSea®

HEALTH **BENEFITS**

PureSea® enables your products and brand to make approved claims and offers other health benefits.



Seaweed is a powerhouse of natural nutrition, containing trace elements, minerals and bioactive compounds.
Just a small inclusion can boost the nutritional content of products.

PureSea® naturally innovative seaweed ingredients are based on proprietary production & processing resulting in the gold-standard of seaweed with numerous health and nutrition benefits. PureSea® absorbs safe levels of iodine from the pristine waters in which it grows - making it a naturally rich and consistent source of this essential nutrient. For this reason, PureSea® provides a number of approved health claims:

- METABOLISM
- DEVELOPMENT IN CHILDREN
- COGNITIVE HEALTH
- THYROID HEALTH
- HEALTHY SKIN
- NERVOUS SYSTEM

Scientific review papers for each of PureSea®'s health claims and benefits are available for download
www.seaweedandco.com/puresea-science



PureSea®

HEALTH **CLAIMS**

PureSea® enables your products and brand to make approved claims.

Energy & Metabolism

Iodine is essential in order for the body to produce thyroid hormones. These hormones play an essential role in metabolism - the rate at which cells work and use energy.

A diet with inadequate iodine intake can cause metabolism to slow down, which can result in symptoms such as weight gain and tiredness.

30% RDA dose:
100mg PureSea®

Approved health claim:

- Supports a normal energy yielding metabolism

Thyroid Health

The thyroid produces the hormones T3 and T4 – the number in the name of the hormone relates to the amount of iodine atoms. A lack of iodine in the diet can result in hypothyroidism.

Hypothyroidism can present with a number of unwanted symptoms including weight gain, tiredness, brittle hair and nails and dry skin.

30% RDA dose:
100mg PureSea®

Approved health claim:

- Supports normal thyroid health & function

Cognitive Function

Iodine deficiency is the most prevalent and preventable cause of mental impairment in the world [1].

Iodine deficiency can result in impaired cognitive and motor development which can affect performance at school and productivity throughout life. Studies show iodine deficient people may forfeit 15 IQ points [2]

30% RDA dose:
100mg PureSea®

Approved health claim:

- Supports normal cognitive function

Healthy Child Development

Iodine is a key nutrient in foetal development. Deficiency during pregnancy can result in impaired brain development of the foetus, low birth weight and prematurity.

The brain still needs iodine for development during the first two years of life, and then through the rest of childhood and later life.

Iodine deficiency in children is responsible for disorders in physical and cognitive development, and hypothyroidism [4].

30% RDA dose:
100mg PureSea®

Approved health claim:

- Supports normal growth of children

Beauty from Within

Seaweed for food and nutritional supplements has benefits nutritionally for beauty-from-within.

A common symptom of hypothyroidism caused by iodine deficiency is 'dry, flaky skin and brittle hair and nails.

63% of people with hypothyroidism report experiencing dry skin as a symptom [3].

30% RDA dose:
100mg PureSea®

Approved health claim:

- Supports normal maintenance of skin

[1] Combet, E., Bouga, M.,Pan, B., Lean, M.E.J. and Christopher, C.O. (2015) 'Iodine and pregnancy – a UK cross-sectional survey of dietary intake, knowledge and awareness', British Journal Of Nutrition, 114(1), pp. 108-117.
[2] https://www.who.int/news-room/q-a-detail/nutrition-effects-of-iodine-deficiency
[3] Carle, A., Pederson, I.B., Knudsen, N., Perrild, H., Oveson, L. and Laurberg, P. (2014) 'Hypothyroid symptoms and the likelihood of overt thyroid failure: a population-based case-control study' European Journal of Endocrinology, 171(5), pp. 593-602
[4] https://www.who.int/news-room/q-a-detail/nutrition-effects-of-iodine-deficiency