



## Health Benefits of Nutraceuticals Derived from Marine Sources

Nicolas Papon\*

*Department of Marine Biology, University of Angers, Angers, France*

### DESCRIPTION

Marine environments are abundant sources of unique organisms that have adapted to survive in challenging conditions. Within these organisms, different types of bioactive compounds can be found, many of which possess significant health benefits. Marine nutraceuticals, derived from marine sources, have gained attention for their potential therapeutic properties and their role in promoting human health. Health Benefits of Nutraceuticals encompass a wide range of bioactive compounds, including omega-3 fatty acids, peptides, polysaccharides, antioxidants, and minerals, among others. These compounds have been shown to provide various health benefits. For instance, omega-3 fatty acids derived from marine sources, such as fish and algae, are known for their anti-inflammatory properties, cardiovascular benefits, and potential cognitive and mental health advantages. Marine peptides have exhibited antimicrobial, antioxidant, and anticancer activities, making them promising candidates for therapeutic interventions. Additionally, marine-derived polysaccharides have demonstrated immune-modulating, antiviral, and wound-healing properties.

These nutraceuticals hold significant potential for biomedical applications, offering new preventive medicine and therapeutic interventions. The biomedical perspectives of marine nutraceuticals extend to various health conditions. Omega-3 fatty acids found in marine sources have been extensively studied for their cardioprotective effects. These fatty acids have shown the potential to lower blood pressure, reduce triglyceride levels, and improve lipid profiles. Incorporating marine nutraceuticals rich in omega-3 fatty acids into the diet may contribute to reducing the risk of cardiovascular diseases, such as heart disease and stroke. They have been associated with brain development, cognitive function, and neurological health. These compounds may help to improve memory, enhance cognitive performance, and potentially reduce the risk of neurodegenerative diseases, such as Alzheimer's disease.

Several marine nutraceuticals have demonstrated promising anticancer properties. Marine peptides have exhibited selective cytotoxicity towards cancer cells. Compounds derived from

marine organisms, such as seaweeds and marine sponges, have also shown potential as sources of novel anticancer agents. These discoveries open new ways for the development of marine-derived therapies for various types of cancer. They possess anti-inflammatory and immune-modulating properties. Marine polysaccharides and bioactive peptides have shown the ability to reduce inflammation and modulate immune responses. These properties have implications for the prevention and management of inflammatory diseases, including rheumatoid arthritis, inflammatory bowel disease, and allergic conditions.

Marine-derived compounds, such as collagen peptides and bioactive polysaccharides, have demonstrated potential in promoting dermal health and wound healing. These compounds possess moisturizing, anti-aging, and wound-healing properties. The collagen peptides have shown effectiveness in enhancing skin elasticity, reducing wrinkles, and accelerating wound healing processes. These nutraceuticals offer a wealth of health benefits and biomedical perspectives. With their diverse bioactive compounds, marine sources have the potential to revolutionize preventive medicine and therapeutic interventions. Further research and exploration of marine ecosystems are vital to uncovering the full potential of these compounds and to know about their health-promoting properties.

While marine nutraceuticals offer significant health benefits, it is important to be aware of potential side effects and consider individual circumstances. Some individuals may have allergies or sensitivities to certain marine-derived compounds, such as shellfish. It is important to identify any allergies or intolerances before consuming them. Marine environments can be exposed to pollutants, including heavy metals and toxins. It is essential to ensure that these nutraceuticals are sourced from reputable manufacturers who adhere to strict quality control measures to minimize the risk of contamination. Omega-3 fatty acids, particularly at high doses, can have blood-thinning effects.

Individuals taking blood-thinning medications or with bleeding disorders should consult with their healthcare provider before supplementing with marine nutraceuticals. Some individuals may experience gastrointestinal discomfort or digestive issues.

**Correspondence to:** Nicolas Papon, Department of Marine Biology, University of Angers, Angers, France, E-mail: nicolas@univ-angers.fr

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When consuming marine nutraceuticals, particularly if they have a sensitivity to certain types of marine compounds or if the supplements are not well-tolerated by their digestive system. Marine nutraceuticals, particularly omega-3 fatty acids, can

interact with certain medications, such as anticoagulants, antiplatelet drugs, and some cholesterol-lowering medications. It is important to consult with a healthcare professional before starting any marine nutraceutical supplementation.