



## **Aquatics bio-products and their roles in immunity**

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### **Abstract:**

Enzymatic hydrolysis tests of some marine peptides showed they have immunogenic, anti-inflammatory, antioxidant and microbial control attributes. Peptides and oligo-peptides biological activities of some species such as oysters, fish, marine bacteria, algae, Crustaceans and Echinodermata confirmed the Immunity induction in consumer's laboratory studies showed. Additionally, the consumers showed many changes containing increased activity of lysosomes, immunoglobulin levels in serum, increased weight of thymus and spleen tissues, increased level of phagocytosis, increased lymphocyte count, inhibition of cancer cell growth factors, increased immune cell activity such as NK and T Helper cells, CD4 as well as an increase inhibitor pre-inflammatory and inflammatory cytokines such as TNF $\alpha$ , interleukin  $\beta$ , IL-6, genes expression of anti-inflammatory chemokine such as IL-10. Complementary paths activating and immune cell modulation increasing, are another activities that can be attributed by Saponin in Sea cucumbers, Fluoridoside and Beta-carotene of Algae. Also, glycosides derived from some seaweed and sea cucumbers have antiviral effects. Their flavonoids have antioxidant effects, their fatty acids like EPA and DHA are anti-inflammatory mediators. The potential of marine organisms and their by-products can make these organisms as a bio-polymer with the least toxicity, so we can introduce these aquatics to produce new antibiotics, antivirals and booster immunity drugs.

**Keywords:** aquatics, immunity, anti-inflammatory, antioxidant, antibiotics