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Potential application of seafood-derived peptides as bifunctional ingredients, antioxidant–cryoprotectant: A review

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ABSTRACT

Seafoods have served as a significant source of lipids and proteins for human requirements. However, they are prone to chemical deterioration, especially oxidation and quality loss during storage and processing, associated with the development of off-odours/flavours and loss of nutritive value. Antioxidants have been used widely to prevent lipid oxidation, while cryoprotectants are known to retard protein denaturation of seafoods during the extended frozen storage. Due to possible toxicity and carcinogenic effects of synthetic antioxidants and sweetness of particular cryoprotectant, the natural and safe additives, derived from seafood origin have gained increasing attention. Peptides, mostly derived from processing by-products, have been demonstrated to exhibit antioxidative and cryoprotective effects in seafoods. This article revisits the antioxidative and cryoprotective effects of seafood-derived peptides for their potential as bifunctional ingredients to prevent lipid oxidation and protein denaturation in different seafood systems.

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