

# Current Insights into Bioactive Peptides in Fish: Potential Applications and Health Benefits

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## Abstract:

Bioactive peptides derived from fish have garnered significant attention due to their diverse physiological activities and potential applications in functional foods and therapeutics. These peptides are obtained through enzymatic hydrolysis of fish muscle and processing by-products, displaying strong antimicrobial and antioxidative properties.

Peptides extracted from fish by-products have demonstrated efficacy in preventing oxidative damage and enhancing food preservation, showcasing their applicability as natural food additives [1]. Notable findings include peptides such as F21, derived from *Gadidae* fish muscle, which demonstrates antioxidant activity with an IC<sub>50</sub> value of 389.9 µg/mL (DPPH) and strong angiotensin-converting enzyme (ACE) inhibitory properties [2]. Another peptide, an ACE inhibitor from skipjack-tuna, Ser-Pro (SP), effectively regulates blood pressure and shows bioactive potential in cardiovascular health [3].

This review focuses the progress in identifying, isolating, and characterizing bioactive peptides from fish, demonstrating their potential to improve health and support innovative solutions in the food and pharmaceutical industries.

[1]Najafian, L., et al. (2012). A review of fish-derived antioxidant and antimicrobial peptides: Their production, assessment, and applications. *Peptides*, 33, 178-185.

[2]Maky, M. et al. (2021). Generation and Characterization of Novel Bioactive Peptides from Fish and Beef Hydrolysates. *Applied Sciences*. ~

[3]Zheng, S., et al. (2022). Preparation, Identification, Molecular Docking Study and Protective Function on HUVECs of Novel ACE Inhibitory Peptides from Protein Hydrolysate of Skipjack-Tuna Muscle. *Marine Drugs*, 20.

**Keywords:** Peptides; Bioactive peptides, fish-derived peptides, enzymatic hydrolysis, antioxidant activity, ACE inhibitors, functional foods.

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