

Antibacterial activity of functional bioactive peptides derived from fish protein hydrolysate

ABSTRACT

By-product removal in fish processing is estimated to be between 25 and 70% due to improper fish production handling and significant problems in the fish industry today. Therefore, one of the ways to manage the raw material of by-product is through protein hydrolysis. However, one of the most effective methods for managing this raw material, which includes skin, bones, heads, and viscera, is to convert their protein into peptides via hydrolysis methods, resulting in fish protein hydrolysate (FPH). FPH has been shown to have bioactive properties such as antibacterial, antihypertensive, antioxidative, anticancer, and anticoagulant properties. Bioactivity could be fully utilised in the future in both the nutraceutical and food industries. Numerous studies have been published on the acceptability of FPH in obtaining bioactive properties from various fish, particularly antibacterial activity. For example, the antibacterial peptide was identified as FPIGMGHGSRPA, consisting of 12 amino acids. Its antibacterial activity was tested against *B. subtilis* using 800 g/mL ampicillin. The inhibition zone increased with peptide concentration. This review discusses functional bioactive peptides derived from fish protein hydrolysate that can be used as antibacterial agents by inhibit Gram-positive and Gramnegative bacterial growth. It also covers fish species, parts, and hydrolysis methods to maximise yields.