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Bioactivity and functionality of gelatin hydrolysates from the skin of oneknife unicornfish (*Naso thynnoides*)

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Skin gelatin of Oneknife unicorn fish (*Naso thynnoides*) was hydrolyzed using a crude protease from *Bacillus sp.* under optimum hydrolysis conditions. Resulting hydrolysates was subjected to centrifugal ultrafiltration to produce fractions of ≤ 10 KDa molecular weight. Antioxidant, antihypertensive and functional properties of the hydrolysate fraction were determined. Results showed that DPPH (a, a-diphenyl-b-picrylhydrazyl) scavenging activity (63%) and ferric reducing antioxidant power (25.90 Trolox Equivalent (mM/mg)) increased as protein concentration increased. Angiotensin converting enzyme-I (ACE-I) inhibitory activity is directly proportional to the protein concentration with highest value obtained at 33.97% and IC₅₀ determined to be 10.17 μ g/ml. Gel electrophoresis (SDS-PAGE) revealed that the gelatin hydrolysates contain mostly peptides with molecular weight ranging between 5KDa and 30KDa. Amino acid profile of the hydrolysates showed that it is rich in residues of glycine (Gly) (40.70%) and glutamic acid+glutamine (Glx) (25.40%). The hydrolysates were soluble over wide pH range (79.38-97.12%). Foaming properties increased while emulsion properties decreased as the gelatin hydrolysate concentration was increased. Results of the present study revealed that Oneknife unicornfish gelatin hydrolysates could be a potential food ingredient with antioxidant and antihypertensive properties.

Biography

Garner Algo L Alolod has recently obtained his Master of Science in Fisheries-Fish Processing Technology from the University of the Philippines Visayas, Miagao, Iloilo, Philippines. He is also graduated in the same university with the degree of Bachelor of Science in Fisheries in 2013.

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