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## Evaluating the bioactive potential and functional properties of eggshell membrane protein hydrolysates

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The aim of this study was to hydrolyze the eggshell membrane proteins using ultrasonic pretreatment followed by enzyme hydrolysis under optimum conditions. Gel electrophoresis (SDS-PAGE) results demonstrated small molecular weight bands ranging from 2 kDa to 25 kDa suggesting the presence of peptides in the sample and amino acid analysis of the hydrolysates revealed them to be rich in hydrophobic amino acids (23.34%). The resulting hydrolysates were then analyzed for their bioactive and functional properties. From the results obtained, it was observed that the protein hydrolysates generated demonstrated good solubility, foaming and emulsifying properties. Additionally, they were also found to exhibit remarkable bioactive properties such as reducing power (0.71), DPPH (2,2-diphenyl-1-picrylhydrazyl) radical scavenging activity (65.91%) and superoxide radical scavenging activity (87.43%) which were found to increase with the increasing protein concentration. The protein hydrolysates also demonstrated Angiotensin converting enzyme-I (ACE-I) inhibitory activity with a value of 45.65% and were also found effective in inhibiting certain foodborne pathogens. Results of this study indicated that the eggshell membrane protein hydrolysates have potential applications as functional and nutritional food ingredients.

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