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Isolation and characterization of an antibacterial Fe²⁺ chelate of hydrolysate by proteinase from *Trichiurus haumela* offal

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The objective of this study was to prepare, isolate and characterize Fe²⁺ chelate of hydrolysate by proteinase from *Trichiurus haumela* offal with antibacterial activity. The most active fraction Fe-FPH I-2 was isolated by chromatographic method (Sephadex G-25 and 75). Amino acid analysis and molecular weight were carried out using automatic amino acid analyzer and SDS-PAGE, respectively. Fe-FPH I-2 was rich in serine, leucine and histidine thus it was potential in anti-oxidation. The molecular weight of Fe-FPH I-2 was 26 kDa. Antibacterial experiment results revealed that Fe-FPH I-2 could inhibit all the tested microorganisms especially to *Escherichia coli*, *Ataphylococcus aureus* and *Bacillus megaterium* with MIC of 0.5%. In addition, results of Transmission Electron Microscopy (TEM) suggested that Fe-FPH I-2 caused the disruption of the cell via membrane damage. It was likely that the performance of competitive contending for Fe also played an important role in antibacterial mechanism. The results obtained in this study could provide some useful information in improving the value of little fish and offal appeared during the processing course and developing novel preservative to take the place of traditional chemical preservatives.

Biography

Jiancong Huo has completed his PhD from South West University of China, College of Food Science. He is now the Associate Professor of Food Science. He has published more than 10 papers in reputed journals.

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