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Effect of Squid Protein Hydrolysate on Freeze-Induced Denaturation of Lizardfish (*Saurida wanieso*) Myofibrillar Protein

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In order to utilize low-cost squid effectively as a functional material for food processing and preservation, squid protein hydrolysate (SPH) was prepared from 4 species of squid by protease treatment. Peptides are the major components (84–88%) of SPH. The protective effect of 5% SPH (dry weight/wet weight) on the freeze-induced denaturation of lizardfish *Saurida wanieso* myofibrillar protein (Mf) was evaluated on the basis of Mf Ca-ATPase activity and the amount of unfrozen water in Mf, which was determined by differential scanning calorimetry (DSC); the effect was compared with that of sodium glutamate. Mf with SPH showed markedly higher Ca-ATPase activity than did Mf without SPH (control) during frozen storage. Mf with SPH had a higher amount of unfrozen water than the control. These findings suggest that SPH stabilized water molecules in the hydration sphere of Mf and thus, suppressed freeze-induced denaturation of Mf. The effect by SPH was less than that by sodium glutamate.

Keywords: [squid protein hydrolysate](#), [fish myofibrillar protein](#), [unfrozen water](#), [Ca-ATPase](#), [frozen storage](#)

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