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Effect of Protein Hydrolysate from Antarctic Krill on the State of Water and Denaturation of Lizard Fish Myofibrils during Frozen Storage

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Protein hydrolysates were prepared from Antarctic krill and two types of shrimp by enzymatic treatment using protease. Hydrolysates prepared from the krill were added to lizard fish myofibrils, and changes in the amount of unfrozen water in myofibrils during freezing were analyzed by differential scanning calorimetry. Ca-ATPase activity of myofibrils was measured concurrently and the results were compared with those using hydrolysates from shrimp. The amount of unfrozen water increased after addition of the hydrolysates and decreased moderately during frozen storage. When hydrolysates were not added to myofibrils, the amount of water rapidly decreased during frozen storage. The decrease in ATPase activity during frozen storage followed that of unfrozen water, indicating a close correlation between ATPase activity and the amount of unfrozen water. These results suggest that the denaturation of myofibrils may be suppressed by the addition of hydrolysates, since the hydrolysates appeared to increase the amount of unfrozen water.

Keywords: [krill](#), [myofibrils](#), [ATPase](#), [hydrolysate](#), [freeze-denaturation](#), [unfrozen water](#), [frozen storage](#)



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