

The degradation of myosin in meat by boiling  
and the effect of salt on it

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Summary

Some changes in myofibrillar proteins, especially myosin, of meat during boiling were investigated by use of SDS polyacrylamide gel electrophoresis (SDS-PAGE) and western blot analysis using an antibody against myosin. Of the major bands of myofibrillar proteins, that of myosin heavy chain disappeared first from the SDS-PAGE patterns of the boiled meat. When the purified myofibrillar proteins in 0.15M KCl solution were heated at 100 C, the myosin heavy chain band disappeared from the SDS-PAGE patterns gradually with increasing heating time, and a 72,000-dalton band was observed after heating for 1 hour. In 0.6M KCl solution, the 72,000-dalton band appeared after heating for 30 minutes. When the purified myosin in 0.15M or 0.6M KCl was heated at 100 C, the western blot analysis based on the reaction with anti-myosin showed that myosin heavy chain was degraded into components ranging in molecular weight of 120,000-60,000 daltons. These degraded components of myosin heavy chain were also observed in western blots of the heated myofibril, the boiled meat and the soup stock.