Studies on n-Butanol Denaturation of Fish Muscle Proteins and Their Desalting-Aggregation

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The denaturation of black marlin, oval filefish, and tilapia actomyosins, myosins, and fragments by n-butanol, and their desalting aggregation were examined in connection with thermal gel-formation. The thermal gel-formation of myofibrillar pastes and myosin sols was greatly enhanced by the addition of 0.3～0.8M n-butanol. When the pastes were ultrasonicated, the effect of added n-butanol on the gel-strength was heightened (data not shown). During ultrasonication, a rapid desalting from the paste occurred (data not shown). KCl concentration-solubility curves revealed that after n-butanol addition a marked decrease in the solubility was observed for oval filefish actomyosin, myosins, and subfragment-1s (S-1s), whereas there was a slight decrease for rods. The fluorescence intensity of myosins-ANS in the presence of n-butanol increased markedly by heating at 30° and 35° C. A similar increase in the fluorescence intensity occurred in all S-1s-ANS, but not in rods.