

Effects of pH and Salt Concentration on the Heat-induced
Gelation and Increase in Viscosity of Food Protein Solution

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S u m m a r y

Effects of pH and salt concentration on the turbidity (transparency) and the gel properties of the β -lactoglobulin and milk whey protein were examined. Turbidity was measured using a 96 well-microplate and immunoreader. In this method many samples (>100 samples) with small quantity (c.a. 250 μ L) could be treated at a time. Without heating protein solution did not gel, but became turbid suspension at around the isoelectric point of β -lactoglobulin in the presence of salt. By heating turbidity increased and gel was formed. At low ionic strength and in neutral and alkaline pH region, the samples were transparent and gelled with a slight amount of NaCl from both β -lactoglobulin and whey protein. This means that transparent gel can be prepared by the regulation of salt concentration and pH when heated. Hardness, cohesiveness, and adhesiveness of the gel prepared under varying pH and salt concentration were measured.