

Chapter 4

Conclusion

For natural actomyosin

1. Trehalose and others cryoprotectants effectively retarded the denaturation of muscle proteins as indicated by retarding the decrease in Ca^{2+} ATPase activity and sulfhydryl content and by minimizing the formation of disulfide bonds content and the increase in surface hydrophobicity. Efficacy increased as cryoprotectant level increased.
2. Cryoprotectant formulae exhibiting the highest cryoprotective efficiency were 8%trehalose or the blend including 5.34%trehalose+1.33%sucrose+1.33% sorbitol.
3. The aggregation of NAM was caused by hydrogen bonds, hydrophobic bonds and disulfide bonds. The additive of cryoprotectant prevented the aggregation of NAM, which was associated with the decreased changes in physicochemical properties.

For surimi

1. The cryoprotectants (8%trehalose or the blend including 5.34%trehalose, 1.33%sucrose and 1.33%sorbitol) effectively stabilized proteins and maintained the gel-forming ability, when compared with commercial cryoprotectants (4%sucrose and 4%sorbitol) during 12 weeks of frozen storage and after repeated freeze-thawing.
2. Addition of 8%trehalose, non-sweet disaccharide, or the blend including 5.34%trehalose, 1.33%sucrose and 1.33%sorbitol could be used to substitute the commercial cryoprotectant (4%sucrose+4%sorbitol) as an alternative in surimi.