CHAPTER 4

CONCLUSIONS

1. Bigeye snapper pepsin (BSP) could be extracted and fractionated using 50 mM phosphate buffer, pH 7.2, and 0-20% saturation of ammonium sulfate, respectively. Optimal pH and temperature was 2.5 and 45°C, respectively. BSP was stable in the pH range of 1-6 and at temperatures up to 40°C.
2. Efficiency in collagen extraction from bigeye snapper skin could be enhanced by incorporating BSP at 20 kUnits/g defatted skin during 48 h extraction after acid pre-swelling process for 24 h. However, pepsin-solubilized collagens showed slightly lower molecular weight of α1 and α2 than did acid-solubilized collagen. Pepsin might alter collagen structure which governed the differences in thermal stability and solubility of resultant collagens, compared with acid-solubilized collagen.
3. Gelatin extraction from bigeye snapper skin could be improved by pepsin-aided process using BSP or porcine pepsin (PP) at a concentration of 15 kUnits/g alkaline-treated skin for 48 h at 4°C before extraction at pH 7.5 and 45°C for 12 h in the presence of 0.1 μM soybean trypsin inhibitor. The yield of resultant gelatins increased by 10% when compared with that of gelatin extracted using typical method. Gelatin extracted with different methods showed different characteristics and properties.

FUTURE WORKS

1. Appropriate desalination process of gelatin solution obtained from pepsin-aided process before drying should be investigated to gain the gelatin with lower salt content.
2. Endogenous protease from bigeye snapper skin and its inhibition should be well characterized in order to prevent the degradation of gelatin molecules.
3. Improvement of bloom strength of bigeye snapper skin gelatin using several cross-linkers should be further studied.
4. Based on its functional properties, the application of bigeye snapper skin gelatin in various food products should be investigated.