

CHAPTER 4

CONCLUSION

1. Protein hydrolysates from round scad mince using Flavourzyme with DHs of 20, 40 and 60% showed the higher DPPH radical scavenging activity and reducing power than those using Alcalase. Antioxidative activity increased proportionally with DH, which was associated with the size and sequence of amino acids in peptides.
2. Protein hydrolysates using Flavourzyme prepared from isopropanol-defatted round scad mince with DHs of 40 and 60% showed the increase in DPPH radical scavenging activity and reducing power in comparison with those prepared from round scad mince and ethanol-defatted mince.
3. Stepwise fractionations of protein hydrolysate using different solvents were able to concentrate antioxidative peptides. Peptide fractions derived from dichloromethane and ethyl acetate extraction exhibited the greater DPPH radical scavenging activity and reducing power. Nevertheless, HFIP 60 showed the highest metal chelating activity.
4. DPPH radical scavenging activity of protein hydrolysate was affected by some particular amino acids or peptides. HFIP 60 and its fraction were able to retard the lipid oxidation in a linoleic oxidation and a lecithin liposome system and exhibited antioxidant activity in a concentration dependent manner.
5. Freeze-dried round scad protein hydrolysate was brownish yellow in color, rich in protein, essential amino acids and mineral contents.
6. Freeze-dried round scad protein hydrolysate showed the high solubility and the interfacial properties. Emulsifying and foaming properties of freeze-dried round scad protein hydrolysate were governed by the concentration used.