Chapter 4

Conclusion

1. Phenoloxidase (PO) from black tiger prawn (*Penaeus monodon*) cephalothorax showed the highest activity at 45 ºC and pH 6.0.

2. MRPs, prepared by heating equimolar (0.75 mM) mixture of galactose and glycine at 100°C for 8 h, showed the highest browning intensity (A_{420}), colorless intermediate (A_{294}), reducing power and copper chelating property. However, the PO inhibitory activity was not different from MRPs from fructose/glycine model system.

3. MRPs, derived from fructose/glycine model system showed the increase in PO inhibitory activity when heating time increased. The greatest PO inhibitory activity, copper chelating property and reducing power of MRPs were observed with MRPs obtained from 12 h heating.

4. MRPs prepared from fructose/glycine model system showed the increased PO inhibitory activity when heating temperature increased up to 100°C.

5. The increase in PO inhibitory activity of MRPs was coincidental with the increase in the reducing power, intermediate formation as well as browning development. The effectiveness of MRPs on black tiger prawn PO inhibition was most likely due to their copper chelating property. The development of MRPs and the inhibitory activity towards PO was dependent upon the reactant concentrations.

6. MRPs prepared by heating equimolar fructose/glycine mixture at higher initial pH exhibited the higher PO inhibition. MRPs with initial pH of 11 had the greatest PO inhibitory activity.

7. Decolorization either by activated carbon or Sep-Pak Cartridge C18 could reduce the b*-value and browning intensity. However, reducing power, copper chelating property and PO inhibitory activity were also reduced.

8. MRPs derived from equimolar (30 mM) fructose/glycine mixture heated at 100°C for 12 h, at pH 11 retarded the melanosis in black tiger prawn during 10 days of iced storage. The treated samples were acceptable by sensory evaluation within 10 days.