CHAPTER VI

CONCLUSION

Antiviral activities of extracts were carried out in Vero cells infected with HSV-1 and HSV-2. In order to elucidate the mode of action of the inhibition of virus replication, the effects of the extract were studied under various conditions in inactivation, prophylactic activity and plaque reduction or post-treatment assay. The most active extract were hexane extracts (F4) from *G. pentaphylla* and *W. edulis* and methanol (F3) extract from *I. maxima* which exerted their antiviral activities on HSV-1 and HSV-2 in various extent. In virus inactivation experiment, the extracts exhibited the highest antiviral activity against HSV-1 and HSV-2. These results indicated that antiviral effects of extracts on HSV-1and HSV-2 might be attributed at least in part to its direct inactivation of virus particles. HSV-1 strain KOS tend to be more sensitive to inhibitors than HSV-2 strain Baylor 186. These three extracts also exhibited antiviral activity against HSV-1 and HSV-2 in plaque reductuion assay and prophylactic activity assay at higher concentration than that of in inactivation assay. Attachment of HSV-1 and HSV-2 to host cells were concentration dependently(r=0.95-0.99) affected by extracts and penetration were concentration dependently(r=0.88-0.97) and time dependently(r=0.92-0.99) inhibited by extracts. In virus yield inhibition assay, the magnitude of inhibition was also concentration dependent(r=0.81-0.97) and incubation-time dependent(r=0.87-0.99) for all three medicinal plants. It was found that ,the extracts of F4/*G. pentaphylla*, F3/*I. maxima* and F4/*W. edulis* were the inhibitors of HSV-1 and HSV-2 replication at concentrations that have no effect on the growth of host cells. The selective index of these three plant extracts, F4/*G. pentaphylla* F3 /*I. maxima* and F4/ *W. edulis* against HSV-1 (HSV-2) were 80.93 (95.17), 15.46 (13.97) and 71.36 (56.91) µg/ml, respectively, in inactivation assay.

In conclusion, the extracts showed distinct efficacy in the inactivation of herpes simplex viruses. Further purification of the extracts will permit the isolation of the active compound and decrease the level of its actual effective dose. Alternatively, the partial

crude extract of the active fraction of these three medicinal plants could be further studied and formulated for topical treatment for herpes simplex virus infection. These 3 medicinal plants will be the good candidates for the development of anti-herpes simplex virus drug.