CHAPTER VI

CONCLUSION

The pathogens of interest in this study included CMV, HSV-1, HSV-2, VZV and *T.gondii* and were investigated using reference singleplex real-time PCR. Singleplex real-time PCR for CMV, HSV-1 and VZV each had a sensitivity of detection of 30 copies. HSV-2 and *T.gondii* singleplex real-time PCR had sensitivities of detection of 300 copies and 3 copies, respectively. From our series, infectious uveitis caused by these pathogens was found in 40 % of the uveitis study population. CMV was the most common cause of infectious uveitis in Northern-Thai uveitis patients both with and without HIV infection.

We developed optimal duplex real-time PCR for detection of CMV/HSV-1 and CMV/VZV. The duplex real-time PCR showed comparable sensitivity and diagnostic efficiency compared to singleplex real-time PCR for each pathogen. The optimal multiplex real-time PCR had a similar sensitivity for CMV, HSV-2 and VZV detection at 30 copies while, the lowest concentration for HSV-1 detection was 300 copies. The diagnostic efficiency of multiplex real-time PCR was investigated for the known positive samples of CMV, HSV or VZV and resulted in 100 % true positive for CMV and VZV detection. However there was low diagnostic efficiency for HSV (36% true positive detection). Thus, multiplex real-time PCR could be used for CMV and VZV diagnosis. For identification of infectious uveitis using GWC together with real-time PCR, 23 positive were found and 10 of these positive results (10/23, 43%)

were diagnoses by GWC. Due to the cost of GWC analysis, the method can not be recommended as suitable for the routine diagnostic method for infectious uveitis identification.

Our findings provide an insight into the causative agents of infectious uveitis in Northern-Thai patients. CMV/VZV and CMV/HSV-1 duplex real-time PCR were established as effective, accurate and economically diagnostic methods for diagnosis of uveitis and other ocular infections.