## Conclusions

One of the objectives of this study was to compare and study the prevalence of IgA and IgG antibodies to HHV6B. From the age seroprevalence study, a correlation was found between prevalence of IgG and IgA with age. Our results were agreeable to previous reports whereby prevalence of IgG HHV6B was high in the first year of life, then decreases and after that increases again towards adulthood. The IgG present in the first year of life is the transplacental IgG HHV6B, afterwhich the maternal antibody wanes and the immune systems starts making its own antibodies. As for IgA HHV6B, although an increase was observed after the first four years, a definitive conclusion on the seroconversion could not be achieved as the increase was not consistent and seemed to fluctuate with age. Thus, there may be a possibility that the prevalence of IgA anti-HHV6B is not an important factor for seroprevalence study.

When cord blood was tested for the presence of IgA HHV6B, IgA was not detected enforcing the fact that IgA HHV6B is not transmitted through cord blood. But, IgG antibodies were detected. Thus we can say that the IgG HHV6B was transferred through maternal antibody but IgA was not. However, IgA was detected in breast milk. From our work, there is a possibility that breast milk may provide a means of passive immunity to HHV6. IFA proved to be a sensitive method to distinguish the positive and negative serum and breast milk samples before being subjected to peptidylated pin-ELISA. The presence of IgA in pin-ELISA but not in IFA presents a postulation as an indirect evidence of HHV6 shedding in saliva.

The peptides synthesized showed consistent reactivity, which is an important criterion if the peptides are to be used in diagnostic assays. Different class of antibodies

binds to different epitopes. This is clearly seen when IgA binds most reactively to peptide 13 (KGNSRDLYSGGNAE) of breast milk but showed insignificant reactivity when tested with IgG in sera. Peptide 13 is possibly a unique epitope to breast milk IgA.

All three body fluids showed high reactivity with peptide 44 (IRQDGETDEETVP). A definite conclusion for serum was that peptide 44 is immunodominant and has the potential of being used as an IgG marker for monitoring HHV6 infection. Further work would need to be carried out to confirm the potential of peptide 44 as an IgG marker for HHV6.

The regions found antigenic based on ELISA for both IgA and IgG reactivities was later analyzed based on hydrophilicity, accessibility and secondary structure by the NNPREDICT (a secondary structure analysis method) method from SWISSPROT. Beside these methods, mobility as well as coil structure hydropathy plots were used to reconfirm our findings. The regions we obtained as most antigenic, fell within the hydrophilic (Table 3.9 and 3.10) as well as surface accessible regions (Table 3.11 and 3.12). These regions were also highly mobile. As for secondary structures, peptide 44 showing highest reactivity was made up by helix-coil-helix structures. In fact, all peptides, which were selected as reactive, were made up of mostly coiled structures (Table 3.13 and 3.14).