

CHAPTER V

CONCLUSION

In conclusion, to our knowledge this is the first study to demonstrate the prolonged detection and the genetic characterization of DENV in various body compartments and time points. Both blood and non-blood compartments are permissive sites for DENV replication and survival by presenting the evidence of negative strand or replicative form of DENV and by illustrating the prolonged DENV detection, respectively. DENV is an acute and a self-limited viral infection but it acts as a persistent virus infection according to the slow rate of viral clearance and the presence of escape population in susceptible tissues or organs. The consequential outcome is that it presents the different viral loads in each specimen and time point, which varies in each patient and does not depend on serotypes, genotypes and strains of DENV. As Thailand is an endemic area for DENV infection, multi-serotypes, genotypes and strains of each infection normally occur. The difference of both nucleotide and amino acid variations as well as the diversity of DENV population or “quasispecies” in each specimen and time point mentioned in this study, especially at the domain III of E gene emphasize that the viral adaptation and the selection of survival population from host immune pressure in each body compartment and time point involve in the pathogenesis of DENV infection. This study also suggests that the presence of genetic diversity of DENV is under purifying, neutral or positive selection depending on each specimen type and time point. Moreover, some DENV populations persist in an individual body compartment whereas some populations spread into various body compartments before persisting in that suitable compartment. To date, the core concept of DENV pathogenesis seems contentious. All findings in this study may be an important jigsaw to elucidate the updated pathogenesis of DENV infection and be the useful data for studying the epidemiology and the controlling of DENV infection as well as the valuable database for vaccine development.