

Molecular and phenotypic characteristics of neurotropic HIV-1 subtype E

**Surangrat Srisurapanon¹, Kwonchit Samransurp², Somsith Tunsupasawasdee Kul³,
Uchara Chaowanich³, Pajitr Warachit⁴, Srisin Khusmith^{1#}, Ruengpung Sutthent²**

Although HIV-1 subtype E associated with neurological dysfunction is common, the virological characteristics of HIV-1 isolated from CNS in this subtype have not yet been identified. In this study, paired blood and CSF isolated from AIDS defining patients were cultured, sequenced and aligned. Phylogenetic tree, nucleotide-distances from both blood and CSF were investigated. Cytopathicity of paired blood and CSF isolates were compared to define the specific characteristics of CNS isolates. The results confirmed that CSF isolates showed less cytopathicity. By sequence analysis, the pair-wise distances of envelope gp 120 sequence

and those of all variable regions (except V3 region) between blood and CSF isolates were significantly different. The genetic distances in V1/V2 regions of CSF isolates showed more diverse than those of V1/V2 of blood isolates. These findings suggested that the evolution of V1/V2 regions of CSF isolates seem to be advantage for HIV-1 in CNS infection. In contrast, the genetic distance in V4 and V5 regions of CSF isolates showed less diverse suggesting that the conservation in these regions might be necessary during the process of HIV-1 in CNS infection.

¹ Department of pathology, Faculty of Medicine, Srinakharinwirot university, Bangkok Thailand.

² Department of Microbiology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok Thailand.

³ Bamrasnaradura Hospital, Department of Communicable Disease Control, Ministry of Public Health.

⁴ Department of Medical Science, Ministry of Public Health, Nonthaburi, Thailand.

⁵ Department of Microbiology and Immunology, Faculty of Tropical Medicine, Mahidol University.