HIV-1 SUBTYPE B *TAT* GENE ACTIVITIES AND DISEASE PROGRESSION IN HIV-1 CRF01_AE INFECTION

Chaisit Niyasom[1], Navin Horthongkham[1], Apichai Sreephiang[1], Wannee Kantakamalakul[1], Suda Louisirirotchanakul[1], Thippawan Chuenchitra[2] and Ruengpung Sutthent[1]

[1]Department of Microbiology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok; [2]Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand

Abstract. HIV-1 *tat* gene function and immunogenicity of HIV-1 Tat protein from 3 low (PS01, PS40, PS58) and 3 high (PS19, PS65, LP22) viral load infected, untreated and asymptomatic individuals from Thailand were compared. Levels of Tat-dependent chloramphenicol acetyltransferase (CAT) induced in HL3T1 cells with *tat1* gene from HIV-1 isolates of high viral load group was significantly higher than those from low viral load group. HIV-1 subtype determination using *env* (C2-V4) gene demonstrated that 2/3 (PS01 and PS40) and 1/3 (PS58) from low viral load group were CRF01_AE and subtype B, while all 3 HIV-1 isolates from high viral load group were CRF01_AE. However, all 3 HIV-1 *tat* nucleotide sequences from low viral load group, which contained *env* CRF01_AE sequence, belonged to subtype B whereas all those from high viral load group contained CRF01_AE sequence. HIV Tat recombinant proteins from these groups were tested for immunogenicity in mice. All recombinant Tat proteins (except from PS58) were immunogenic in a dose-dependent manner, but with significantly differences of the immunogenicity levels between high and low viral load groups. These results indicated that HIV-1 subtype B *tat* gene activities might be associated with reduced disease progression of HIV-1 CRF01_AE infected individuals.

Correspondence: Prof Ruengpung Sutthent, Department of Microbiology, Faculty of Medicine Siriraj Hospital, Mahidol University, 2 Prannok Road, Bangkok Noi, Bangkok 10700, Thailand.
Tel: 66 (0) 2419 8409; Fax: 66 (0) 2411 3921
E-mail: sirst@mahidol.ac.th