

## HIV-1 Subtype B Tat Gene Activities and Disease Progression in HIV-1 CRF01\_AE Infection

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### Abstract

**Objectives:** To study HIV-1 subtype B tat gene activities and disease progression of HIV-1 CRF01\_AE infected individuals.

**Methods:** 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.

**Results:** 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. 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.

**Conclusions:** 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.

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