STRUCTURE AND FUNCTION OF HIV-1 CRF01_AE ENVELOPE PROTEINS FROM BLOOD AND GENITAL FLUID ISOLATES

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Abstract. The recombinant envelope protein (gp120) of the human immunodeficiency virus type 1 (HIV-1) CRF01_AE *env* gene isolated from the corresponding blood (rgp120-F36PC) and genital fluid (rgp120-F36VC) specimens obtained from HIV infected individuals was successfully produced in both prokaryote and eukaryote cells. The yields of HIV-1 recombinant envelope proteins rgp120-F36PC and rgp120-F36VC produced in *E. coli* and in mammalian cells were 1.0 and 1.2, and 0.3 and 0.5 mg/ml, respectively. Antibody responses in mice immunized with rgp120-F36VC protein were not significantly higher than those with rgp120-F36PC protein. The level of antibody response in mice immunized with V3 deleted recombinant gp120 proteins from rgp120-F36VC and rgp120-F36PC was not significantly different from wild type rgp120 proteins. β-strands at the tip of the V3 loop of the HIV-1 envelope protein were predicted for the wild type genital fluid isolate but not for the wild type blood isolate. The replication capacity of both F36PC and F36VC was quite efficient. The infectivity assay of the epithelial cell line for pNL4-3/gp120F36VC was better than for pNL4-3/gp120F36PC. The extra β-strands in the V3 loop may be involved in cell tropism.

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