

## POSTER 56

### SCREENING OF HIV PMPA RESISTANT STRAIN AND MEDICINAL PLANT EXTRACT FOR ANTI-HIV-1 ACTIVITY

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Two kinds of study of HIV were processed in our laboratory.

In the first study, we generated HIV-1 strain resistance to antiretroviral agent inhibiting reverse transcriptase, PMPA, with *in vitro* passage. The HIV-1 A102-resistant to AZT was maintained with 4 months passage in the presence of increasing concentrations of PMPA up to 40  $\mu\text{M}$  on the fresh MT-2 cells. Selected HIV-1 mutant (CUK-2) showed decreased susceptibility to PMPA (4-fold) with the long-term *in vitro* exposure to PMPA after the 25 passages. The deduced amino acid sequence change, V148M substitution, from *pol* gene PCR analysis was detected.

The second study was to screen for the anti-HIV-1 activities in the buthanol, hexane, chloroform and water extracts from four widely used folk medicinal plants (*Sophora flavescens*, *Tulipa edulis*, *Herba ephedra*, and *Pachyma hoelen Rumph*). The hexane extract of *Pachyma hoelen Rumph*, PH-4, showed effective inhibition against HIV-1. p24 antigen assay showed 37.3  $\mu\text{g/ml}$  of 50% effective concentration ( $\text{EC}_{50}$ ) of PH-4 and the HIV-1 recombinant RT activity test (at 200  $\mu\text{g/ml}$ ) showed 36.8% of RT activity. Also, the protective effect of PH-4 on the infected MT-4 cells was 58.2% rate of protection. The 50% cytotoxic concentration ( $\text{CC}_{50}$ ) of PH-4 was 100.6  $\mu\text{g/ml}$ .

These results can provide the clue for the new drug development from natural products and design against drug-resistant HIV.