

Strong association between Korean red ginseng intake and gross deletion in the nef gene

Young Keol Cho, J. Lim, Y. Jung, H. Sung; Dept of Microbiol., Univ. of Ulsan Coll. of Med., 388-1 Pungnap-dong, Songpa-ku, Seoul 138-040, South Korea

Our previous studies have shown clinical usefulness of Korean red ginseng (KRG) in AIDS (Clin. & Diag. Lab. Immunol, 12:497-501, 2005). To investigate whether long-term intake of KRG could also affect on the HIV-1 gene, we amplified 1,127 nefgenes with uncultured PBMC in 93 patients infected with subtype B only. We obtained 140 (12.4%) grossly deleted nef genes (gnef \geq 20 bp compared to baseline) from 35 patients (37.6%). Among the 140 gnef, a half were single short band and the others were double or multiple bands as wild type and short band(s). Regarding KRG-intake, 35 did not take KRG as control and 58 took it (3-158 months with daily doses of 5.4 g). Among the control and KRG patients, 3 (8.6%) and 32 (55.2%) revealed a gnef in at least one sample, respectively ($P < 0.001$). The proportion of patients with gnef greatly depended on the duration of KRG-intake; 8.6%(3/35), 40.9%, 42.9%, and 87.5% in patients with KRG-intake for 0, 1- \leq 36, 37- \leq 72 and $>$ 72 months, respectively ($P < 0.001$). The proportion of nef sequences (n=1,127) with gnef also depended on the duration of KRG-intake: 5.0%, 10.5%, 9.9%, and 17.8% in the same order above ($P < 0.001$). In addition, the detection of gnef is higher (9/11: 81.8%) in slow progressors (SP) (AD: annual decrease in CD4 T cells over 10 years $<$ 20/ul) than that (26/82: 31.7%) in typical progressors (AD $>$ 20/ul) ($P < 0.01$). Of the 35 patients with gnef, 19 revealed it in \geq 2 different time points' samples. Six SPs consistently revealed it after first detection. The location of deletion extended to outside nef gene in 19 patients. In conclusion, there were strong associations among KRG-intake, progression rate, and high frequency of gnef in subtype B. These data show that long-term intake of KRG attenuate HIV-1 in vivo and thus KRG could be a kind of therapeutic vaccine. Supported by grants from Korean Society of Ginseng. Y. Cho, Tel; 82-2-3010-4283, X7