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Effects of IL-12 DNA Vaccine on Reactivation of *Mycobacterium tuberculosis* in Cornell Model

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Prevention against reactivation of dormant *M. tuberculosis* would be of great value in reducing incidence of tuberculosis particularly among the elderly. Among candidates for preventive intervention, IL-12 seems promising, because the cytokine was crucial to the development of protective immunity in mouse model. This study was thus designed to evaluate IL-12 in prevention against reactivation of dormant *M. tuberculosis* in Cornell Model. Mice were infected with *M. tuberculosis* H37Rv i.v. and treated for 12 weeks with INH and PZA in the diet after allowing two weeks of growth. Starting in the week 16, mice were given DNA vaccines expressing IL-12 or mutant IL-12 (IL-12m) three times in two-week intervals. Mice were then given dexamethasone at week 28 and euthanized at week 36 for counting viable *M. tuberculosis* from tissues. Among control mice, *M. tuberculosis* were grown in 63% and 75% of the lungs and spleens, respectively. In comparison, mice treated with IL-12 DNA vaccine showed growth of *M. tuberculosis* in 40% of the lungs and in 80% of the spleens. In mice treated with IL-12m DNA vaccine, *M. tuberculosis* was grown in 33% of the lungs and 67% of the spleens. The results showed a tendency of reduced recovery of *M. tuberculosis* in the lungs of mice treated with IL-12 or IL-12m DNA vaccines in Cornell model, but not in the spleens. A possibility of inhibition of IL-2 activity by dexamethasone is being under investigation in the Cornell model.