学位論文の要旨

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主論文の題名

Recombinant Ag85B vaccine by taking advantage of characteristics of human parainfluenza type 2 virus vector showed Mycobacteria-specific immune responses by intranasal immunization.

主論文の要旨

Viral vectors are promising vaccine candidates for eliciting suitable Ag-specific immune response. Since *Mycobacterium tuberculosis* (Mtb) normally enters hosts via the mucosal surface of the lung, the best defense against Mtb is mucosal vaccines that are capable of inducing both systemic and mucosal immunity. Although *Mycobacterium bovis* bacille Calmette-Guérin is the only licensed tuberculosis (TB) vaccine, its efficacy against adult pulmonary forms of TB is variable. In this study, we assessed the effectiveness of a novel mucosal TB vaccine using recombinant human parainfluenza type 2 virus (rhPIV2) as a vaccine vector in BALB/c mice. Replication-incompetent rhPIV2 (M gene-eliminated) expressing Ag85B (rhPIV2-Ag85B) was constructed by reverse genetics technology. Intranasal administration of rhPIV2-Ag85B induced Mtb-specific immune responses, and the vaccinated mice showed a substantial reduction in the number of CFU of Mtb in lungs and spleens. Unlike other viral vaccine vectors, the immune responses against Ag85B induced by rhPIV2-Ag85B immunization had an advantage over that against the viral vector. In addition, it was revealed that rhPIV2-Ag85B in itself has an adjuvant activity through the retinoic acid-inducible gene I receptor. These findings provide further evidence for the possibility of rhPIV2-Ag85B as a novel TB vaccine.