

Lack of Association between IL-10 Promoter Gene Polymorphisms and Tuberculosis Susceptibility in Thai Population

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Abstract : Tuberculosis (TB) remains a global health care disease world-wide. Control of the global TB epidemic has been impaired by the lack of an effective vaccine, by the emergence of drug resistant forms of Mycobacterium tuberculosis and by lack of sensitive and rapid diagnostics. Cytokines play a major role in defense against M. tuberculosis infection. Polymorphisms in the genes encoding various cytokines have been associated with tuberculosis susceptibility. Polymorphisms of the regulatory cytokine gene, the interleukin (IL)-10 is associated with the risk of tuberculosis (TB) in different populations. However, IL-10 gene polymorphism and susceptibility to TB in Thai is still unknown. The purpose of this study was to evaluate whether the common IL-10 promoter gene polymorphisms are associated with TB in Thai population. Forty eight patients with newly diagnosed pulmonary tuberculosis were studied. DNA samples were extracted from leukocytes and used to investigate -1087A/G, -819C/T, -252C/A (rs1800896, rs1800871, rs1800872) in IL-10 gene using restriction fragment length polymorphism (PCR-RFLP) methods. In this study, the genotype and allele frequencies of IL-10-1087A/G, -819C/T, -252C/A polymorphism did not significantly different between TB patients and healthy controls ((genotype: $p=0.38$, $p=0.92$, $p=1$; allele: $p=0.57$, $p=0.77$, $p=0.89$, respectively). The lack of association between common IL-10 promoter polymorphisms and TB susceptibility in this study may provide clue for better understanding of IL-10-1087A/G, -819C/T, -252C/A polymorphism and TB susceptibility in Thai population, which might facilitate the rationale design of vaccines. However, further studies in large scales population are required for confirmation.

Keywords : IL-10, cytokines, single nucleotide polymorphism (SNP), tuberculosis

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