



## IL-10 promoter SNPs and susceptibility to leprosy in ethnic groups from southwest China

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**ABSTRACT.** The purpose of this study was to determine whether interleukin-10 (IL-10) promoter polymorphisms are associated with leprosy or their subtypes in ethnic groups from southwest China. Genotyping using TaqMan<sup>®</sup> SNP Genotyping Master Mix and ABI 7500 real-time PCR system was performed for IL-10 T3575A, G2849A, C2763A, A1082G, C819T, and C592A in 189 healthy controls (40 ± 18 years) and 193 patients (46 ± 18 years) with leprosy [multibacillary, N = 131; paucibacillary (PB), N = 62]. The allelic frequencies of -2763C (97.9 vs 94.0%, P = 0.0074) and -1082A (92.8 vs 88.6%, P = 0.0452) in leprosy patients were significantly higher than in control subjects. The genetic frequency of -2763CC and -1082AA was not only significantly higher among leprosy patients than among control subjects [odds ratio (OR) = 3.33, 95% confidence interval (95%CI) = 1.39-7.99, P = 0.0071

and OR = 1.76, 95%CI = 1.02-3.03, P = 0.0420, respectively] but also significantly higher among PB patients than among control subjects (OR = 2.46, 95%CI = 1.22-4.96, P = 0.0115 and OR = 5.58, 95%CI = 2.06-15.12, P = 0.0007, respectively). The frequency of IL-10 haplotype 3575A/2849G/2763A/1082G/819C/592C was significantly higher among leprosy patients (OR = 5.57, 95%CI = 1.13-27.52, P = 0.0351) and PB patients (OR = 10.5, 95%CI = 1.36-81.05, P = 0.0241) than among control subjects. IL-10 promoter -2763C/CC,-1082A/AA and haplotype 3575A/2849G/2763A/1082G/819C/592C are associated with susceptibility to leprosy and the PB subtype in southwest China.

**Key words:** Genotyping; Haplotype analysis; IL-10 gene promoter; Single nucleotide polymorphism