



## Association of HLA-DRB alleles and pulmonary tuberculosis in North Chinese patients

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**ABSTRACT.** Human leukocyte antigen (HLA) plays a central role in the regulation of the immune response. HLA class II molecules are essential for T cell-mediated adaptive immunity and present peptide antigens to CD4<sup>+</sup> T cells. Because of its important role in the immune response and its high degree of polymorphism, the HLA system is associated with many diseases. We examined the polymorphisms of HLA-DRB alleles and the sequences of the HLA-DRB promoter region in 97 unrelated patients with pulmonary tuberculosis and in 62 unrelated normal controls of the Han nationality from North China, using PCR with sequence-specific primers and PCR direct sequencing. We found that the frequency of HLA-DRB1\*15 was significantly higher in the pulmonary tuberculosis group than in the healthy control group. The P value was 0.001, and the odds ratio was 3.793. The pulmonary tuberculosis group had the same HLA-DRB1 promoter region sequences as the control group. We concluded that the HLA-DRB1\*15 allele is associated with pulmonary tuberculosis in the Han nationality from North China. The HLA-DRB1 promoter region sequences had no association with the development of pulmonary tuberculosis.

**Key words:** Pulmonary tuberculosis; Human leukocyte antigen; Gene frequency; Promoter