



# HLA-A gene polymorphisms contribute to osteoporosis susceptibility in postmenopausal Han Chinese women

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**ABSTRACT.** Osteoporosis is a common disease characterized by low bone mineral density, deterioration in bone microarchitecture, and increased fracture risk and is more prevalent in postmenopausal women. *HLA* is a complex gene family; previous studies have shown that it plays an important role in the pathogenesis of osteoporosis among Japanese and Greek populations. Prompted by these findings, this study was designed to explore the associations between *HLA-A* gene polymorphisms and postmenopausal osteoporosis in the Han Chinese population. The polymerase chain reaction-sequence-based typing method was used for DNA genotyping at the *HLA-A* locus in 70 patients with postmenopausal osteoporosis and 73 healthy controls.

We identified 17 *HLA-A* alleles in patients with postmenopausal osteoporosis and 20 *HLA-A* alleles in control subjects. Furthermore, we found that the frequency of the *HLA-A*\*02:07 allele was significantly higher in patients with postmenopausal osteoporosis than in control subjects ( $P = 0.023$ ), and the relative risk was 4.065 (95% confidence interval = 1.109-14.893). Our study provides supportive evidence for the contribution of *HLA-A* gene polymorphisms to the susceptibility to postmenopausal osteoporosis and suggests that *HLA-A*\*02:07 is likely an important genetic risk factor for postmenopausal osteoporosis in the Han Chinese population.

**Key words:** Human leukocyte antigen-A; Polymorphisms; Polymerase chain reaction-sequence-based typing; Postmenopausal osteoporosis; Bone mineral density