



Association of *TSC* gene variants and hypertension in Mongolian and Han populations

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ABSTRACT. We investigated a possible association between genetic variations in the thiazide-sensitive Na-Cl cotransporter (*TSC*) gene and essential hypertension (EH) in the Mongolian and Han ethnic groups in Inner Mongolia. Our study included 385 unrelated Mongolian herdsman and 523 Han farmers. Nine tagSNPs of *TSC* were identified from the Chinese HapMap database based on pairwise $r^2 \geq 0.5$ and minor allele frequency ≥ 0.05 . Genotyping was performed using the PCR/ligase detection reaction assay. Association between tagSNPs and hypertension was investigated under the additive model. There were significant differences between the genotype and allele frequencies of rs13306673 between the EH group and the control group in the Han population. Significant associations were found between the rs7204044 variant and EH in both the Mongolian and Han ethnic groups. The frequency of haplotype GCA in the EH group was significantly higher than in the control group in the Mongolian population. In the Han population, the frequency of haplotype TGG was significantly higher in the EH group than in controls, whereas haplotype TGA occurred significantly less often in EH than in controls. We suggest that rs7204044 of *TSC* is a

genetic factor for EH in these two ethnicities and that rs13306673 is a genetic factor for EH in the Han population.

Key words: Essential hypertension; Mongolian population; *TSC*; Single nucleotide polymorphism