



Lack of association of variants of the renal salt reabsorption-related genes *SLC12A3* and *CIC-Kb* and hypertension in Mongolian and Han populations in Inner Mongolia

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ABSTRACT. Abnormalities in renal sodium chloride and water reabsorption play important roles in the development of hypertension. Mutations in the genes involved in renal sodium chloride reabsorption can affect blood pressure. Recently, the *R904Q* variant of the sodium/chloride transporters, member 3 (*SLC12A3*) gene and the T481S variant of the chloride channel *Kb* (*CIC-Kb*) gene were found to be implicated in essential hypertension. We investigated a possible role of the *SLC12A3* and *CIC-Kb* genes in the prevalence of essential hypertension in the Mongolian and Han ethnic groups. The study population comprised 308 unrelated Mongolians with essential hypertension, 271 Mongolian normotensives, 285 unrelated Han with essential hypertension, and 194 Han normotensives living in Inner Mongolia. The presence of the *SLC12A3 R904Q* and *CIC-Kb-T481S* polymorphisms was determined using TaqMan PCR. The risk factors for hypertension were age, body

mass index, alcohol consumption, total plasma cholesterol, and low-density lipoprotein cholesterol. The genotype and allele frequencies of *SLC12A3 R904Q* and *CIC-Kb-T481S* were not significantly different between hypertensive patients and controls in the Mongolian (*SLC12A3 R904Q*, P = 0.471 and P = 0.494, *CIC-Kb-T481S*, P = 0.960 and P = 0.960, respectively) and Han (*SLC12A3 R904Q*, P = 0.765 and P = 0.777, *CIC-Kb-T481S*, P = 0.100 and P = 0.103, respectively) populations. There was no significant association between the *SLC12A3 R904Q* variant and the *CIC-Kb-T481S* variant and essential hypertension in either ethnic group.

Key words: Essential hypertension; Mongolian population; *SLC12A3*; *CIC-Kb*; Gene polymorphism