



# Polymorphisms of rs1799983 (G>T) and rs1800780 (A>G) of the eNOS gene associated with susceptibility to essential hypertension in the Chinese Hui ethnic population

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**ABSTRACT.** We investigated a possible association of polymorphism of the eNOS gene and essential hypertension in the Chinese Hui population; polymorphisms of rs2070744 (T>C), rs1799983 (G>T), rs1800780 (A>G), and rs3918181 (A>G) loci of the eNOS gene were examined. We found that the genotypic frequencies at rs1799983 and rs1800780 loci differed significantly between patients with essential hypertension and control cohorts. The allelic frequency of the rs1799983 locus also differed significantly between essential hypertension patients and non-essential hypertension controls in this population. Additionally, the G allele of the rs1799983 locus was less frequent in the essential hypertension patients than in controls, with an odds ratio (OR) value of 3.851 [95% confidence interval (95%CI) = 2.236-6.631]. This is an indication of a protective factor of essential hypertension in Chinese Hui people. Haplotype analysis using the 4 SNPs revealed 15 haplotypes. Haplotype frequencies of

CGAG, TTAG, TGGG, TTGG, and TTGA were significantly different in essential hypertension patients compared to non-essential hypertension controls. Individuals with haplotypes CGAG [ $\chi^2 = 7.371$ , OR (95%CI) = 0.352 (0.161-0.770)] and TGGG [ $\chi^2 = 6.180$ , OR (95%CI) = 0.600 (0.400-0.899)] appear less likely to have essential hypertension. However, Chinese Hui with the haplotype TTAG are at risk to develop essential hypertension [ $\chi^2 = 10.816$ , OR (95%CI) = 2.689 (1.466-4.932)]. We conclude that polymorphism of the eNOS gene is associated with susceptibility to essential hypertension in the Chinese Hui population.

**Key words:** eNOS gene; Essential hypertension; Chinese Hui population; Polymorphisms