



G-395A polymorphism in the promoter region of the *KLOTHO* gene and hypertension among elderly (90 years and older) Chinese individuals

L.L. Gao, X. Ding, D.M. Xie, M. Yang and B.R. Dong

The Center of Gerontology and Geriatrics, West China Hospital, Sichuan University, Chengdu, Sichuan, China

Corresponding author: M. Yang
E-mail: yangmier@gmail.com

Genet. Mol. Res. 14 (4): 15444-15452 (2015)

Received June 10, 2015

Accepted September 30, 2015

Published November 30, 2015

DOI <http://dx.doi.org/10.4238/2015.November.30.22>

ABSTRACT. The aim of this study was to examine the possible associations between the *KLOTHO* G-395A gene polymorphism and hypertension in Chinese nonagenarians and centenarians. The G-395A (rs1207568) in the promoter region of the *KLOTHO* gene was genotyped using a standard TaqMan allelic discrimination assay. We included 710 participants aged 93.5 ± 3.2 years in the analyses. The expression of the A allele of the *KLOTHO* G-395A polymorphism was significantly downregulated in the hypertension group compared to the control group (0.137 vs 0.200, $P < 0.001$). The genotype distribution of the G-395A polymorphism between the hypertension and control groups was significantly different in women and smokers, and not in men or non-smokers. The mean systolic blood pressure, percentage of hypertension, and percentage of isolated systolic hypertension was significantly higher in the group with the GG genotype than in the group with the GA+AA genotype. Subjects expressing the GA+AA genotype demonstrated a significantly lower risk of hypertension even after adjusting for age, gender, and other relevant risk factors compared to the population expressing the GG genotype (odds ratio, 0.68; 95% confidence interval: 0.49 to 0.95). The -395A allele of the

KLOTHO gene may be a protective genetic factor for hypertension in the Chinese population.

Key words: KLOTHO gene; Hypertension; Single nucleotide polymorphism