



Association of *APOA1* gene polymorphisms (rs670, rs5069, and rs2070665) with dyslipidemia in the Kazakhs of Xinjiang

D.W. Feng*, R.L. Ma*, H. Guo, J. He, Y.Z. Yan, Muratbek, Q. Niu, S.G. Li, D.S. Rui, F. Sun, M. Zhang, J.Y. Zhang, Y.S. Ding, J.M. Liu, K. Wang and S.X. Guo

Department of Preventive Medicine, Medical College of Shihezi University, XinJiang, China

*These authors contributed equally to this study.

Corresponding author: S.X. Guo

E-mail: pge888@sina.com

Genet. Mol. Res. 15 (2): gmr.15028094

Received November 18, 2015

Accepted January 18, 2016

Published April 26, 2016

DOI <http://dx.doi.org/10.4238/gmr.15028094>

ABSTRACT. The aim of this study was to investigate the potential association between apolipoprotein A1 (*APOA1*) gene rs670, rs5069, and rs2070665 polymorphisms and dyslipidemia in the Kazakh population of Xinjiang, China. Matrix-assisted laser desorption/ionization time of flight mass spectrometry (MALDI-TOF-MS) was used to identify *APOA1* (rs670, rs5069, and rs2070665) genotypes in 736 subjects (341 dyslipidemia patients and 395 control subjects). The frequencies of the CC genotype for rs1421085 were found to be 7.2% (obese group), 4.4% (overweight group), and 5.6% (control group). Polymorphisms of the three loci of the *APOA1* gene in Kazakh subjects met Hardy-Weinberg equilibrium. The frequencies of the A allele for rs670 were found to be 14.3% (dyslipidemia group) and 12.7% (control group). The frequencies of the T allele for rs5069 and rs2070665 were: dyslipidemia group (7.2 and 30.1%, respectively) and control group (7.7 and 32.5%, respectively). Frequency distributions

of the 3 types of genotypes and alleles of the three loci showed no statistically significant difference ($P > 0.05$). Significant differences were observed in lipoprotein (α) [Lp(α)] between patients with the rs2070665 CT + TT and CC genotypes ($P < 0.05$); however, none of the other relevant indicators differed significantly between the two genotypes. No significant association was identified between rs670 or rs5069 and the lipid-related metabolic indices assessed in the study. These findings indicate that the polymorphisms in the *APOA1* gene (rs670, rs5069, and rs2070665) are not associated with dyslipidemia in the Kazakh population assessed in this study.

Key words: APOA1 gene; Gene polymorphism; Kazak; Dyslipidemia