Association between a single nucleotide polymorphism of the *XRCC1* gene and hepatocellular carcinoma susceptibility in the Chinese Han population


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**ABSTRACT.** The human X-ray repair cross-complementing protein 1 (*XRCC1*) gene is a potentially gene determining hepatocellular carcinoma (HCC) susceptibility. The purpose of this study was to evaluate the association between *XRCC1* and susceptibility to HCC. The association of *XRCC1* polymorphisms with HCC susceptibility was investigated in 460 HCC patients and 463 controls using the created restriction site-polymerase chain reaction method. Our results indicate that the c.1471G>A variant could be detected and that the allele and genotype frequencies were statistically different between cases and controls. The AA genotype was strongly associated with increased HCC susceptibility as compared with the GG wild genotype (OR = 2.214, 95%CI = 1.493-3.283, $\chi^2 = 15.97$, $P < 0.0001$). In addition, significantly increased HCC susceptibility was also found in a dominant and recessive model ($P < 0.01$). The allele A could contribute to HCC susceptibility compared with the G allele (OR = 1.480, 95%CI = 1.224-1.789, $\chi^2 = 16.44$, $P = 0.0001$). Results from this study indicate...
that the XRCC1 c.1471G>A polymorphism is associated with HCC susceptibility in the Chinese Han population. Future studies on larger populations are essential to confirm this association.

**Key words:** Hepatocellular carcinoma; *XRCC1* gene; Single nucleotide polymorphism; Molecular marker; Susceptibility