

Association between p53 codon 72 genetic polymorphism and tobacco use and lung cancer risk

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Lung cancer (LCA) is the leading cause of death by cancer in men. Genetic and environmental factors play a synergistic role in its etiology. We explore in 111 lung cancer cases and 133 unrelated noncancer controls the gene-environment interaction ($G \times E$) between p53cd72 polymorphism variants and smoking and the effect on LCA risk in two kinds of case-control designs. We assessed the interaction odds ratio (IOR) using an adjusted unconditional logistic model. We found a significant and positive interaction association between Proallele carriers and smoking habits in both case-control and case-only designs: IOR = 3.90 (95% confidence interval [CI] = 1.10-13.81) and 3.05 (95% CI = 1.63-5.72), respectively. These exploratory results suggest a synergistic effect of the smoking habit and the susceptibility of the Pro allele on lung cancer risk compared with each risk factor alone. © 2008 Springer Science+Business Media, LLC.