Association of the *IL6* polymorphism rs1800796 with cancer risk: a meta-analysis

Y. Du¹²*, L. Gao¹²*, K. Zhang¹ and J. Wang¹

¹Key Laboratory of Mental Health, Institute of Psychology, Chinese Academy of Sciences, Beijing, China
²University of Chinese Academy of Sciences, Beijing, China

*These authors contributed equally to this study.

Corresponding authors: J. Wang / K. Zhang
E-mail: wangjing@psych.ac.cn / zhangkl@psych.ac.cn

Received May 5, 2015
Accepted August 21, 2015
Published October 26, 2015
DOI http://dx.doi.org/10.4238/2015.October.26.20

**ABSTRACT.** The human *IL6* (interleukin 6 (interferon, beta 2)) gene encodes IL-6, a cytokine which not only plays regulatory roles in inflammation, but may be also involved in the progression of cancer. Rs1800796 is a single nucleotide polymorphism (SNP) in the promoter region of *IL6*, and is associated with IL-6 production. A number of studies have been carried out to determine whether this SNP is associated with cancer risk. However, the results are inconsistent due to small sample sizes of individual studies and limited statistical power. Therefore, to evaluate the overall effect on all investigated cancer types, we conducted a meta-analysis by combining all available studies. Nineteen eligible case-control studies including 23,030 subjects (9,985 cases and 13,045 controls) were included for this meta-analysis. Our study demonstrates that rs1800796 is significantly associated with cancer risk in three genetic models (allele G vs allele C, pooled OR = 1.182, P = 0.009; CG + GG vs CC, pooled OR = 1.333, P = 0.006; CG vs CC, pooled OR = 1.323, P = 0.007). Our meta-analysis suggests that...
polymorphism rs1800796 within the *IL6* gene may be a potential risk factor for cancer.

**Key words:** rs1800796; Interleukin 6; Cancer risk; Meta-analysis