



# Association of glutathione S-transferase (GST) genetic polymorphisms with treatment outcome of cisplatin-based chemotherapy for advanced non-small cell lung cancer in a Chinese population

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**ABSTRACT.** The aim of this study was to evaluate the association of *GSTM1* null/present, *GSTT1* null/present, and *GSTP1* Ile105Val polymorphisms with the chemotherapy response and overall survival of advanced NSCLC. Two hundred and sixty-two patients with histologically confirmed advanced NSCLC (inoperable TNM stages IIIA, IIIB, and IV) were enrolled to this hospital-based study between May 2009 and May 2012. The *GSTM1* null/present, *GSTT1* null/present, and *GSTP1* Ile105Val polymorphisms were genotyped by polymerase chain reaction coupled with restriction fragment length polymorphism. A logistic regression analysis revealed a correlation between the null genotype of *GSTM1* and improved response to chemotherapy [odds

ratio = 1.82; 95% confidence interval (CI) = 1.06-3.14]. Analyses with the Cox proportional hazards model also indicated that the null genotype of *GSTM1* was associated with lower risk of death (hazard ratio = 0.40; 95%CI = 0.23-0.69). In conclusion, the null genotype of *GSTM1* was found to be correlated with improved response to chemotherapy and lower risk of death in advanced NSCLC patients.

**Key words:** *GSTM1*; *GSTT1*; *GSTP1*; polymorphism; NSCLC; Chemotherapy