



## Association of *GSTT1* and *GSTM1* variants with acute myeloid leukemia risk

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**ABSTRACT.** We aimed to investigate the relationships between polymorphisms of the glutathione S-transferases (GSTs) *GSTM1*, *GSTT1*, and *GSTP1* and the risk of developing acute myeloid leukemia (AML). A total of 206 AML cases and 231 controls were collected for our study. The genotyping of GSTs (*GSTM1*, *GSTT1*, and *GSTP1*) was based upon the duplex polymerase chain reaction with the confronting two-pair primer (PCR-CTPP) method. Individuals carrying null *GSTT1* and *GSTM1* genotypes had a 1.52- and 1.78-fold increased risk of developing acute leukemia, respectively, compared to non-null genotype carriers ( $P < 0.05$ ). A high risk was observed in those carrying a combination of null genotypes of *GSTM1* and *GSTT1* with *GSTP1*-Val allele genotypes when compared with those carrying wild-type genotypes, with an odds ratio (95% confidence interval) of 3.62 (1.53-8.82) ( $P < 0.05$ ). These findings indicate that genetic variants of *GSTT1* and *GSTM1* significantly increase the risk of developing AML. Our study offers important insights into the molecular etiology of AML.

**Key words:** Glutathione S-transferase; Polymorphisms; Acute myeloid leukemia