

## MRP1 polymorphisms (T2684C, C2007T, C2012T, and C2665T) are not associated with multidrug resistance in leukemic patients

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**ABSTRACT.** One of the main problems in treating cancer patients is that cancer cells can develop drug resistance. Resistance to multiple anticancer drugs, so called multidrug resistance (MDR), most likely involves a nonspecific mode of resistance, through drug-efflux transporters. One of the most extensively studied genes involved in MDR is multidrug resistance protein 1 (*MRP1*). We investigated a possible association between the expression level of *MRP1* and the occurrence of MDR in leukemic patients, and we tested the hypothesis that *MRP1* polymorphisms are predictive of MDR in patients with acute leukemia. The mRNA level of *MRP1* was determined in 111 patients with acute leukemia (including 52 patients with acute myeloid leukemia and 59 patients with acute lymphoblastic leukemia), by quantitative real-time PCR, to determine how it af-

affected the response to chemotherapy. We typed T2684C, C2007T, C2012T, and C2665T *MRP1* polymorphisms in 111 patients classified as either drug-resistant or drug-responsive. We found that high expression of *MRP1* was associated with the MDR phenotype in both acute myeloid leukemia and acute lymphoblastic leukemia patients. There was no effect of a particular genotype on the expression level of the *MRP1* gene. We found no significant differences in chemosensitivity among any of these genotypes.

**Key words:** Multidrug resistance protein; Multidrug resistance; Single nucleotide polymorphism