

Turkish Journal of Medical Sciences



Turkish Journal
of
Medical Sciences

Common Cytochrome p4503A (CYP3A4 and CYP3A5) and Thiopurine S-Methyl Transferase (TPMT) Polymorphisms In Turkish Population

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 [Keywords](#)
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Abstract: Polymorphisms in the genes encoding cytochrome p450 (CYP) and thiopurine S-methyl transferase (TPMT) enzymes catalyze the metabolic reactions of several drugs. These polymorphisms might be responsible for adverse drug reactions. Turkish population data for these genes still needs to be elucidated. We aimed to detect the allele frequencies of thiopurine S-methyl transferase (TPMT), cytochrome p4503A4*1B (CYP3A4*1B) and cytochrome p4503A4*3 (CYP3A5*3) gene variants in the Turkish population. We examined the TPMT (*1, *2, *3A, *3C), CYP3A4*1B and CYP3A5*3 variant allele frequencies in a group of healthy Turkish Caucasian blood donors by using PCR-RFLP, allele-specific PCR and direct sequencing techniques. The frequencies of four allelic variants of TPMT gene, are *2 (238G>C)(2.0%), *3A (460G>A and 719A>G)(1.0%), *3B (460G>A)(0.0%) and *3C (719A>G) (1.4%). We observed CYP3A4*1B allele frequency in 1.4% and CYP3A5*3 allele frequency in 7.5% of our population. This study provides the first analysis of TPMT, CYP3A4*1B and CYP3A5*3 mutant allele frequencies in the Turkish population.

Key Words: pharmacogenetics, TPMT, CYP3A4, CYP3A5

Turk J Med Sci 2006; **36**(1): 11-15.

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