

PHARMACOGENETICS OF HUMAN ERYTHROCYTE  
THIOPURINE METHYLTRANSFERASE ACTIVITY IN A  
KOREAN POPULATION

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Thiopurine methyltransferase(TPMT), is an enzyme detected in the human RBC that catalyzes the S-methylation of thiopurine drugs and is known to exist as a genetic polymorphism. Methylation polymorphism of thiopurines was determined in 161 unrelated, healthy Korean subjects. The activity of thiopurine methyltransferase (TPMT) was measured in RBC by a radiochemical method.

The log value of TPMT activity showed bimodal distribution by frequency histogram and probit plot. A sample group of Korean subjects had a mean activity of  $30.8 \pm 8.5$  units/ml RBC and an antimode of 17.0 units/ml RBC similar to the value reported in Chinese population. The enzyme activity was not significantly influenced by the sex, but significantly influenced by the age and alcohol intake of the subjects( $p=0.0026$ ). In Korean population sample, the subject with undetectable enzyme activity was not found. Seven subjects (4.3% of Korean population, 95% confidence limit: 0.004 - 6.5%) had TPMT activities below 17.0 units/ml RBC, with a mean value of  $15.2 \pm 1.8$  units/ml RBC.

The frequency occurrence of intermediate activity of TPMT was much smaller compared to the ones reported for white(12.2 to 17.0%) and black(8.6%) peoples but was similar to Chinese population(3.4%).