Healthscope
ADVANCED PATHOLOGY

TPMT PredictAR

TPMT PredictAR determines an individual's Thiopurine Methyltransferase (TPMT) genotype.

TPMT is the primary enzyme responsible for thiopurine drug based metabolism.

Thiopurine drugs (Azathioprine, 6-mercaptopurine and 6-thioguanine) require conversion to thioguanine nucleotides to exert their therapeutic (cytotoxic) effect; however that conversion can be blocked by methylation or oxidation. The methylation pathway depends on TPMT activity.

TPMT activity is significantly affected by a common genetic polymorphism found in the TPMT gene.

Approximately, 89% of the population have high enzyme activity and are homozygous for the normal allele, 11% inherit intermediate levels of enzyme activity with one normal and one variant allele, while 1 in 300 have no functional activity (two variant alleles, homozygous TPMT)[1].

Thioguanine nucleotides can accumulate in patients who have reduced TPMT activity and who are receiving standard thiopurine doses, which may then lead to severe and possibly fatal myelosuppression.

BENEFITS AND CLINICAL USE OF TPMT PredictAR

- TPMT genotyping makes it possible to accurately identify patients who are at high risk of thiopurine drug toxicity.
- A patient's genotype does not change, so it only needs to be determined once.
- The test is performed daily (Mon-Fri) ensuring a rapid result and minimising any delay in treatment.
- Methods for measuring Red Blood Cell (RBC) TPMT activity are available, but results may be falsely elevated by recent blood transfusions. TPMT genotype testing can predict reduced TPMT activity and is not affected by these variables.
- TPMT PredictAR enables clinicians to develop a thiopurine treatment strategy that minimises the risk of potentially life-threatening haematopoietic toxicity.

SPECIMEN REQUIREMENTS

Test Name: TPMT PredictAR

Sample Type: 4ml EDTA whole blood (Two buccal swabs are also accepted)

Frequency: Daily (Mon-Fri)

REFERENCES

1. Lennard L. TPMT in the Treatment of Crohn's Disease with Azathioprine. Gut 2002; 51:143-6
2. Krynetski EY, Evans WE. Pharmacogenomics of Cancer Therapy: Getting Personal. Am J Hum Genet 1998; 63:11-6

All pharmacogenetic test results are interpreted and reported by clinical geneticists at GenesFX Health. The GenesFX Health scientific advisory board comprises clinicians, geneticists, pharmacists and clinical pharmacologists.

More information can be found at www.genesfx.com.au

If you have any questions or require further information, please contact our Customer Service Centre.
1300 453 688

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