

CYP450 2C19 ADVANCED MOLECULAR DIAGNOSTICS TESTING

CLINICAL RELEVANCE

- CYP450 2C19 metabolizes 15% of all prescribed drugs
- 2C19 polymorphisms can be used to predict altered enzyme activity and address the potential effects of metabolized drugs
- The allelic frequency of CYP2C19*2 is about 30%, but has been reported to be as high as 75-85% in Asians and about 15% in Caucasians and African Americans.¹
- The allelic frequency of CYP2C19*3 allele has been reported as 6-10% in Asians and is very rare (<1%) in Caucasians and African Americans.¹
- CYP2C19 *2, *3 variant is associated with poor metabolizer (PM) and found in 1-3% Caucasian population and 13-23% of the Asian population.¹

CLINICAL UTILITY

- “Variants (polymorphisms) of CYP2D6 and CYP2C19 are associated with significant phenotypic variations that alter the rate of drug metabolism and may cause increased or decreased drug efficacy or adverse drug reactions.”²
- Genetic polymorphisms of 2C19 (*2, *3) could be used to predict the altered enzyme activity and address the potential effects of metabolized drugs.
- Cytochrome P450 2C19 mutations play important roles in the metabolic rates of Clopidogrel (Plavix) processing. Plavix is less effective in some patients, decreasing efficacy and requiring dose adjustments.^{3, 4, 5, 6, 7, 8}

GENETIC VARIANTS

19154G>A/*2	90033C>T *5	12711T>C/*8
17948G>A/*3	12748G>A/*6	12874G>A/*9
1A>G/*4	19294T>A/*7	19153C>T/*10
		806C>T+3402C>T/*17

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