PGx - Cytochrome P450 2C19 (CYP2C19)

This assay is used to identify patients who may be at risk for altered metabolism of drugs that are modified by CYP2C19. Cytochrome P450 (CYP) isozyme 2C19 is responsible for phase I metabloism of about 40% of drugs including: clopidogrel, phenytoin, diazepam, R-warfarin, tamoxifen, some antidepressants, proton pump inhibitors, and antimalarials.

Testing Method and Background

This test utilizes the eSensor® 2C19 Genotyping Test is an in vitro diagnostic for the detection and genotyping a panel of variants involved with enzyme metabolism using isolated genomic DNA. The eSensor® technology uses a solid-phase electrochemical method for determining the genotyping status. The eSensor® 2C19 Genotyping Test is for research use only (RUO).

CYP2C19 drug metabolism varies among individuals depending on specific genotype. The CYP2 family has many single-nucleotide polymorphisms (SNPs). CYP2C19 gene is located on chromosome 10q23.33 and is highly polymorphic, which can lead to large individual variation in CYP2C19 enzyme activity and related drug response phenotypes and/or undesired adverse drug events. Specifically, the CYP2C19 gene has more than 34 variant alleles identified, which in turn affects the pharmacokinetics of many drugs.

Highlights of PGx - Cytochrome P450 2C19 (CYP2C19)

Targeted Region

CYP2C19: Detects 11 variants/polymorphisms

681G>A (*2)	636G>A (*3)	1A>G (*4)	1297C>T (*5)	395G>A (*6)	19294T>A (*7)
358T>C (*8)	431G>A (*9)	680C>T (*10)	1228C>T (*13)	-806C>T (*17)	

Ordering Information

Get started (non-HFHS): Print a Genetic Hereditary Disorder requisition form online at www.HenryFord.com/HFCPD

Get started (HFHS): Order through Epic using test " PGx- Cytochrome P450 2C19 (CYP2C19)" (DNA2100024)

Specimen requirements:

- Peripheral Blood - 1-3ml in lavender top tube (EDTA) **Specimen stability: Ambient - 72 hours; Refrigerated - 1 week**
- Saliva specimen - Oragene self-collection kit
- Extracted DNA - from a CLIA-certified Laboratory

Cause for Rejection: Clotted, hemolyzed, or frozen specimens, improper anticoagulant, tubes not labeled with dual patient identification, non-dedicated tubes.

TAT: 5-7 business days (after Prior Authorization obtained)

Mail test material to:
Henry Ford Center for Precision Diagnostics
Pathology and Laboratory Medicine
Clinic Building, K6, Core Lab, E-655
2799 W. Grand Blvd., Detroit, MI 48202

CPT Codes: 81225, G0452

Contact us: Client Services, Account and Billing Set-up, and connect with a Molecular Pathologist at (313) 916-4DNA (4362)

For more information on Comprehensive Molecular Services, visit our website
www.HenryFord.com/HFCPD

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