

Client: Example Client ABC123
123 Test Drive
Salt Lake City, UT 84108
UNITED STATES

Physician: Doctor, Example

Patient: Patient, Example

DOB: Unknown
Gender: Female
Patient Identifiers: 01234567890ABCD, 012345
Visit Number (FIN): 01234567890ABCD
Collection Date: 00/00/0000 00:00

CYP2D6

ARUP test code 3001513

2D6GENO Specimen whole Blood

CYP2D6 Genotype *2/*17

CYP2D6 Phenotype **Ultrarapid ***

2D6GENO Interpretation See Note

The following CYP2D6 alleles were detected: one copy of *17 allele and a duplicated *2 allele were detected. This predicts the ultrarapid metabolizer phenotype with an activity score estimated at >2.25 of 2.

Recommendation: Guidelines for genotype-based dosing are published by the Clinical Pharmacogenetics Implementation Consortium (CPIC) and can be found at: <https://www.pharmgkb.org/>.

The duplicated 2D6 allele was determined by Long Range PCR and Sanger sequencing.

This result has been reviewed and approved by [REDACTED]

BACKGROUND INFORMATION: CYP2D6

Characteristics: The cytochrome P450 (CYP) isozyme 2D6 is involved in the metabolism of many drugs. Variants in the gene that code for CYP2D6 may influence pharmacokinetics of CYP2D6 substrates, and may predict or explain non-standard dose requirement, therapeutic failure or adverse reactions.
Inheritance: Autosomal codominant.
Cause: CYP2D6 gene variants and copy number affect enzyme expression or activity function.
Variants Tested:(Variants are numbered according to M33388 sequence.)

Negative: No variants detected is predictive of the *1 functional allele.

CYP2D6*2: rs16947, g.2850C>T; rs1135840, g.4180G>C
CYP2D6*2A: rs1080985, g.-1584C>G; rs16947, g.2850C>T; rs1135840, g.4180G>C
CYP2D6*3: rs35743686, g.2549del

H=High, L=Low, *=Abnormal, C=Critical

CYP2D6*4: rs1065852, g.100C>T; rs3892097, g.1846G>A; rs1135840, g.4180G>C
 CYP2D6*5: gene deletion
 CYP2D6*6: rs5030655, g.1707del; rs1135840, g.4180G>C
 CYP2D6*7: rs5030867, g.2935A>C
 CYP2D6*8: rs5030865, g.1758G>T; rs16947, g.2850C>T; rs1135840, g.4180G>C
 CYP2D6*9: rs5030656, g.2615_2617del
 CYP2D6*10: rs1065852, g.100C>T; rs1135840, g.4180G>C
 CYP2D6*11: rs1080985, g.-1584C>G; rs201377835, g.883G>C; rs16947, g.2850C>T; rs1135840, g.4180G>C
 CYP2D6*13: a CYP2D7-derived exon 1 conversion
 CYP2D6*14: rs5030865, g.1758G>A; rs16947, g.2850C>T; rs1135840, g.4180G>C
 CYP2D6*15: rs774671100, g.137_138insT
 CYP2D6*17: rs28371706, g.1023C>T; rs16947, g.2850C>T; rs1135840, g.4180G>C
 CYP2D6*29: rs16947, g.2850C>T; rs59421388, g.3183G>A; rs1135840, g.4180G>C
 CYP2D6*35: rs769258, g.31G>A; rs16947, g.2850C>T; rs1135840, g.4180G>C; rs1080985, g.-1584C>G
 CYP2D6*36: a CYP2D6*10 carrying a CYP2D7-derived exon 9 conversion
 CYP2D6*36-*10: a CYP2D6*36 and a CYP2D6*10 in tandem
 CYP2D6*40: rs28371706, g.1023C>T, rs16947, g.2850C>T; rs1135840, g.4180G>C; rs72549356, c.1863_1864ins TTTCGCCCTTCGCCCC
 CYP2D6*41: rs16947, g.2850C>T; rs28371725, g.2988G>A; rs1135840, g.4180G>C
 CYP2D6*42: rs16947, g.2850C>T; rs1135840, g.4180G>C; rs72549346, g.3260_3261insGT
 CYP2D6*49: rs1065852, g.100C>T; rs1135822, g.1611T>A; rs1135840, g.4180G>C
 CYP2D6*69: rs1065852, g.100C>T; rs16947, g.2850C>T; rs28371725, g.2988G>A; rs1135840, g.4180G>C
 CYP2D6*114: rs1065852, g.100C>T; rs5030865, g.1758G>A; rs16947, g.2850C>T; rs1135840, g.4180G>C
 DUP: complete gene duplications

Clinical Sensitivity: Drug-dependent.
 Methodology: Polymerase chain reaction (PCR) and fluorescence monitoring. Sequencing is only performed if needed to characterize a duplicated CYP2D6 gene.
 Analytical Sensitivity and Specificity: Greater than 99 percent.
 Limitations: Only the targeted CYP2D6 variants will be detected by this panel, and assumptions about phase and content are made to assign alleles. Publicly available sources such as the www.pharmvar.org or www.pharmgkb.org provide guidance on phenotype predictions and allele frequencies. A combination of the *5 (gene deletion) and a gene duplication cannot be specifically identified. This combination is not expected to adversely affect the phenotype prediction. Diagnostic errors can occur due to rare sequence variations. Risk of therapeutic failure or adverse reactions with CYP2D6 substrates may be affected by genetic and non-genetic factors that are not detected by this test. This result does not replace the need for therapeutic drug or clinical monitoring.

Please note the information contained in this report does not contain medication recommendations, and should not be interpreted as recommending any specific medications. Any dosage adjustments or other changes to medications should be evaluated in consultation with a medical provider.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online.

H=High, L=Low, *=Abnormal, C=Critical

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
2D6GENO Specimen	22-234-102450	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
CYP2D6 Genotype	22-234-102450	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
CYP2D6 Phenotype	22-234-102450	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
2D6GENO Interpretation	22-234-102450	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00

END OF CHART

H=High, L=Low, *=Abnormal, C=Critical

Unless otherwise indicated, testing performed at: