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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

Opioid Receptor, mu OPRM1 Genotype, 1 Variant

ARUP test code 2008767

OPRM1 Genotype, Specimen	Whole Blood
OPRM1 Genotype, Interpretation	**GG** *

Indication for testing: predict opioid sensitivity.

Interpretation: Two copies of the OPRM1 G allele (rs1799971) were detected in this sample. Decreased sensitivity to opioid receptor agonists and increased sensitivity to opioid receptor antagonists are predicted. This patient may require higher or more frequent doses of opioid receptor agonists (e.g., morphine) to achieve adequate pain control. He/she may also be more likely to respond to opioid antagonists (e.g., naltrexone) in the treatment of alcohol and/or opioid dependency. This association of OPRM1 and drug sensitivity is not definitive and may be different for individual opioids.

Recommendation: Annotations for clinical application of this OPRM1 allele are available through the Pharmacogenomics Knowledge Base at: https://www.pharmgkb.org/gene/PA31945

This result has been reviewed and approved by Gwen McMillin, Ph.D.

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

BACKGROUND INFORMATION: Opioid Receptor, Mu 1, OPRM1 Genotype, 1 Variant

CHARACTERISTICS: The mu opioid receptor is involved in mediating the clinical response to opioids (agonists and antagonists). OPRM1 c.118A>G has been associated with lower sensitivity to opioid receptor agonists prescribed for pain control (e.g., morphine) and higher sensitivity to opioid receptor antagonists used in the treatment of alcohol and drug dependency (e.g., naltrexone). Risk of side effects to opioids is also associated with this genetic variant.
INHERITANCE: Autosomal co-dominant.
CAUSE: SNP rs1799971; OPRM1 c.118A>G (p.Asn40Asp); also known as G allele alters response to opioids.
G ALLELE FREQUENCY: African Americans 4 percent, Caucasians 14 percent, Hispanics 24 percent.
CLINICAL SENSITIVITY: Drug-dependent.
METHODOLOGY: Polymerase Chain Reaction (PCR) and Fluorescence Monitoring
ANALYTICAL SENSITIVITY AND SPECIFICITY: Greater than 99 percent.
LIMITATIONS: Only the targeted OPRM1 mutation, c.118A>G, will be detected. Diagnostic errors can occur due to rare sequence variations. Risk of therapeutic failure or adverse reactions with opioids 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 or clinical monitoring.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

See Compliance Statement C: www.aruplab.com/CS

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
OPRM1 Genotype, Specimen	18-337-123548	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
OPRM1 Genotype, Interpretation	18-337-123548	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