

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

Physician: Doctor, Example

Patient: Patient, Example

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

Opioid Receptor, mu OPRM1, 1 Variant

ARUP test code 2008767

OPRM1, Specimen whole Blood

OPRM1 Genotype, Interpretation AA

OPRM1 Phenotype, Interpretation See Note

OPRM1, Interpretation See Note

Indication for testing: predict opioid sensitivity.

Interpretation: Two copies of the OPRM1 A allele (rs1799971) were detected in this sample. Increased sensitivity to opioid receptor agonists and decreased sensitivity to opioid receptor antagonists are predicted. This patient may require lower or less frequent doses of opioid receptor agonists (e.g., morphine) to achieve adequate pain control. He/she may also be less 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 [REDACTED]

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

BACKGROUND INFORMATION: Opioid Receptor, Mu OPRM1, 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 codominant.

CAUSE: SNP rs1799971; OPRM1 c.118A>G (p.Asn40Asp), also known as G allele, alters response to opioids.

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 nongenetic factors that are not detected by this test. This result does not replace the need for therapeutic 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 US 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.

EER Opioid Receptor, mu OPRM1

See Note

[REDACTED]

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

VERIFIED/REPORTED DATES

| Procedure | Accession | Collected | Received | Verified/Reported |
|---------------------------------|---------------|------------------|------------------|-------------------|
| OPRM1, Specimen | 23-324-117190 | 00/00/0000 00:00 | 00/00/0000 00:00 | 00/00/0000 00:00 |
| OPRM1 Genotype, Interpretation | 23-324-117190 | 00/00/0000 00:00 | 00/00/0000 00:00 | 00/00/0000 00:00 |
| OPRM1 Phenotype, Interpretation | 23-324-117190 | 00/00/0000 00:00 | 00/00/0000 00:00 | 00/00/0000 00:00 |
| OPRM1, Interpretation | 23-324-117190 | 00/00/0000 00:00 | 00/00/0000 00:00 | 00/00/0000 00:00 |
| EER Opioid Receptor, mu OPRM1 | 23-324-117190 | 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:

ARUP LABORATORIES | 800-522-2787 | aruplab.com
500 Chipeta Way, Salt Lake City, UT 84108-1221
Jonathan R. Genzen, MD, PhD, Laboratory Director

Patient: Patient, Example
ARUP Accession: 23-324-117190
Patient Identifiers: 01234567890ABCD, 012345
Visit Number (FIN): 01234567890ABCD
Page 3 of 3 | Printed: 11/27/2023 2:04:55 PM
4848