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Tracy I. George, MD, Chief Medical Officer

Patient Report

Patient Age/Sex: 33 years Female

Specimen Collected: 14-Jun-22 07:14

OPRM1, 1 Variant **|Received: 14-Jun-22 07:32** **Report/Verified: 20-Jun-22 11:02**

Procedure	Result	Units	Reference Interval
OPRM1,Specimen	Whole Blood		
OPRM1 Genotype,	**AG** *		
Interpretation			
OPRM1 Phenotype,	See Note		
Interpretation			
OPRM1,Interpretation	See Note f1 i1		

Result Footnote

f1: OPRM1, Interpretation

Section 79-1 of New York State Civil Rights Law requires informed consent be obtained from patients (or their legal guardians) prior to pursuing genetic testing. These forms must be kept on file by the ordering physician. Consent forms for genetic testing are available at www.aruplab.com. Incidental findings are not reported unless clinically significant but are available upon request.

Indication for testing: predict opioid sensitivity.

Interpretation: One copy of the OPRM1 A allele and one copy of the G allele (rs1799971) were detected in this sample. Further studies are needed to determine the clinical significance of this genotype; however, it is possible 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 Sherin Shaaban, M.D., Ph.D.

Test Information

i1: OPRM1, Interpretation

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.