

3703 Camino del Rio South 100-A  
 San Diego, CA, 92108  
 619-450-5870 - Phone  
 619-450-6023 - Fax

CLIA# 05D2027247 - Director: David J. Smith, MD

**Patient :** **Acc #:** AL-URI-10151  
 Patient #: Birth:  
 Doctor: Age: 71 years Collection Date: 03/11/2019 11:52  
 Gender: Female Received in Lab: 03/13/2019 11:52

**Drug Adherence Assessment Report**

**Prescribed Medications:** ACETAMINOPHEN (TYLENOL, MAPAP), HYDROCODONE, IBUPROFEN (ADVIL, MOTRIN), TRAMADOL (ULTRAM, CONZIP)

**CONSISTENT RESULTS - REPORTED MEDICATION DETECTED (PARENT DRUG AND/OR METABOLITE)**

REPORTED PRESCRIPTION	FLAG	ANTICIPATED POSITIVE(S)	TEST OUTCOME	DETECTION WINDOW
ACETAMINOPHEN (TYLENOL, MAPAP)	✓	Acetaminophen	Positive	2-3 days (Plasma Half-Life: 2-3 hrs)
HYDROCODONE	⚠	Hydrocodone	Positive	1-4 days (Plasma Half-Life: 3.5-9 hrs)
HYDROCODONE	⚠	Hydromorphone	Negative	1-4 days (Plasma Half-Life: 1.5-4 hrs)
HYDROCODONE	⚠	Norhydrocodone	Positive	1-4 days (Plasma Half-Life: 3.5-9 hrs)
TRAMADOL (ULTRAM, CONZIP)	✓	Tramadol	Positive	0.5-2 days (Plasma Half-Life: 4-8 hrs)
TRAMADOL (ULTRAM, CONZIP)	✓	N-Desmethyl-Tramadol	Positive	0.5-2 days (Plasma Half-Life: 4-10 hrs)
TRAMADOL (ULTRAM, CONZIP)	✓	O-Desmethyl-Tramadol	Positive	0.5-2 days (Plasma Half-Life: 4-10 hrs)

**INCONSISTENT RESULTS - REPORTED MEDICATION NOT DETECTED (NEITHER PARENT DRUG NOR METABOLITE)**

REPORTED PRESCRIPTION	FLAG	ANTICIPATED POSITIVE(S)	TEST OUTCOME	DETECTION WINDOW
N/A		N/A	N/A	N/A

**INCONSISTENT RESULTS - ANALYTE DETECTED BUT NO CORESPONDING PRESCRIPTION REPORTED**

REPORTED PRESCRIPTION	FLAG	ILLICIT	MEASURED RESULT	CUTOFF	TEST OUTCOME	DETECTION WINDOW
Gabapentin	⚠	No	1628.00	50.00	Positive	1-4 days (Plasma Half-Life: 5-7 hrs)
Caffeine	✓	No	43.00	5.00	Positive	1-5 days (Plasma Half-Life: 5-6 hrs)

**SPECIMEN VALIDITY TESTING**

REPORTED PRESCRIPTION	TEST OUTCOME	MEASURED RESULT	UNITS	REFERENCE RANGE	ADDITIONAL MEDICATIONS REPORTED BUT NOT TESTED FOR IN THIS REPORT
pH	Normal	6	pH	5 - 9	IBUPROFEN (ADVIL, MOTRIN)
Specific Gravity	Normal	1.012		1.000 - 1.060	
Glucose	Normal	0	mg/dL	<20 (Max > 500)	
Protein	Abnormal	30	mg/dL	<20 (Max > 500)	
Bilirubin	Normal	0	mg/dL	<1.80 (Max > 4.00)	
Urobilinogen	Normal	0	mg/dL	<1.60 (Max > 4.00)	
Blood	Normal	0	mg/dL	<0.02 (Max > 1.00)	
Ketone	Normal	0	mg/dL	<3 (Max > 80)	
Nitrite	Normal	Negative	mg/dL	0.00 - 1.00 (Max > 1.00)	

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	Gender: Female		

**SPECIMEN VALIDITY TESTING**

REPORTED PRESCRIPTION	TEST OUTCOME	MEASURED RESULT	UNITS	REFERENCE RANGE
Leukocytes	Normal	0	WBCs/uL	15 - 40 (Max > 500)
Ascorbic Acid	Normal	0	mg/dL	<17 (Max > 40)
Clarity	Abnormal	Slightly-Cloudy		Clear/ Slightly-Cloudy/ Cloudy/ Turbid
Color	Normal	Yellow		Yellow/ Amber/ Red/ Blue/ Colorless/ Straw

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### ADDITIONAL DETECTED ANALYTES




GABAPENTIN (NEURONTIN), CAFFEINE (CAFCIT, ALERT)

#### Drug-Drug Interactions

 **GABAPENTIN (NEURONTIN) & HYDROCODONE** **MODERATE**

Central nervous system- and/or respiratory-depressant effects may be additively or synergistically increased in patients taking multiple drugs that cause these effects, especially in elderly or debilitated patients.

#### SYMBOL LEGEND

-  Highly elevated risk for indicated condition or adverse drug reaction. Medication can be prescribed with monitoring; alternative therapy may be needed.
-  Moderately elevated risk for indicated condition or adverse drug reaction. Medication can be prescribed with monitoring; therapy adjustment may be needed.
-  Typical risk for indicated condition or adverse drug reaction. Medication can be prescribed according to standard dosing guidelines.

**MODERATE** Drug interactions of moderate severity. The clinician should assess the patient's characteristics and take action as needed.

**SERIOUS** Severe drug interaction or contraindicated drug combination which may produce serious consequences in most patients. This drug combination generally should not be dispensed or administered to the same patient. Action is required to reduce risk of severe adverse interaction.

Test Name	Outcome	Measured Result	Cutoff	Units	Illicit?	Status
<b>1. ANALGESICS / OPIATES</b>						
Acetaminophen	Positive	>5000.00	50.00	ng/mL	No	Consistent Result
Buprenorphine	Negative	0	10.00	ng/mL	No	Consistent Result
Codeine	Negative	0	50.00	ng/mL	No	Consistent Result
EDDP	Negative	0	5.00	ng/mL	No	Consistent Result
Fentanyl	Negative	0	10.00	ng/mL	No	Consistent Result
Hydrocodone	Positive	752.00	5.00	ng/mL	No	Consistent Result
Hydromorphone	Negative	0	5.00	ng/mL	No	Consistent Result
Levorphanol	Negative	0	5.00	ng/mL	No	Consistent Result
Meperidine	Negative	0	5.00	ng/mL	No	Consistent Result
Methadone	Negative	0	5.00	ng/mL	No	Consistent Result
Morphine	Negative	0	5.00	ng/mL	No	Consistent Result
N-Desmethyl-Tramadol	Positive	3016.0	10.0	ng/mL	No	Consistent Result
Norbuprenorphine	Negative	0	50.00	ng/mL	No	Consistent Result
Norfentanyl	Negative	0	10.00	ng/mL	No	Consistent Result

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Test Name	Outcome	Measured Result	Cutoff	Units	Illicit?	Status
Norhydrocodone	Positive	1041.00	5.00	ng/mL	No	Consistent Result
Noroxycodone	Negative	0	5.00	ng/mL	No	Consistent Result
Norpropoxyphene	Negative	0	125.00	ng/mL	No	Consistent Result
O-Desmethyl-Tramadol	Positive	3381.00	5.00	ng/mL	No	Consistent Result
Oxycodone	Negative	0	5.00	ng/mL	No	Consistent Result
Oxymorphone	Negative	0	5.00	ng/mL	No	Consistent Result
Propoxyphene	Negative	0	5.00	ng/mL	No	Consistent Result
Tapentadol	Negative	0	10.00	ng/mL	No	Consistent Result
Tramadol	Positive	>5000.00	5.00	ng/mL	No	Consistent Result
<b>2. BENZODIAZEPINES</b>						
7-Aminoclonazepam	Negative	0	10.00	ng/mL	No	Consistent Result
Alpha-hydroxyalprazolam	Negative	0	5.00	ng/mL	No	Consistent Result
Alprazolam	Negative	0	5.00	ng/mL	No	Consistent Result
Clonazepam	Negative	0	5.00	ng/mL	No	Consistent Result
Diazepam	Negative	0	50.00	ng/mL	No	Consistent Result
Lorazepam	Negative	0	125.00	ng/mL	No	Consistent Result
Nordiazepam	Negative	0	10.00	ng/mL	No	Consistent Result
Oxazepam	Negative	0	10.00	ng/mL	No	Consistent Result
Temazepam	Negative	0	10.00	ng/mL	No	Consistent Result
<b>3. ANTI-PSYCHOTICS</b>						
Aripiprazole	Negative	0	5.00	ng/mL	No	Consistent Result
Chlorpromazine	Negative	0	5.00	ng/mL	No	Consistent Result
Clozapine	Negative	0	10.00	ng/mL	No	Consistent Result
Clozapine_N_oxide	Negative	0	50.00	ng/mL	No	Consistent Result
Fluphenazine	Negative	0	5.00	ng/mL	No	Consistent Result
Quetiapine	Negative	0	10.00	ng/mL	No	Consistent Result
Thioridazine	Negative	0	5.00	ng/mL	No	Consistent Result
Ziprasidone	Negative	0	50.00	ng/mL	No	Consistent Result

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Test Name	Outcome	Measured Result	Cutoff	Units	Illicit?	Status
<b>4. ANTI-DEPRESSANTS / SSRI / SNRI / TCA</b>						
Amitriptyline	Negative	0	10.00	ng/mL	No	Consistent Result
Bupropion	Negative	0	5.00	ng/mL	No	Consistent Result
Citalopram	Negative	0	5.00	ng/mL	No	Consistent Result
Doxepin	Negative	0	5.00	ng/mL	No	Consistent Result
Duloxetine	Negative	0	50.00	ng/mL	No	Consistent Result
Fluoxetine	Negative	0	50.00	ng/mL	No	Consistent Result
Mirtazapine	Negative	0	5.00	ng/mL	No	Consistent Result
O-Desmethyl-Venlafaxine	Negative	0	5.00	ng/mL	No	Consistent Result
Paroxetine	Negative	0	50.00	ng/mL	No	Consistent Result
Sertraline	Negative	0	5.00	ng/mL	No	Consistent Result
Trazodone	Negative	0	5.00	ng/mL	No	Consistent Result
Venlafaxine	Negative	0	5.00	ng/mL	No	Consistent Result
<b>5. DEPRESSANTS</b>						
Zolpidem	Negative	0	5.00	ng/mL	No	Consistent Result
Zopiclone-N-Oxide	Negative	0	250.00	ng/mL	No	Consistent Result
<b>6. ANTI-CONVULSANTS</b>						
10-11-Dihydro-10-Hydroxycarbamazepine	Negative	0	10.00	ng/mL	No	Consistent Result
Carbamazepine	Negative	0	5.00	ng/mL	No	Consistent Result
Gabapentin	Positive	1628.00	50.00	ng/mL	No	Inconsistent Result
Lamotrigine	Negative	0	50.00	ng/mL	No	Consistent Result
Levetiracetam	Negative	0	10.00	ng/mL	No	Consistent Result
Oxcarbazepine	Negative	0	5.00	ng/mL	No	Consistent Result
Pregabalin	Negative	0	10.00	ng/mL	No	Consistent Result
Tiagabine	Negative	0	10.00	ng/mL	No	Consistent Result
Zonisamide	Negative	0	125.00	ng/mL	No	Consistent Result
<b>7. MUSCLE RELAXANTS</b>						
Carisoprodol	Negative	0	10.00	ng/mL	No	Consistent Result
Cyclobenzaprine	Negative	0	10.00	ng/mL	No	Consistent Result
Meprobamate	Negative	0	50.00	ng/mL	No	Consistent Result
<b>8. STIMULANTS / ADHD</b>						
Amphetamine	Negative	0	10.00	ng/mL	No	Consistent Result
Caffeine	Positive	43.00	5.00	ng/mL	No	Inconsistent Result
Methylphenidate	Negative	0	5.00	ng/mL	No	Consistent Result
Ritalinic Acid	Negative	0	5.00	ng/mL	No	Consistent Result
<b>9. ANTIDOTES</b>						
Naloxone	Negative	0	5.00	ng/mL	No	Consistent Result

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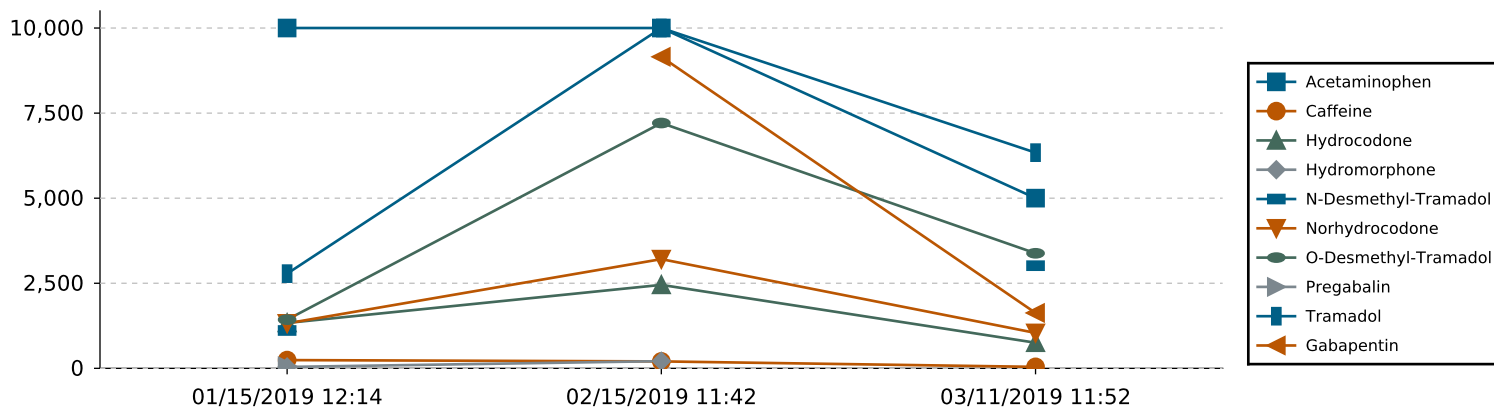
Test Name	Outcome	Measured Result	Cutoff	Units	Illicit?	Status
<b>10. ILLICITS</b>						
AM2201 (Spice Cannabinoid)	Negative	0	10.00	ng/mL	Yes	Consistent Result
Benzoyllecgonine	Negative	0	50.00	ng/mL	Yes	Consistent Result
Cocaine	Negative	0	5.00	ng/mL	Yes	Consistent Result
HU-210 (Spice Cannabinoid)	Negative	0	125.00	ng/mL	Yes	Consistent Result
JWH-019 (Spice Cannabinoid)	Negative	0	125.00	ng/mL	Yes	Consistent Result
JWH-073 4-Hydroxybutyl (Spice Cannabinoid)	Negative	0	10.00	ng/mL	Yes	Consistent Result
JWH-081 (Spice Cannabinoid)	Negative	0	125.00	ng/mL	Yes	Consistent Result
JWH-122 (Spice Cannabinoid)	Negative	0	125.00	ng/mL	Yes	Consistent Result
JWH-18-5-pentanoic acid (Spice Cannabinoid)	Negative	0	10.00	ng/mL	Yes	Consistent Result
JWH-18-5-pentanyl (Spice Cannabinoid)	Negative	0	5.00	ng/mL	Yes	Consistent Result
JWH-250-5OH-pentanyl (Spice Cannabinoid)	Negative	0	50.00	ng/mL	Yes	Consistent Result
MDA	Negative	0	50.00	ng/mL	Yes	Consistent Result
MDEA	Negative	0	10.00	ng/mL	Yes	Consistent Result
MDMA	Negative	0	50.00	ng/mL	Yes	Consistent Result
Methamphetamine	Negative	0	5.00	ng/mL	Yes	Consistent Result
PCP	Negative	0	5.00	ng/mL	Yes	Consistent Result
THC (Marijuana metabolite)	Negative	0	10.00	ng/mL	Yes	Consistent Result

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**Historical Result Data**



**Comments:**

This test was performed at Alcala Testing and Analysis Services (CLIA# 05D2027247). Dried Blood Spot specimens are analyzed using CleanAssure™ (patent pending) technology. In contrast to urine, in dried blood spot specimens (CleanAssure™ DBS) detection may be reduced (compound-specific). E.g. Morphine and Fentanyl exhibiting short plasma half-lives may require a follow up test with a urine specimen. In dried blood spot specimens parent drugs are often detected in higher concentrations than their metabolites commonly observed in urine specimens.

**Morphine** is a commonly detected metabolite among patients taking **Codeine**. **Hydromorphone** is a commonly detected metabolite among patients taking Hydrocodone and Morphine.

An active molecule of OPANA, **Oxymorphone** is a commonly detected metabolite among patients taking Oxycodone. **OPANA (Oxymorphone) will not metabolize to Noroxycodone or Oxycodone.**

**Oxazepam** is a commonly detected metabolite among patients taking **Diazepam, Nor-Diazepam or Temazepam**. Temazepam and Nor-Diazepam are commonly detected metabolites among patients taking **Diazepam**. **Alprazolam, Alpha-OH-Alprazolam, Clonazepam, and 7-amino-Clonazepam** are not detected in patients taking Diazepam, Nor-diazepam, Lorazepam, Oxazepam, and Temazepam.

**Meprobamate** is a commonly detected metabolite among patients taking **Carisoprodol** and its presence is consistent with the use of Carisoprodol.

**Nortrimipramine**, the metabolite of **Trimipramine**, may cause a false positive result for **Imipramine** in this assay. Trimipramine (brand name **Surmontil**) and its metabolite are not part of this assay. Trimipramine will be differentiated from other tricyclics, but its metabolite may cause interference with Imipramine.

An active (drug) or metabolite may be listed as a Negative Outcome, however, if either the active or any metabolite(s) are present (Positive), then the result is listed as Consistent for that reported prescribed medication.

In case of patients consuming HYDROCODONE-containing medications: **Norhydrocodone** is the major metabolite of **Hydrocodone** indicating presence of Hydrocodone in **urine**. While **Hydrocodone** can also be metabolized to **Hydromorphone**, identification of just **Hydromorphone** by itself is not a confirmation of Hydrocodone being present, since recent studies suggest that **urine specimens** of patients taking Hydrocodone always show presence of Hydrocodone or Norhydrocodone in combination with Hydromorphone.

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**FOR PATIENT RESULTS INDICATING JUST THE PRESENCE OF HYDROMORPHONE: THIS MAY BE DERIVED FROM MORPHINE-CONTAINING PRESCRIPTION DRUGS OR HYDROMORPHONE-ONLY PRESCRIPTIONS (FOR EXAMPLE, DILAUDID).**

Further reading: Valtier,S. and Bebarata,V.S. (2012) Excretion profile of hydrocodone, hydromorphone and norhydrocodone in urine following single dose administration of hydrocodone to healthy volunteers. J. Anal. Toxicol., 36, 507–14. and Barakat,N.H., Atayee,R.S., Best,B.M. and Ma,J.D. (2014) Observations of Urinary Hydrocodone and Metabolite Distributions in Pain Patients. J. Anal. Toxicol., 38, 129–134.)

**REFERENCES for DRUG-DRUG-INTERACTIONS are available upon request.**

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**Notes:**

Reviewed By: \_\_\_\_\_

Date: **03/14/2019 20:23** \_\_\_\_\_