

# Best Practices in Laboratory Testing

May 2014

## Information for Providers

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### **Revised Urine Drug Screen Test Menu Effective mid-June 2014**

To better address the complexities of drug screening for different patient groups, Allina Health Laboratory has revised the urine drug screen test menu, effective mid-June. This information does not include maternal/infant drug screening, which has separate requirements.

The revised test menu consists of 4 drug screen panels:

1. Urine drugs of abuse presumptive screen, LAB597. A preliminary screen with limited clinical utility.
2. Limited Compliance Drug Monitor , LAB12507 - NEW - Optimized for monitoring patients in chemical dependency programs.
3. Comprehensive Compliance Drug Monitor, LAB8742. Comprehensive drug screen. Preferred test for monitoring patients in pain management programs.
4. Synthetic cannabinoids qualitative screen, LAB12396. Detects "bath salts, K2, Spice".

See following pages for comparison charts, lists of drugs detected, and sample reports.

Important: Drug screening at Allina Health Laboratory cannot be used for any legal purpose, with the exception of certain maternal/infant specimens that are collected through special procedures.

#### Phone

612-863-4678  
800-281-4379

#### Fax

612-863-4067

**Urine drugs of abuse presumptive screen, LAB597 -  
turnaround time stat (1 hour from arrival in lab) or routine (same day).**

Allina Health Laboratory receives many questions about the reliability and interpretation of this drug screen. This drug screen provides only a preliminary presumptive result and has limited clinical utility. Due to many cross reactions inherent in the rapid screen technology, this screen is not preferred for chemical dependency or pain management monitoring. When this test is ordered, consideration and professional judgment must be applied in evaluating a preliminary positive result. Confirmation testing should be ordered on any unexpected presumptive positive result; it is important to understand that many of these results will NOT confirm on further analysis by chromatography and mass spectrometry. For example, only 40-50% of screening positives for opiates or amphetamines will confirm.

Important points to remember about this drug screen (and all rapid presumptive drug screens and cup tests):

1. This screen cannot distinguish between abused drugs and many common prescribed and over-the-counter medications.
2. Certain foods or legitimate medications may interfere with screening tests and cause false positive results.
3. It is not possible to predict all interferences and false positive reactions because of individual differences in medications, drug metabolism, and diet.
4. The number of screening positives that confirm on further testing is as low as 40%, depending on the drug and patient population. Do not assume that a presumptive positive result is "real". Order confirmation testing if the result is unexpected.

**Limited Compliance Drug Screen, LAB 12507, \*NEW\* -  
turnaround time 3-5 days.**

This screen is the preferred test for monitoring patients in chemical dependency programs. The screen includes alcohol metabolites and important drugs of abuse. Confirmations are automatically performed for positives except for THC (a separate order would be required if confirmation is needed.)

**Comprehensive Compliance Drug Monitor, LAB8742 -  
turnaround time 5-7 days.**

This screen is comprehensive and preferred for monitoring patients in pain management programs and other medical indications for nonemergency comprehensive screening. Results are definitive and confirmed. The screen includes over 170 drugs in 22 classes. Quantitative results (normalized to creatinine) are reported for many drugs.

**Synthetic Cannabinoid (K2, Spice, bath salts) Qualitative Screen, Lab12396 -  
turnaround time 5-7 days.**

Synthetic cannabinoids such as K2, Spice, and "bath salts" require special technology for detection and are not included in the other screening panels.

**ALLINA HEALTH LABORATORY - REVISED URINE DRUG SCREENING TEST MENU**  
EFFECTIVE June 13, 2014

	<b>In-House Rapid Presumptive Screen LAB597</b> presumptive screen only	<b>Limited Compliance Screen *NEW* LAB12507</b> for monitoring chemical dependency patients	<b>Comprehensive Drug Screen &amp; Compliance Monitor LAB8742</b> (aka ToxAssure or MedWatch) Pain compliance and non- emergency comprehensive drug screening	<b>Synthetic Canna- binoid Qualitative Screen LAB12396</b> K2, Spice, "bath salts"
<b>TAT</b>	ROUTINE (same day) or STAT (1 hour from receipt in laboratory)	ROUTINE only. Cannot order stat. 3-5 days.	ROUTINE only. Cannot order stat. 5-7 days	ROUTINE only. Cannot order stat. 3-5 days.
<b>Performing laboratory</b>	Allina Health Laboratory	MedTox	MedTox	MedTox
<b>Description</b>	Clinical utility is limited. Should be ordered only by providers who understand the limi- tations of antibody-based drug screens. Positive results must be interpreted with caution. Screening results are pre- liminary only; many screening positives will NOT confirm on further testing. Confirmation testing should be ordered for any unexpected positive (or negative) results.	Routine screening of patients in the chemical dependency program.	Routine comprehensive drug screening for compliance monitoring in pain management or other medical indications where comprehensive screening is needed.	Detection of synthetic cannabinoids
<b>Automatic confirmations</b>	NONE. Confirmations are NOT automatically per- formed and must be or- dered separately. 5-7 day turnaround time for confirmations.	Included and auto- matically performed, except THC. (Confirmation for THC must be specifically ordered if needed.)	Unnecessary, results are comprehensive and defini- tive.	Results are con- firmed.
<b>Reporting</b>	Qualitative results (presumptive positive/not detected)	Qualitative results (positive/negative).	Qualitative (pos/neg) and Quantitative (value normal- ized to creatinine for many drugs)	Qualitative. (For quantitative results, order LAB12521)

**COMPARISON CHART: GENERAL DRUG SCREEN PANELS**  
**AVAILABLE FROM ALLINA HEALTH LABORATORY**  
**Effective June 13, 2014**

	Drugs of Abuse LAB597	NEW Limited Compliance Screen LAB12507	Comprehensive Compliance Drug Screen (ToxAssure) LAB8742	
DRUG	DETECTION THRESHHOLD (ng/ml)		DRUG CLASS	DRUGS REPORTED
Ethyl Glucuronide	Not included	250	*Opiates:	codeine, hydrocodone, hydromorphone, morphine, dihydrocodeine
Ethyl Sulfate	Not included	100	*Oxycodones:	oxycodone, oxymorphone
Amphetamines	500	500	*Buprenorphine:	buprenorphine, norbuprenorphine
Methamphetamine	500	No separate test, metabolizes to amphetamine	*Methadone:	methadone, EDDP
Barbiturates	200	200	*Amphetamines:	methamphetamine, amphetamine, methylenedioxymethamphetamine (MDMA), methylenedioxyamphetamine (MDA), methylenedioxyethylamphetamine (MDEA)
Benzodiazepines	150	200	*Cocaine MTB:	cocaine, benzoylecgonine, cocaethylene
Cocaine Metabolite	50	150	*Benzodiazepines:	alprazolam, alpha-hydroxyalprazolam, chlordiazepoxide (as metabolites), clonazepam, 7-aminoclonazepam, clonazepam (as metabolite), desalkylflurazepam, diazepam, desmethyldiazepam, lorazepam, midazolam, oxazepam, temazepam, alpha-hydroxytriazolam
Fentanyl	Not included	1	Other Hallucinogens:	ketamine, phencyclidine
"Opiates" includes:	100	300	*Cannabinoids/THC:	$\Delta^9$ -carboxy-tetrahydrocannabinol (carboxy-THC)
<i>Codeine</i>	50	300	Antidepressants:	amitriptyline, amoxapine, 8-hydroxyamoxapine, bupropion, citalopram, desmethylcitalopram, escitalopram, clomipramine, desmethylclomipramine, desipramine, desvenlafaxine, doxepin, desmethyldoxepin, duloxetine, fluoxetine, norfluoxetine, fluvoxamine, imipramine, maprotiline, mirtazapine, nefazodone, nortriptyline, protriptyline, sertraline, desmethylsertraline, trazodone, trimipramine, venlafaxine, desmethylvenlafaxine
<i>Morphine</i>	100	300	Barbiturates:	amobarbital, barbital, butabarbital, butalbital, mephobarbital, pentobarbital, phenobarbital, secobarbital, thiopental
<i>Heroin</i>	100	300	*Ethyl Alcohol:	ethyl alcohol

	Drugs of Abuse LAB597	Limited Compliance Screen LAB12507	Comprehensive Compliance Drug Screen (ToxAssure) LAB8742	
DRUG	DETECTION THRESHHOLD (ng/ml)		DRUG CLASS	DRUGS REPORTED
<i>Hydrocodone</i>	400	300	<b>Sympathomimetics:</b>	ephedrine , methcathinone, methylphenidate, phenmetrazine, phentermine, phenylpropanolamine, pseudoephedrine
<i>Hydromorphone</i>	800	300	<b>*Fentanyl and Analogs:</b>	fentanyl, norfentanyl, sufentanil, alfentanil
<i>Dihydrocodeine</i>	100	300	<b>*Other Opiodes:</b>	butorphanol, levorphanol, meperidine, normeperidine, nalbuphine, naltrexone, pentazocine, propoxyphene, norpropoxyphene, tapentadol, tramadol, O-desmethyltramadol, N-desmethyltramadol,
<b>6MAM (Heroin-Specific)</b>	Not Included	10	<b>Anticonvulsants:</b>	carbamazepine, gabapentin, lamotrigine, levetiracetam, oxcarbazepine MHD, phenytoin, pregabalin, primidone, rufinamide, tiagabine, topiramate, zonisamide
<b>Oxycodone</b>	100	100	<b>Muscle Relaxants:</b>	baclofen, carisoprodol, cyclobenzaprine, meprobamate, metaxalone, methocarbamol, orphenadrine, tizanidine
<b>PCP (Phencyclidine)</b>	25	Not included	<b>Other Sedative/ Hypnotics:</b>	eszopiclone, zaleplon, zopiclone, zolpidem
<b>THC Metabolite</b>	50	50	<b>Antidepressants:</b>	amitriptyline, amoxapine, 8-hydroxyamoxapine, bupropion, citalopram, desmethylcitalopram, escitalopram, clomipramine, desmethylclomipramine, desipramine, desvenlafaxine, doxepin, desmethyldoxepin, duloxetine, fluoxetine, norfluoxetine, fluvoxamine, imipramine, maprotiline, mirtazapine, nefazodone, nortriptyline, protriptyline, sertraline, desmethylsertraline, trazodone, trimipramine, venlafaxine, desmethylvenlafaxine
<b>Methadone</b>	200	300	<b>Antipsychotics:</b>	aripiprazole, chlorpromazine, clozapine, norclozapine, fluphenazine, haloperidol, loxapine, 8-hydroxyloxapine, mesoridazine, molindone, olanzapine, perphenazine, pimozide, prochlorperazine, quetiapine, risperidone, thioridazine, thiothixene, trifluoperazine, ziprasidone

	Drugs of Abuse LAB597	Limited Compliance Screen LAB12507	Comprehensive Compliance Drug Screen (ToxAssure) LAB8742	
DRUG	DETECTION THRESHHOLD (ng/ml)		DRUG CLASS	DRUGS REPORTED
Propoxyphene	Not included	300	Analgesics/NSAIDS	acetaminophen, ibuprofen, ketoprofen, naproxen, oxap- rozin, salicylate
Buprenorphine	10	5	Antihistamines:	brompheniramine, chlor- pheniramine, diphenhydra- mine, doxylamine, hy- droxyzine, promethazine, pyrilamine, triprolidine
Tramadol	Not included	200	Local Anesthetics:	bupivacaine, lidocaine, mepivacaine, procaine
			Miscellaneous:	atenolol, benztropine, caf- feine (large amounts), clonidine, dextrome- thorphan, dextrorphan, dilti- azem, guaifenesin, metoprolol, propranolol, theophylline, verapamil

# **SAMPLE REPORT IN-HOUSE RAPID PRESUMPTIVE SCREEN**

## **DRUG ABUSE SCREEN RAPID URINE INHOUSE**

Collected:  
Resulting lab: ABBOTT NORTHWESTERN HOSPITAL  
Reference range: (Not Detected)  
Value: Not Detected

### **Results**



### **DRUG ABUSE SCREEN RAPID URINE INHOUSE**

#### **Specimen Information**

Collection Date and Time

#### **Component Results**

Component	Value	Flag	Range & Units	Status
THC METABOLITES,QUAL	Not Detected		(Not Detected)	Final
PCP,QUAL	Not Detected		(Not Detected)	Final
COCAINE,QUAL	Not Detected		(Not Detected)	Final
METHAMPHETAMINE, QUALITATIVE	Not Detected		(Not Detected)	Final
OPIATES,QUAL	Not Detected		(Not Detected)	Final
AMPHETAMINE, QUALITATIVE	Not Detected		(Not Detected)	Final
BENZODIAZEPINES,QUAL		(A)	(Not Detected)	Final
Presumptive Positive- Unconfirmed Result				
TRICYCLICS,QUAL	Not Detected		(Not Detected)	Final
METHADONE, QUALITATIVE	Not Detected		(Not Detected)	Final
BARBITURATES,QUAL	Not Detected		(Not Detected)	Final
OXYCODONE, QUALITATIVE	Not Detected		(Not Detected)	Final
BUPRENORPHINE, QUALITATIVE	Not Detected		(Not Detected)	Final

#### **Result Narrative**

Please Note:

This is a screening test only, all results are Unconfirmed and should be used for medical purposes only. Unconfirmed results must not be used for non-medical purposes (e.g., employment testing, legal testing). Suggest analyte specific confirmation for all presumptive positive results. Specimens will be held for 24 hours if additional testing is needed.

The following threshold concentrations are used for this analysis:

Drug	Screening Threshold
Buprenorphine	10 ng/mL
**PCP	25 ng/mL
THC Metabolites	50 ng/mL
*Opiates	100 ng/mL
Oxycodone	100 ng/mL
Cocaine	150 ng/mL
Benzodiazepines	150 ng/mL
Methadone	200 ng/mL
Barbiturates	200 ng/mL
Tricyclic Antidepressants	300 ng/mL
Amphetamines	500 ng/mL
Methamphetamines	500 ng/mL

\*Includes related compounds:

Codeine	50 ng/mL
Heroin	100 ng/mL
Morphine	100 ng/mL
Hydrocodone	400 ng/mL
Hydromorphone	800 ng/mL

\*\*Venlafaxine (Effexor) is a known cross reactant in the PCP assay. If clinically indicated, order PCP confirmation.

<b>EXAMPLE REPORTS</b> MEDTOX LABORATORIES, INC. 402 W. COUNTY ROAD D NEW BRIDGHTON, MN 55112  Account #: 5 Ordered By:  Request #: 4630 Accession #: S1004630		<b>SAMPLE REPORT</b> <b>LIMITED COMPLIANCE SCREEN</b> (optimized for chemical dependency monitoring)		<b>Patient Test Order Information</b> Name: TEST, 4630 Patient ID: Patient Phone: DOB: Age: Sex:  Collected: 01/06/2014 Received: 01/06/2014 4:40 PM Reported: 01/06/2014 4:43 PM  Report Status: FINAL	
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Test	Result	Flag	Units	Reference Range
<b>DRUGS OF ABUSE WITH FENTANYL</b>				
<b>DRUGS OF ABUSE SCREEN</b>				
ETHYL GLUCURONIDE	+++ POSITIVE+++		ng/ml	
AMPHETAMINES	+++ POSITIVE+++		ng/ml	
BARBITURATES	+++ POSITIVE+++		ng/ml	
BENZODIAZEPINES	+++ POSITIVE+++		ng/ml	
COCAINE METABOLITE	+++ POSITIVE+++		ng/ml	
OPIATES	+++ POSITIVE+++		ng/ml	
6-ACETYLMORPHINE	+++ POSITIVE+++		ng/ml	
OXYCODONE	+++ POSITIVE+++		ng/ml	
MARIJUANA METABOLITE (THC)	+++ POSITIVE+++		ng/ml	
METHADONE	+++ POSITIVE+++		ng/ml	
PROPOXYPHENE	+++ POSITIVE+++		ng/ml	
BUPRENORPHINE	POSITIVE		ng/ml	
TRAMADOL	+++ POSITIVE+++		ng/ml	
CREATININE	150.0		mg/dL	> = 20
URINE pH	5.0			4.5 - 8.9
NITRATES	+++ POSITIVE+++		ug/mL	< 200

THIS SPECIMEN WAS SCREENED BY IMMUNOASSAY. ANY POSITIVE RESULT WAS CONFIRMED BY GAS CHROMATOGRAPHY WITH MASS SPECTROMETRY (GC/MS) OR LIQUID CHROMATOGRAPHY WITH TANDEN MASS SPECTROMETRY (LC/MS/MS). THE FOLLOWING THRESHOLD CONCENTRATIONS WERE USED FOR THIS ANALYSIS:

DRUG	SCREENING THRESHOLD	CONFIRMATION THRESHOLD
ETHYL GLUCURONIDE	500 NG/ML	
ETHYL GLUCURONIDE		250 NG/ML
ETHYL SULFATE		100 NG/ML
AMPHETAMINES	500 NG/ML	250 NG/ML
BARBITURATES	200 NG/ML	200 NG/ML
BENZODIAZEPINES	200 NG/ML	200 NG/ML
COCAINE METABOLITE	150 NG/ML	100 NG/ML
OPIATES	300 NG/ML	
CODINE		300 NG/ML
MORPHINE		300 NG/ML
HYDROCODONE		300 NG/ML
HYDROMORPHONE		300 NG/ML
DIDYMOCODEINE		300 NG/ML
SNM	10 NG/ML	10 NG/ML
OXYCODONE	100 NG/ML	100 NG/ML
MARIJUANA METABOLITE	50 NG/ML	15 NG/ML
METHADONE	300 NG/ML	300 NG/ML
PROPOXYPHENE	300 NG/ML	300 NG/ML
BUPRENORPHINE	5 NG/ML	5 NG/ML
TRAMADOL	200 NG/ML	100 NG/ML

ALTERNATIVE EXPLANATIONS SHOULD BE EXPLORED FOR ANY POSITIVE FINDINGS.

PLEASE NOTE THAT INCIDENTAL EXPOSURE TO ALCOHOL MAY RESULT IN DETECTABLE LEVELS OF ETG AND/OR ETS. ETG/ETS RESULTS SHOULD BE

Name: TEST,4530		Collected: 01/05/2014		
Requisition #: 4530		Received: 01/05/2014		4:40 PM
Accession #: S100+4530		Reported: 01/05/2014		4:43 PM
Test	Result	Flag	Units	Reference Range
INTERPRETED IN THE CONTEXT OF ALL AVAILABLE CLINICAL AND BEHAVIORAL INFORMATION.				
REFERENCE: SAMHSA ADVISORY, SPRING 2012 VOLUME 11, ISSUE 2				
FENTANYL ANALYSIS, URINE				
FENTANYL	++POSITIVE++			
CARBOXY-THC, GC/MS CONFIRMATION				
CARBOXY-THC	356		ng/ml	
6-ACETYLMORPHINE, GC/MS CONFIRMATION				
6-ACETYLMORPHINE	8		ng/ml	
METHADONE, GC/MS CONFIRMATION				
METHADONE	352		ng/ml	
METHADONE METABOLITE (EDDP)	353		ng/ml	
PROPOXYPHENE, GC/MS CONFIRMATION				
PROPOXYPHENE	356		ng/ml	
NORPROPOXYPHENE	357		ng/ml	
BARBITURATES, GC/MS CONFIRMATION				
AMOBARBITAL	201		ng/ml	
PENTOBARBITAL	202		ng/ml	
SECOBARBITAL	203		ng/ml	
BUTALBITAL	204		ng/ml	
BUTABARBITAL	205		ng/ml	
PHENOBARBITAL	206		ng/ml	
FENTANYL CONFIRMATION, URINE				
FENTANYL, URINE	3580		ng/ml	
This screen was screened by immunoassay. Any positive result was confirmed by Liquid Chromatography with Tandem Mass Spectrometry (LC/MS/MS). The following threshold concentrations are used for this analysis:				
Drug	Screening Threshold	Confirmation Threshold		
Fentanyl	1.0 ng/mL	0.5 ng/mL		
BENZYLCOCAINE, GC/MS CONFIRMATION				
BENZYLCOCAINE	213		ng/ml	
BUPRENORPHINE CONFIRMATION				
BUPRENORPHINE	6		ng/ml	
NORBUPRENORPHINE	7		ng/ml	
EXPANDED OPIATE CONFIRMATION				
CODEINE	351			
MORPHINE	352			
HYDROCODONE	353			
HYDROMORPHONE	354			
DIHYDROCODEINE	355		ng/ml	
OXYCODONE CONFIRMATION				
OXYCODONE	354		ng/ml	
OXYMORPHONE	355		ng/ml	
AMPHETAMINES, GC/MS CONFIRMATION				

Name: TEST,4530		Collected: 01/06/2014		
Requisition #: 4530		Received: 01/06/2014		4:40 PM
Accession #: S1004530		Reported: 01/06/2014		4:43 PM
Test	Result	Flag	Units	Reference Range
AMPHETAMINE	350		ng/ml	
METHAMPHETAMINE	351		ng/ml	
TRAMADOL CONFIRMATION				
TRAMADOL	101		ng/ml	
DESMETHYLTRAMADOL	102		ng/ml	
BENZODIAZEPINE CONFIRMATION, UR				
ALPRAZOLAM	207		ng/ml	
ALPHA-HYDROXYALPRAZOLAM	208		ng/ml	
DESMETHYLDIAZEPAM	209		ng/ml	
OXAZEPAM	210		ng/ml	
TEMAZEPAM	211		ng/ml	
LORAZEPAM	212		ng/ml	
QUANTITATIVE CONFIRMATION OF ANALYTES IS PERFORMED BY LC/MS/MS (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY/TANDEN MASS SPECTROMETRY) RESULTS ARE REPORTED TO 200 ng/ml FOR THE FOLLOWING DRUGS:				
DESMETHYLDIAZEPAM, OXAZEPAM, TENAZEPAM, LORAZEPAM ALPRAZOLAM AND METABOLITE (ALPHA-HYDROXYALPRAZOLAM)				

Name: TEST,4530		Collected:	01/06/2014	
Requisition #: 4530		Received:	01/06/2014 4:40 PM	
Accession #: S1004530		Reported:	01/06/2014 4:43 PM	
Test	Result	Flag	Units	Threshold
ETHYL GLUCURONIDE	250		ng/mL	
ETHYL SULFATE	101		ng/mL	



402 West County Road D  
Saint Paul, MN 55112  
877-474-5767

Jennifer A. Collins, Ph. D.  
Karia Walker, Pharm. D.  
Mark G. Catlin, M. D.

<b>ALLINA MEDICAL LABORATORIES</b> 2800 10TH AVE SOUTH SUITE 2000 MINNEAPOLIS, MN 55407  Account #: 1052 Ordered By: HESS, TODD  Requisition #: 59422000 Accession #: F4933544	<b>SAMPLE REPORT COMPREHENSIVE DRUG COMPLIANCE MONITOR (aka ToxAssure, Medwatch)</b>	<b>Patient Test Order Information</b>  Name: Patient ID: Patient Phone: DOB: Sex:  Collected: Received: Reported:  Report Status: <b>FINAL</b>
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**REPORT SUMMARY**

Test	Result	Flag	Units	Threshold
<b>COMPLIANCE DRUG ANALYSIS, URINE, WITH MED REPORT</b>				
Creatinine	48		mg/dL	
<b>Drugs Present</b>				
Lorazepam	3828		ng/mg creat	
Source of lorazepam is a scheduled prescription medication.				
Hydrocodone	1141		ng/mg creat	
Hydromorphone	404		ng/mg creat	
Dihydrocodeine	576		ng/mg creat	
Norhydrocodone	3202		ng/mg creat	
Sources of hydrocodone include scheduled prescription medications. Hydromorphone, dihydrocodeine and norhydrocodone are expected metabolites of hydrocodone.				
Oxycodone	5314		ng/mg creat	
Oxymorphone	3018		ng/mg creat	
Noroxycodone	23331		ng/mg creat	
Noroxymorphone	3712		ng/mg creat	
Sources of oxycodone include scheduled prescription medications. Oxymorphone, noroxycodone and noroxymorphone are expected metabolites of oxycodone.				
Methadone	3036		ng/mg creat	
EMMP (Methadone Mib)	5351		ng/mg creat	
Sources of methadone include scheduled prescription medications. EMMP is an expected metabolite of methadone.				
Tramadol	PRESENT			
O-Desmethytramadol	PRESENT			
N-Desmethytramadol	PRESENT			
Diphenhydramine	PRESENT			
Declared Medications:	Not Provided			
The flagging and interpretation on this report are based on the following declared medications. Unexpected results may arise from inaccuracies in the declared medications.				
Medication list was not provided.				
For further interpretive information, please call our ToxAssure Hotline, 1-866-593-6157.				



402 West County Road D  
Saint Paul, MN 55112  
677-474-5767

Jennifer A. Collins, Ph. D.  
Katie Walker, Pharm. D.  
Mark G. Collin, M. D.

Collected:	10/04/2012	5:23 PM
Received:	10/05/2012	11:56 AM
Reported:	10/08/2012	8:58 PM

## REPORT DETAIL

[illegible][illegible][illegible]

<p><b>EXAMPLE REPORTS</b> MEDTOX LABORATORIES, INC. 402 W. COUNTY ROAD D NEW BRIGHTON, MN 55112</p> <p>Account #: 5 Ordered By:</p> <p>Request #: 19216 Accession #: M319216</p>	<p><u>Patient Test Order Information</u></p> <p>Name: TEST,19216 Patient ID: Patient Phone: DOB: Age: Sex:</p> <p>Collected: 02/20/2013 Received: 02/20/2013 11:52 AM Reported: 05/28/2013 12:31 PM</p> <p>Report Status: FINAL</p>
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Test	Result	Flag	Units	Reference Range
SYNTHETIC CANNABINOIDS SCREEN, URGL				
SYNTHETIC CANNABINOID METABOLITES	Further testing indicated			
SYNTHETIC CANNABINOIDS CONFIRMATION				
SYNTHETIC CANNABINOIDS	POSITIVE	^		NEGATIVE
ACS-4 N-(5-carboxypentyl),N-(5-hydroxypentyl)	POSITIVE			
JMH-250 N-(5-carboxypentyl) Metabolite	POSITIVE			
ACS-4 N-(5-hydroxypentyl) Metabolite	POSITIVE			
JMH-250 N-(4/5-hydroxypentyl) Metabolite	POSITIVE			
JMH-073 N-Butanoic Acid Metabolite	POSITIVE			
JMH-073 N-(4-hydroxybutyl) Metabolite	POSITIVE			
JMH-2201 N-(4-hydroxypentyl) Metabolite	POSITIVE			
JMH-200 4-Hydroxyindole Metabolite	POSITIVE			
JMH-018 N-Pentanoic Acid Metabolite	POSITIVE			
JMH-073 N-(3-hydroxybutyl) Metabolite	POSITIVE			
JMH-018 N-(4/5-hydroxypentyl) Metabolite	POSITIVE			
JMH-122 N-(4/5-hydroxypentyl) Metabolite	POSITIVE			
JMH-398 N-(5-hydroxypentyl) Metabolite	POSITIVE			
UR-144 N-Pentanoic Acid Metabolite	POSITIVE			
UR-144 N-(4/5-hydroxypentyl) Metabolite	POSITIVE			
JMH-2201 N-Pentanoic Acid Metabolite	POSITIVE			
JMH-073 Parent compound	POSITIVE			
JMH-018 Parent compound	POSITIVE			
<p>Synthetic Cannabinoid Confirmation analysis includes:</p> <p>ACS-4: N-(5-carboxypentyl),N-(5-hydroxypentyl)</p> <p>JMH-018: parent and N-Pentanoic Acid,N-(4/5-hydroxypentyl) metabolites</p> <p>JMH-073: parent and N-Butanoic Acid, N-(3-hydroxybutyl), and N-(4-hydroxybutyl) metabolites</p> <p>JMH-250: N-(5-carboxypentyl),N-(4/5-hydroxypentyl) metabolites</p> <p>JMH-200: 4-Hydroxyindole metabolite</p> <p>JMH-122: N-(4/5-hydroxypentyl) metabolite</p> <p>JMH-398: N-(5-hydroxypentyl) metabolite</p> <p>JMH-2201: N-(4-hydroxypentyl) metabolite</p> <p>UR-144: N-pentanoic Acid,N-(4/5-hydroxypentyl) metabolites</p> <p>JMH-2201: N-pentanoic Acid</p> <p>UR-144: N-pentanoic Acid,N-(4/5-hydroxypentyl) metabolites</p> <p>Metabolites may not be unique to the listed parent compounds as related compounds may have a common metabolic pathway.</p> <p>Screening threshold: 1.0 ng/mL</p> <p>Confirmation threshold: 1.0 ng/mL</p>				



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Name: TEST,19216		Collected: 02/20/2013		
Requisition #: 19216		Received: 02/20/2013 11:52 AM		
Accession #: M319216		Reported: 06/28/2013 12:31 PM		
Test	Result	Flag	Units	Reference Range
Screening and confirmation analysis performed by Liquid Chromatography with Tandem Mass Spectrometry (LC/MS/MS).				

For questions, comments, or suggestions about this newsletter or other laboratory issues, please contact Lauren Anthony, MD, Medical Director of Allina Health Laboratory, (612) 863-0409 or [Lauren.Anthony@allina.com](mailto:Lauren.Anthony@allina.com)