Best Practices in Laboratory Testing

May 2014

Information for Providers

Lauren Anthony, MD, MT(ASCP) SBB Medical Director, Allina Health Laboratory

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 <u>not preferred</u> for chemical dependency or pain management monitoring. When this test is ordered, consideration and professional judgment <u>must</u> 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 <u>all</u> rapid presumptive drug screens and cup tests):

- 1. This screen <u>cannot</u> distinguish between abused drugs and many common prescribed and over-the-counter medications.
- 2. Certain foods or legitimate medications may <u>interfere</u> with screening tests and cause false positive results.
- 3. It is not possible to predict all interferences and false positive reactions because of <u>individual differences</u> 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. <u>Do not assume that a presumptive positive result is "real"</u>. 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. <u>Confirmations are automatically performed</u> 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, Lab 12396 - 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

	In-House Rapid Presumptive Screen LAB597 presumptive screen only	Limited Compliance Screen *NEW* LAB12507 for monitoring chemical dependency patients	Comprehensive Drug Screen & Compliance Monitor LAB8742 (aka ToxAssure or MedWatch) Pain compliance and non- emergency comprehensive drug screening	Synthetic Cannabinoid Qualitative Screen LAB12396 K2, Spice, "bath salts"
TAT	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.
Performing laboratory	Allina Health Laboratory	MedTox	MedTox	MedTox
Description	Clinical utility is limited. Should be ordered only by providers who understand the limitations 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
Automatic confirmations	NONE. Confirmations are NOT automatically per- formed and must be or- dered separately. 5-7 day turnaround time for confirmations.	Included and automatically performed, except THC. (Confirmation for THC must be specifically ordered if needed.)	Unnecessary, results are comprehensive and definitive.	Results are confirmed.
Reporting	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	Comprehensi	ve Compliance Drug Screen (ToxAssure) LAB8742
DRUG		THRESHHOLD /ml)	DRUG CLASS	DRUGS REPORTED
Ethyl Glucuronide	Not included	250	*Opiates:	codeine, hydrocodone, hydromorphone, morphine, dihydrocodeine
Etheyl 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, clorazepate (as metabolite), desalkylflurazepam, diazepam, desmethyldiazepam, lorazepam, midazolam, oxazepam, temazepam, alpha-hydroxytriazolam
Fentanyl	Not included	1	Other Hallucino- gens:	ketamine, phencyclidine
"Opiates" includes:	100	300	*Cannabinoids/ THC:	Δ ⁹ -carboxy-tetrahydrocannabinol (carboxy-THC)
Codeine	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
Morphine	100	300	Barbiturates:	amobarbital, barbital, butabarbital, butalbital, mephobarbital, pentobarbital, phenobarbital, secobarbital, thiopental
Heroin	100	300	*Ethyl Alcohol:	ethyl alcohol

_	Drugs of Abuse LAB597	Limited Compliance Screen LAB12507	Comprehensive Compliance Drug Screen (ToxAssure) LAB8742	
DRUG		I THRESHHOLD ig/ml)	DRUG CLASS	DRUGS REPORTED
Hydrocodone		300	Sympathomimetics:	ephedrine , methcathinone, methylphenidate, phenmetrazine, phentermine, phenylpropanola- mine, pseudoephedrine
Hydromorphone	800	300	*Fentanyl and Analogs:	fentanyl, norfentanyl, sufentanil, alfentanil
Dihydrocodeine	100	300	*Other Opiodes:	butorphanol, levorphanol, meperidine, normeperidine, nalbuphine, naltrexone, pentazocine, propoxyphene, norpropoxyphene, tapentadol, tramadol, Odesmethyltramadol, Ndesmethyltramadol,
6MAM (Heroin-Specific)	Not Included	10	Anticonvulsants:	carbamazepine, gabapentin, lamotrigine, levetiracetam, ox- carbazepine MHD, phenytoin, pregabalin, primidone, rufinamide, tiagabine, topiramate, zonisamide
Oxycodone	100	100	Muscle Relaxants:	baclofen, carisoprodol, cycloben- zaprine, meprobamate, metaxo- lone, methocarbamol, orphena- drine, tizanidine
PCP (Phencyclidine)	25	Not included	Other Sedative/ Hypnotics:	eszopiclone, zaleplon, zopiclone, zolpidem
THC Metabolite	50	50	Antidepressants:	amitriptyline, amoxapine, 8-hydroxyamoxapine, bupropion, citalopram, desmethylcitalopram, escitalopram, clomipramine, desmethylclomipramine, desipramine, desvenlafaxine, doxepin, desmethyldoxepin, duloxetine, fluoxetine, norfluoxetine, fluoxetine, imipramine, maprotiline, mirtazapine, nefazodone, nortriptyline, protriptyline, sertraline, desmethylsertraline, trazodone, trimipramine, venlafaxine, desmethylvenlafaxine
Methadone	200	300	Antipsychotics:	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	S (Tox	e Compliance Drug creen (Assure) (B8742
DRUG		THRESHHOLD /ml)	DRUG CLASS	DRUGS REPORTED
Propoxyphene	Not included	300	Analgesics/NSAIDS	acetaminophen, ibuprofen, ketoprofen, naproxen, oxap- rozin, salicylate
Buprenophine	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

THC METABOLITES, QUAL Not Detected

DRUG ABUSE SCREEN RAPID URINE INHOUSE

Status

Final

Range & Units

(Not Detected)

Collected:

Resulting lab: ABBOTT NORTHWESTERN HOSPITAL

Reference range: (Not Detected)
Value: Not Detected

Results



Value

DRUG ABUSE SCREEN RAPID URINE INHOUSE

Specimen Information

Collection Date and Time

Component Results
Component

PCP,QUAL	Not Detected		(Not Detected)	Final	
COCAINE,QUAL	Not Detected		(Not Detected)	Final	
METHAMPHETAMINE,	Not Detected		(Not Detected)	Final	
QUALITATIVE					
OPIATES,QUAL	Not Detected		(Not Detected)	Final	
AMPHETAMINE,	Not Detected		(Not Detected)	Final	
QUALITATIVE					
BENZODIAZEPINES,QUAL	_	(A)	(Not Detected)	Final	
Presumptive Positive	9-				
Unconfirmed Result					
TRICYCLICS,QUAL	Not Detected		(Not Detected)	Final	
METHADONE,	Not Detected		(Not Detected)	Final	
QUALITATIVE					
BARBITURATES,QUAL	Not Detected		(Not Detected)	Final	
OXYCODONE,	Not Detected		(Not Detected)	Final	
QUALITATIVE					
BUPRENORPHINE,	Not Detected		(Not Detected)	Final	

Flag

Result Narrative

Please Note:

QUALITATIVE

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 500 ng/ml Amphetamines 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.



402 WestCounty Road D Saint Paul, MN 55112

JennMer A. Collins, Ph. D. Karta Waker, Pharm. D. Mark G. Cattle, M. D.

Patient Text Order Information TEST,4630 SAMPLE REPORT Name: EXAMPLE REPORTS MEDTOX LABORATORIES, INC. LIMITED Path tiD: Path of Phone: 402 WI.CO UNITY ROAD D COMPLIANCE NEW BRIGHTON, MN 55112 DO B: Age: SCREEN Sex: Account#: 5 (optimized for Ordered By: Collected: 01/06/2014 chemical Received: 01/06/2014 4:40 PM dependency Requisitible #: 4630 Reported: 01/06/2014 4:43 PM Accession #: \$1004630 monitoring) ReportStatus: FINAL

Recult	Flag	Unita	Reference Range
		_	
+++ POSITIVE+++		rgimi	
+++ POSITIVE+++		rg/ml	
+++ POSITIVE+++		ng/mil	
+++ POSITIVE+++		rgimi	
+++ POSITIVE+++		rgimi	
+++ POSITIVE+++		rgimi	
+++ POSITIVE+++		rg/ml	
+++ POSITIVE+++		rgimi	
POSITIVE		rgimi	
+++ POSITIVE+++		rg/ml	
150.0		mg/dL	> = 20
50			45-89
+++ POSITIVE+++		ացծու	c 200
	*** POSITIVE*** *** POSITIVE***	*** POSITIVE*** *** POSITIVE***	+++ POSITIVE+++ rg/mi POSITIVE +++ POSITIVE+++ rg/mi

THIS SPECIMEN WAS SCREENED BY INMUNOASSAY. ANY POSITIVE RESULT WAS CONFIDNED BY GAS CHOONATOGRAPHY WITH NASS SPECTRONETRY (CC/MS) OR LIQUID CHOONATOGRAPHY WITH TROWEN WASS SPECTRONETRY (LC/MS/MS). THE FOLLOWING THRESHOLD CONCENTRATIONS WERE USED FOR THIS ANALYSIS:

INUS SAUGUMONIIO	CKEEN ING THRESHOLD E 500 NG/NL	CONFIRMATION THRESHOLD
FINA GLUCURANI		250 NG/NL
etka sufate		100 NG/NL
ANPHETANINES	500 NG/NL	250 NG/NL
BARB ITURATES	200 NG/NL	200 NG/NL
BENZOD LAZEP INES	200 NG/NL	200 NG/NL
COCAINE NETABOLI	TE 150 NG/NL	100 NG/NL
OP LATES	300 NG/NL	
CODEINE	-	300 NG/NL
NORPH INE		300 NG/NL
HAD INCOME.		300 NG/NL
HYDRONORPHONE		300 NG/NL
DIKADROCODEINE		300 NG/NL
en wil	10 NG/NL	10 NG/NL
OX ACODONE	100 NG/NL	100 NG/NL
MARIJUANA METABO	LITE 50 NG/NL	15 NG/NL
NETHADONE	300 NG/NL	300 NG/NL
BROB OX ABHENE	300 NG/NL	300 NG/NL
BAIN GRONG MINE	5 NG/NL	5 NG/NL
TRANADOL	200 NG/NL	100 NG/ML

ALTERNATIVE EXPLANATIONS SHOULD BE EXPLORED FOR ANY POSITIVE FINDING.

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

Page: 1 of ↓



402 WestCounty Road D Saint Paul, MN 55112 877-47 4-5767

Jennffer A. Collins, Ph. D. Karta Waker, Pharm . D. Mark G. Cattin , M. D.

Name: TBST,4630 Regulsillon #: 4630 Accession #: 8100+630		- 1	Collected: Received: Reported:	01/06/2014 01/06/2014 01/06/2014	4:40 PM 4:43 PM
Tect	Recult	Fla		Units	Reference Range
INTERPRETED IN THE CONTEXT INFORMATION. REFERENCE: SANKSA ADVISORY					
FENTANYL ANALYBIB, URINE					
FENTANYL	++POSITIVE++				
CARBOXY-THC, GCMB CONFIRMATION					
CARBOXY-THC	356			rg/ml	
8-ACETYLMORPHINE, LOWISMUS CONFIRM					
G-AC ETYLMORPHINE	8			rg/ml	
MIETHADONE, GOMBICON FIRMATION					
METHADONE	352			ng/mi	
METHADO NEMETABO LITE (ED DP)	353			ng/ml	
PROPOXYPHENE, GC/MB CONFIRM AT IO)					
PRO POXYPHEME	396			ng/ml	
NO RPROPOXYPH ENE	357			rg/ml	
BARBIT URATES, GOMS CON FIRMATION					
AMO BARBITAL	201			ng/ml	
PENTO BARBITAL	202			ng/ml	
SECO BARBITAL	203			ng/ml	
BUTALBITAL	204			ng/ml	
BUTABARBITAL	205			rg/ml	
PHEMO BARBITAL	206			rg/ml	
FENTANYL CONFIRMATION, URINE					
FENTANYL, URINE	358.0			rg/ml	
This screen was screened by result was confirmed by hig Tandem Mass Spectrometry (L) The following threshold con this analysis: Irug Screening Threshold pentanyl 1.0 ng/ml	uid Chromatograpi C/NS/NS). centrations are d Confirmatio:	hy i use n T	vith d for		
BENZOYL BOSONINE, GOM B CONFIRM AT	ION				
BENZOYLECGON IN E	213			ng/mi	
BUPRENORPHINE CON FIRMATION					
BUPRENO RPHINE	6			rg/ml	
NO RBU PRENO RPHINE	7			rg/ml	
EXPANDED OPIAT ECONFIRMATION					
CODEINE	351				
MORPHINE	352				
HYDROCO DO ME	353				
HYDROMORPHONE	354				
DIHYDROCODEINE	355			ng/mi	
OXYCODONE CON FIRMATION					
OXYCO DO NE	354			ng/mi	
ОХУМОВРНОМЕ	355			ng/mi	
AMPHETAMINES, GCAMIS CONFIRMATION					

Page: 2 of ↓



402 WestCounty Road D Saint Paul, MN 55112 877-47 4-5767

JennMer A. Collins, Ph. D. Karta Waker, Pharm . D. Mark G. Cattin , M. D.

Name: TBST,4630 Requisition #: 4630 Accession #: 81004630		Collected: Received: Reported:	01/06/2014 01/06/2014 01/06/2014	4:40 PM 4:43 PM
Tect	Regult	Flag	Unita	Reference Range
AMPHETAMINE	350		rg/ml	
METHAMPHETAMINE	351		rg/ml	
TRAMADOL CONFIRMATION			_	
TRAM ADO L	101		rgimi	
DESMETHYLTRAMADOL	102		rg/ml	
BENTODIATEPINE CONFIRMATION, UR				
ALPRAZOLAM	207		rg/ml	
ALPHA-HYDROXYALPRAZOLAM	208		rgimi	
DESMETHYLD JAZEPAM	209		rgimi	
OXAZ EPAM	210		rg/ml	
TEMAZ EPAM	211		rg/ml	
LO RAZEPAM	212		rg/ml	
QUANTITATIVE CONFIDENTION OF LC MS/MS (HIGH PERFORMANCE SPECTROMETRY) RESULTS ARE I FOLLOWING DRUGS: DESNETHALDIALERAN, OXALERA ALFRAZOLAN AND NETHEOLITE (LIGUID CHRONATOG EFFÖRTED TO 200 m H, TENAZEPAN, LOR	ixaehy/Tanden na 1g/ml for The 1azepan	SS	



402 WestCounty Road D Saint Paul, MN 55112 877-47 4-5767 JennMer A. Collins, Ph. D. Karta Waker, Pharm. D. Mark G. Cattin, M. D.

Mame: TBST,4630 Regulsillon #: 4630 Accession #: 81004630			Collected: Received: Reported:	01/06/2014 01/06/2014 01/06/2014	4:40 PM 4:43 PM
Tect	Regult	F	lag	Units	Thre thold
ETHYL OLUCU RONIDE	250			ng/m L	
ETHYL SULFATE	101			rg/m L	



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

SAMPLE REPORT

COMPREHENSIVE

Jennifer A. Colins, Ph. D. Karla Walker, Pharm. D. Mark G. Catlin, M. D.

ALLINA MEDICAL LABORATOMICO 2800 10TH AVE SOUTH SAM

SUITE 2000

MINNEAPOLIS, MN 55407

Account #: 1052 Ordered By: HESS,TODD

Requisition #: 50022000 Accession #: F49333944

DRUG COMPLIANCE MONITOR (aka

ToxAssure,

Medwatch)

Patient Test Order Information

Name: Patient ID: Patient Phone: DOB: Sec

Callected: Received: Reported:

Report Status:

FINAL

REPORT SUMMARY

	Result	Fleg	Units	Threshold
JMPLIANCE DRUG ANALYSIS, U	RINE, WITH MED REPORT			
Creatinina	40		mg/dL	· I
rugs Present				
Lorazepam	3829		ng/mg creat	
	is a scheduled presc;	ription media	sation.	
Hydrocodone	1141		ng/mg creat	
Hydromorphone	464		ng/mg creat	
Dihydroccdeine	578		ng/mg creat	
Nortrydmoodone	3202		ng/mg creat	
medications. Hydronorhydrocodone ar	ne include scheduled omorphone, dihydrococ e expected metabolite	San and the	=	
Oxycodone	5314		ng/mg creat	
Disymorphone	3016		ng/mg creat	
Norexycodone	23331		ng/mg creat	
Neresymerphone	3712		ng/mg creat	
	include scheduled pr	Description		
medications. Uxymorphone.noroxyco metabolites of coy	done and norrowyworpho			
medications. Usymorphone, norceyco- metabolites of day Methadune	done and norrowymaxpho codone. 3036		ng/mg creat	
medications. Usymorphone, norceyou metabolites of day Methadone EBUP (Methadone Mtb)	done and norrowyworphs done. 3036 5351	one are exper		
medications. Unymorphone.noromyco- metabolites of ony- Methadune ELLP (Methadone Mtb) Seurces of methadone medications. EULP is an expected of	done and norrowysorpho codone. 3036 5351 include scheduled pr	me are exper	ng/mg creat	
medications. Uxymorphone, norcayco metabolites of oxy Methedone ELUF (Nethedone Mtb) Secress of methedone medications. ELUF is an expected of	done and norrowysorpho codone. 3036 5351 include scheduled pr	me are exper	ng/mg creat	
medications. Usymorphone, norceyoo metabolites of coy- Methadone ELUP (Methadone Mtb) Seurces of methadone medications. ELUP is an expected of Tramedol O-Desmethyltramedol	done and norrowysorpho codone. 3036 5351 include scheduled prostabolite of methado	me are exper	ng/mg creat	
medications. Usymotrphone, norceyou metabolites of cory Methadone ELUP (Nathadone Mtb) Seurces of methadone medications. ELUP is an expected of Tramedol O-Desmethyltramedol N-Desmethyltramedol	done and norrowysorpho codone. 3036 5351 include scheduled protectabolite of methado	me are exper	ng/mg creat	
medications. Usymorphone, norceyou metabolites of day. Methadone ELGP (Nathadone Mtb) Sources of methadone medications. EUGP is an expected of Tremedol C-Desmethyltramedol Diphentyldramine	Some and norrowymorpho codone. 3036 5351 include scheduled prostabolite of methado PRESENT	me are exper	ng/mg creat	
medications. Usymorphone, norceyou metabolites of day Methadone ELUP (Nathadone Mtb) Seurces of methadone medications. EUUP is an expected of Tramedol O-Desmethyltramedol N-Desmethyltramedol	Some and norrowysoxphorodone. 3036 5351 include scheduled protectabolite of methodo PRESENT PRESENT PRESENT PRESENT	me are exper	ng/mg creat	
medications. Uxymorphone, norceyoo metabolites of coy- Methadone EEUP (Nethadone Mtb) Seurces of methadone medications. EEUP is an expected of tramedol O-Desmethytramedol N-Desmethytramedol Diphenty dramine	Some and norrowymorpho codons. 3036 5351 include scheduled pr notabolite of methado PRESENT PRESENT PRESENT PRESENT PRESENT Not Provided spectation on this re I medications. Unexpe	rescription	ng/mg creat ng/mg creat	



402 West County Road D Saint Paul, MN 55112 677-474-5767 Jenniter A. Collins, Ph. D. Kerle Welker, Pharm. D. Mark G. Catlin, M. D.

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

REPORT DETAIL

Test	PRESE
COMPLIANCE DRUG ANALYSIS, JRW	WITH MED REPORT
G-tellrine	45
ALOGHOL STHYL	REGATIVE Not Committed
Abornis Ethyl AMPHETAMINES	NEGATIVE
Middle ghid solve	Not Deleded
Acquisited	Not Detected
MEMA (Emissy)	Not Detected
MDA (Softery metabolite)	Not Deleded
MAZOUWEFRES	++PORTVE++
Disease	Not Detected
Empetyld susper	Not Detected
Costa tyries	NOT CHROMAN
Territatying	And Gesented
Aprilian	Not Detected
Aphichydicaytipusidae	his celesied
Decay/foreign/or	State Contracting
Leventopero	
Nybadyd crybiaethe	Not beleded
Canapan	Not Cetarted
1.ad motorapper littlester	Not Detected Not Detected
COCANE METABOLITE	HE GATINE
Cooping to 1 no contra	NO Lwieded
Serventemoni-se	For Datested
Ber anglengani se Cit metryinse CAMONERODED	Not Ewlacked
CAMMABINORIS	REGATIVE
Cablery THC OHATE GLASS	Political Computed ++P-CRTIVE++
GHATE GLASS	++FGNTWE++
Codelve	Not Detected Not Detected
Milestina Mirestona	
MF vocabely in	Not Detected
Fydiocodove	1941
Epideternyhena	404
DiffyGlocodeline	578
Findyd, oce does	3302
ONYCOLONE CLASS	HPOSITIOHH SN4
Oxycodous	
	3016
Coperiophical	3016
Chaper in philine House, parties a	23804
Gayer in philose Housey confined Housey confined	21004 2712 ++P 006/EME++
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402 WestCounty Road D Saint Paul, MN 55112 877-474-5767

JennMer A. Collins, Ph. D. Karta Waker, Pham. D. Mark G. Cattle, M. D.

Patient Text Order Information EXAMPLE REPORTS Name: TEST,19216 Pate et ID: MEDTOXIABORATORIES, INC. 402 W. CO UNTY ROAD D Path at Phone: NEW BRIGHTON, MN 55112 DO B: Age: Sex: Account#: 5 Ordered By: Collected: 02/20/2013 Received: 02/20/2013 11:52 AM 06/28/2013 1231 PM Requbitbs #: 19216 Reported: Accession #: M319216 ReportStatus: FINAL

rect	Regult	Flag	Unita	Reterence Range
IYNTH ETIC CANNABINOIDB BCRN,URQI				
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BYNTHETIC CANNADNOIDS	POBITIVE	^		N BOATIVE
RCS+ + N-(5-carboxypenly() M.b.	POSITIVE			
JAVH-250 N-(5-carboxypenlyl) M b .	POSITIVE			
RCS-+ N-(5-hydroxype nlyt) M.b.	POSITIVE			
JAVH-250 N-(4/5-hydroxype nM) M.b.	POSITIVE			
JAVH-07 3 N-Bulanoic Add M b.	POSITIVE			
JAVH -07 3 N-(4-hydroxybulyl) M b.	POSITIVE			
AM-ZZO1 N-(4-hydroxypen M) M b.	POSITIVE			
JAVH-200 + Hydroxyindole Mib.	POSITIVE			
JWH-018 N-Penlanoic Add Wilb.	POSITIVE			
JWH-07 3 N-(3-hydroxybulyi) M b .	POSITIVE			
JWH-018 N-(4/5-hydroxype nM) M b.	POSITIVE			
JAVH-122 N-(4/5-hydroxype nM) M b.	POSITIVE			
JWH-398-N-(5 hydroxypenlyl) M b .	POSITIVE			
UR-144 N-Pentanoic Add Mib.	POSITIVE			
UR-1++ N-(+/5-hydroxypenlyl) M b	POSITIVE			
MAW-2201 N-Penlandic Add Mib.	POSITIVE			
JWH-07 3 Pare ni compound	POSITIVE			
JWH-018 Pare ni compound	POSITIVE			

Synthetic Canabinoid Confirmation analysis includes:
NCS-1: N-(5-carboxypenty1),N-(5-hydroxypenty1)
MH-018: parent and N-Pentanoic Acid,N-(1/5-hydroxypenty1)
metabolites
MH-073: parent and N-Butanoic Acid, N-(3-hydroxybuty1),
and N-(1-hydroxybuty1) metabolites
MH-250: N-(5-carboxypenty1),N-(1/5-hydroxypenty1)
metabolites
MH-200: 1-Rydroxy indole metabolite
MH-122: N-(1/5-hydroxypenty1) metabolite
MH-138: N-(5-hydroxypenty1) metabolite
MH-2201: N-(1-hydroxypenty1) metabolite
UR-141: N-pentanoic Acid,N-(1/5-hydroxypenty1) metabolites
NNM-2201: N-pentanoic Acid,N-(1/5-hydroxypenty1) metabolites
NNM-2201: N-pentanoic Acid,N-(1/5-hydroxypenty1) metabolites
NNM-2201: N-pentanoic Acid,N-(1/5-hydroxypenty1) metabolites

Netabolites may not be unique to the listed parent compounds as related compounds may have a common metabolic pathway.

Screening threshold: 1.0 ng/ml Confirmation threshold: 1.0 ng/ml



402 WestCounty Road D Saint Paul, MN 55112 877-47 4-5767 Jennffer A. Collins, Ph. D. Karta Waker, Pharm. D. Wark G. Cattin, W. D.

Name: TBST,19216 Regulsillon #: 19216 Accession #: M319216		Collected: Received: Reported:	02/20/2013 02/20/2013 06/22/2013	1152 AU 1231 PU			
Tect	Recult	Flag	Unita	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