RTXMSJ06008UAH Toxicology Drug Testing Panels

Urine Opioid Dependency Panel [1] (UODP)

DRUG CLASS • ANALYTE DETECTED	COMMON TRADE NAMES (STREET NAME)	INTERPRETIVE NOTES	CUT-OFF CONCENTRATION[2] (NG/ML)
Amphetamines			
• Amphetamine	Adderall, Dexedrine, Vyvanse, Lisdexamfetamine	A prescription drug; also a metabolite of methamphetamine	250
• Methamphetamine	(Speed, Bennies, Crystal Meth, Uppers)	Metabolite of Selegiline; Metabolized to amphetamine	250
• Methylenedioxyamphetamine	(MDA)	Metabolite of methylenedioxymethamphetamine	250
• Methylenedioxymethamphetamine	(Ecstasy, MDMA)	Metabolized to methylenedioxyamphetamine	250

DRUG CLASS • **ANALYTE DETECTED**	**COMMON TRADE NAMES (STREET NAME)**	**INTERPRETIVE NOTES**	**CUT-OFF CONCENTRATION[2] (NG/ML)**
Benzodiazepines			
• 7-Aminoclonazepam		Metabolite of clonazepam (Rivotril)	50
• 7-Aminonitrazepam		Metabolite of nitrazepam (Mogadon)	50
• Alphahydroxyalprazolam		Metabolite of alprazolam (Xanax)	50
• Alphahydroxytriazolam		Metabolite of triazolam (Halcion)	50
• Bromazepam	Lectopam		50
• Clobazam	Frisium	Metabolized to norclobazam	50
○ Norclobazam		Metabolite of clobazam	50
• Demoxepam		Metabolite of chlordiazepoxide (Librium); further metabolized to nordiazepam	50

DRUG CLASS • **ANALYTE DETECTED**	**COMMON TRADE NAMES (STREET NAME)**	**INTERPRETIVE NOTES**	**CUT-OFF CONCENTRATION[2] (NG/ML)**
Benzodiazepines continued			
• Diazepam	Valium	Metabolized to nordiazepam, temazepam, oxazepam	50
• Etizolam		Metabolized to 3-hydroxyetizolam, prescription not available in Canada	50
○ Alphahydroxyetizolam		Metabolite of etizolam. Etizolam prescription not available in Canada	50
• Flubromaz**epam**		Prescription not available in Canada	50
• Flubromaz**olam**		Prescription not available in Canada	50
• Lorazepam	Ativan		50
• Midazolam	Versed	Metabolized to 1-hydroxymidazolam	50
○ 1-Hydroxymidazolam		Metabolite of midazolam	50
• Nordiazepam		Metabolite of diazepam (Valium) and chlordiazepoxide (Librium); further metabolized to oxazepam	50
• Oxazepam	Serax	Metabolite of diazepam, temazepam, chlordiazepoxide	50
• Temazepam	Restoril	Metabolite of diazepam; metabolized to oxazepam	50
Cocaine Related Compounds			
• Benzoylecgonine		Metabolite of cocaine	150

DRUG CLASS • **ANALYTE DETECTED**	**COMMON TRADE NAMES (STREET NAME)**	**INTERPRETIVE NOTES**	**CUT-OFF CONCENTRATION[2] (NG/ML)**
Opioids			
• 6-Acetylmorphine	6-monoacetylmorphine (6-MAM)	Heroin metabolite	5
• Codeine	Tylenol with codeine, Tylenol No. 2, Tylenol No. 3, Tylenol No. 4, codeine phosphate and others	Metabolized to morphine and hydrocodone	50
• Morphine	MS Contin, M-Eslon, Kadian and others	Metabolite of codeine; metabolized to hydromorphone; potentially detected after poppy seed consumption	150
• Hydrocodone	Vicodin	Metabolite of codeine; metabolized to hydromorphone	50
• Hydromorphone	Dilaudid, Hydromorph Contin, Jurnista	Metabolite of hydrocodone	50
• Oxycodone	Oxycontin, OxyNeo, Percocet, Percodan	Metabolized to oxymorphone	50
• Oxymorphone		Metabolite of oxycodone, prescription not available in Canada	Not Reported
• Fentanyl	Duragesic	Metabolized to norfentanyl	5
○ Norfentanyl		Metabolite of fentanyl	5
• Norcarfentanil		Metabolite of carfentanil and remifentanil	0.5
• Buprenorphine	Butrans, Suboxone, Belbuca	Metabolized to norbuprenorphine	10
○ Norbuprenorphine		Metabolite of buprenorphine	10
• Methadone	Methadose	Metabolized to EDDP	50
○ EDDP[3]		Metabolite of methadone	50

1. Sample hydrolysis performed prior to analysis by liquid chromatography/mass spectrometry (LC-MS/MS) allowing detection of both free and conjugated drug.

   A positive result does not give any indication as to level of impairment/intoxication, route of administration or ingested dose. Determining concentration of drug (i.e. the drug level) in urine does not overcome these limitations. Concentrations are NOT reported.

   A negative result does not necessarily mean the urine is drug free. A negative result may mean:
   - the sample is drug free or
   - drugs are present but were not at or above the cut-off concentrations listed or
   - the drug present in the sample is not detected by this method.

2. The cut-off concentration is the concentration that distinguishes whether a drug is reported as detected or not detected.

3. EDDP = 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine

Urine General Toxicology Panel [1] (UGTP)

DRUG CLASS • **ANALYTE DETECTED**	**COMMON TRADE NAMES (STREET NAME)**	**INTERPRETIVE NOTES**	**CUT-OFF CONCENTRATION[2] (NG/ML)**
Amphetamines			
• Amphetamine	Adderall, Dexedrine, Vyvanse, Lisdexamfetamine	A prescription drug; also a metabolite of methamphetamine	250
• Methamphetamine	(Speed, Bennies, Crystal Meth, Uppers)	Metabolite of Selegiline; Metabolized to amphetamine	250
• Methylenedioxyamphetamine	(MDA)	Metabolite of methylenedioxymethamphetamine	250
• Methylenedioxymethamphetamine	(Ecstasy, MDMA)	Metabolized to methylenedioxyamphetamine	250
• Paramethoxyamphetamine	(PMA)	Metabolite of paramethoxymethamphetamine	50
• Paramethoxymethamphetamine	(PMMA)	Metabolized to paramethoxyamphetamine	50
Analgesics			
• Tapentadol	Nucynta		50
• Tramadol	Tramacet	Metabolized to O-desmethyltramadol	50
○ O-desmethyltramadol		Metabolite of tramadol	50
Anesthetics			
• Ketamine		Metabolized to norketamine	100
○ Norketamine		Metabolite of ketamine	100

DRUG CLASS • **ANALYTE DETECTED**	**COMMON TRADE NAMES (STREET NAME)**	**INTERPRETIVE NOTES**	**CUT-OFF CONCENTRATION[2] (NG/ML)**
Anticonvulsants			
• Gabapentin	Neurontin		10,000
Antihistamine			
• Diphenhydramine\ Dimenhydrinate		Dimenhydrinate is the 8-chlorotheophylline salt of diphenhydramine	50
Barbiturates			
• Butalbital	Fiorinal (with codeine in some preparations)		300
• Phenobarbital	Luminal, phenobarbitone		300
Benzodiazepines			
• 7-Aminoclonazepam		Metabolite of clonazepam (Rivotril)	50
• 7-Aminonitrazepam		Metabolite of nitrazepam (Mogadon)	50
• Alphahydroxyalprazolam		Metabolite of alprazolam (Xanax)	50
• Alphahydroxytriazolam		Metabolite of triazolam (Halcion)	50
• Bromazepam	Lectopam		50

DRUG CLASS • **ANALYTE DETECTED**	**COMMON TRADE NAMES (STREET NAME)**	**INTERPRETIVE NOTES**	**CUT-OFF CONCENTRATION[2] (NG/ML)**
Benzodiazepines continued			
• Clobazam	Frisium	Metabolized to norclobazam	50
○ Norclobazam		Metabolite of clobazam	50
• Demoxepam		Metabolite of chlordiazepoxide (Librium); further metabolized to nordiazepam	50
• Diazepam	Valium	Metabolized to nordiazepam, temazepam, oxazepam	50
• Etizolam		Metabolized to 3-hydroxyetizolam, prescription not available in Canada	50
○ Alphahydroxyetizolam		Metabolite of etizolam. Etizolam prescription not available in Canada	50
• Flubromaz**epam**		Prescription not available in Canada	50
• Flubromaz**olam**		Prescription not available in Canada	50
• Lorazepam	Ativan		50
• Midazolam	Versed	Metabolized to 1-hydroxymidazolam	50
○ 1-Hydroxymidazolam		Metabolite of midazolam	50
• Nordiazepam		Metabolite of diazepam (Valium) and chlordiazepoxide (Librium); further metabolized to oxazepam	50
• Oxazepam	Serax	Metabolite of diazepam, temazepam, chlordiazepoxide	50
• Temazepam	Restoril	Metabolite of diazepam; metabolized to oxazepam	50

DRUG CLASS • **ANALYTE DETECTED**	**COMMON TRADE NAMES (STREET NAME)**	**INTERPRETIVE NOTES**	**CUT-OFF CONCENTRATION[2] (NG/ML)**
Cannabinoids			
• Marijuana Metabolite (THC COOH) (11-nor-Δ^9-tetrahydrocannabinol-9-carboxylic acid)	Sativex (Cannabis, Cannabinoids, Weed, Grass, THC)	Metabolite of tetrahydrocannabinol (THC)	30
Cutting Agents			
• Levamisole		Cutting agent – may cause profound neutropenia	50
• Phenacetin		Cutting agent	25
• Xylazine		Cutting agent	50
Cocaine and Related Compounds			
• Cocaine	(crack, blow, snow)	Metabolized to a variety of metabolites	50
• Benzoylecgonine		Metabolite of cocaine	150
• Cocaethylene		Metabolite arising from simultaneous use of cocaine and ethanol	25

DRUG CLASS • **ANALYTE DETECTED**	**COMMON TRADE NAMES (STREET NAME)**	**INTERPRETIVE NOTES**	**CUT-OFF CONCENTRATION[2] (NG/ML)**
Opioids			
• 6-Acetylmorphine	6-monoacetylmorphine (6-MAM)	Metabolite of heroin (diacetylmorphine)	5
• Codeine	Tylenol with codeine, Tylenol No. 2, Tylenol No. 3, Tylenol No. 4, codeine phosphate and others	Metabolized to morphine and hydrocodone	50
• Morphine	MS Contin, M-Eslon, Kadian and others	Metabolite of codeine; metabolized to hydromorphone; potentially detected after poppy seed consumption	150
• Hydrocodone	Vicodin	Metabolite of codeine; metabolized to hydromorphone	50
○ Norhydrocodone		Metabolite of hydrocodone	50
• Hydromorphone	Dilaudid, Hydromorph Contin, Jurnista	Metabolite of hydrocodone	50
• Oxycodone	Oxycontin, OxyNeo, Percocet, Percodan	Metabolized to noroxycodone and oxymorphone	50
○ Noroxycodone		Metabolite of oxycodone	50
• Oxymorphone	Prescription not available in Canada	Metabolite of oxycodone	Not Reported
○ Noroxymorphone		Metabolite of oxymorphone and naloxone; naltrexone pharmaceutical impurity	50

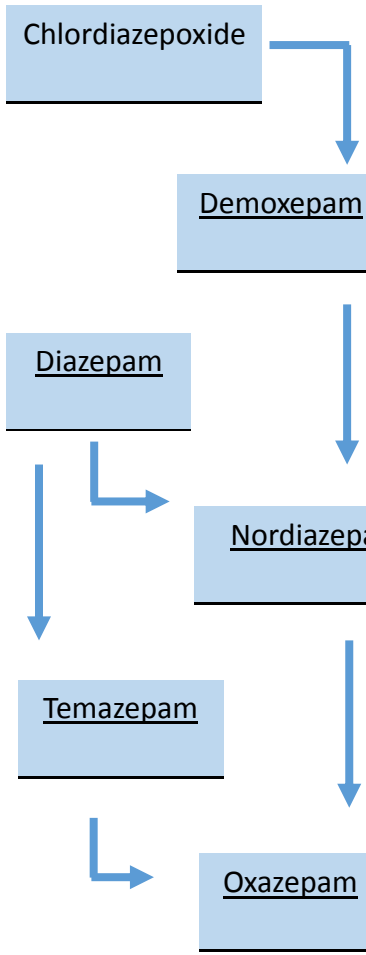
DRUG CLASS • **ANALYTE DETECTED**	**COMMON TRADE NAMES (STREET NAME)**	**INTERPRETIVE NOTES**	**CUT-OFF CONCENTRATION[2] (NG/ML)**
Opioids continued			
• Fentanyl	Duragesic	Metabolized to norfentanyl	5
○ Norfentanyl		Metabolite of fentanyl	5
• Norcarfentanil		Metabolite of carfentanil and remifentanil	0.5
• Buprenorphine	Butrans, Suboxone, Belbuca	Metabolized to norbuprenorphine	10
○ Norbuprenorphine		Metabolite of buprenorphine	10
• Methadone	Methadose	Metabolized to EDDP	50
○ EDDP[3]		Metabolite of methadone	50
• Meperidine	Demerol	Metabolized to normeperidine	100
○ Normeperidine		Metabolite of meperidine	100
Sedative-Hypnotics (Miscellaneous)			
• Zopiclone	Imovane		50
Stimulants (Miscellaneous)			
• Methylphenidate	Biphentin, Concerta, Ritalin	Metabolized to ritalinic acid	100
• Ritalinic Acid		Metabolite of methylphenidate	500

1. Sample hydrolysis performed prior to analysis by liquid chromatography/mass spectrometry (LC-MS/MS) allowing detection of both free and conjugated drug.

   A positive result does not give any indication as to level of impairment/intoxication, route of administration or ingested dose. Determining concentration of drug (i.e. the drug level) in urine does not overcome these limitations. Levels are NOT reported.

   A negative result does not necessarily mean the urine is drug free. A negative result may mean:
   - the sample is drug free or
   - drugs are present but were not at or above the cut-off concentrations listed or
   - the drug present in the sample is not detected by this method.
2. The cut-off concentration is the concentration that distinguishes whether a drug is reported as detected or not detected.
3. EDDP = 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine

BENZODIAZEPINES METABOLISM



Alprazolam → α-hydroxyalprazolam

Bromazepam → Hydroxybromazepam

Clonazepam → 7-Aminoclonazepam

Clobazam → Norclobazam

Etizolam → Alphahydroxyetizolam

Flubromaz**epam**

Flubromaz**olam**

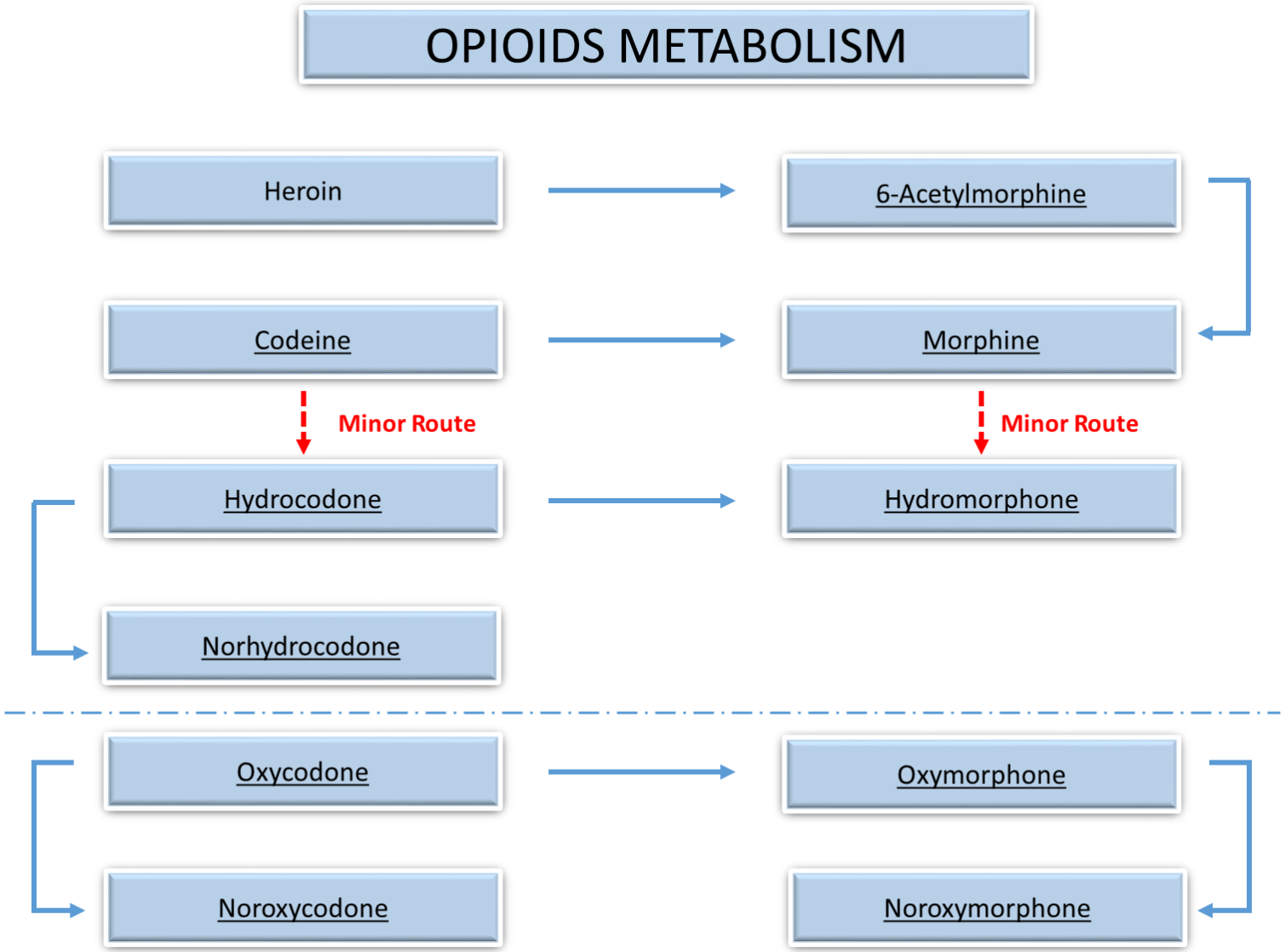
Lorazepam

Midazolam → 1-Hydroxymidazolam

Nitrazepam →7-Aminonitrazepam

Triazolam → α-Hydroxytriazolam

Notes: Underlined analytes detected in assay; Free and conjugated metabolites detected.



Notes: **Underlined analytes detected in assay; Normetabolites included in UGTP but not UODP; Free and conjugated metabolites detected.**

SPECIMEN VALIDITY TESTING

- Specimen Validity Testing (SVT) is performed to determine the authenticity of a specimen provided for toxicology testing.
- Creatinine is measured on all specimens.
- Specific gravity is determined when creatinine is less than 1.768 mmol/L.
- Interpretation is dependent on the combination of creatinine and specific gravity results.

CREATININE	SPECIFIC GRAVITY	INTERPRETATION
≥ 1.768 mmol/L	-	Normal (no comment added to report)
≥ 0.177 and < 1.768	>1.0010 and <1.0030	Dilute
≥ 0.177	≤ 1.0010	Invalid
< 0.177	> 1.0010 and < 1.0200	Invalid
< 0.177	≤ 1.0010 or ≥ 1.0200	Possibly Substituted

- Dilute specimens occur when an individual drinks a lot of water/fluid or is taking a diuretic. Creatinine and specific gravity values are lower than expected for human urine but do not meet the criteria for substitution. Any drugs present in such specimens may be below the cut-off concentration and will not be reported as detected. Recollection is recommended.

- Invalid specimens are those in which the creatinine and specific gravity results are incongruent. It does not meet the criteria for a normal, dilute or substituted specimen. Drugs may be missed in these types of specimens. Recollection is recommended.

- Possibly substituted specimens are specimens in which creatinine and specific gravity are outside normal physiological ranges. Substituted specimens are those which have been deliberately diluted with another liquid effectively decreasing the drug concentration below the cut-off concentration or replacing a valid urine with a sample that is not one's own or in fact not human urine. Recollection is recommended.