

Multi-Drug Urine Test Cup

INSTRUCTIONS FOR USE

PLEASE READ ALL INFORMATION IN THE INSTRUCTIONS FOR USE BEFORE USING THE TEST!

[REF] See Box Label



Ketamine (KET)
Ketamine was developed in the 1960s to replace phenylcyclidine (PCP) as an anesthetic agent and is most commonly used in veterinary medicine today. In addition to rohypnol (add hyperlink to page) and GHB, it is also considered a club drug, and may be used in drug-facilitated sexual assault situations. It is odorless, tasteless and usually swallowed in powder form or injected. Once taken, it is very short-acting and shows effects within minutes. Under federal law, ketamine is classified as a Schedule III drug, meaning it has approved medical use, but still possesses a high potential for abuse.

Methamphetamine (MET)
Methamphetamine is a potent sympathomimetic agent with therapeutic applications. Acute higher doses lead to enhanced stimulation of the central nervous system and induce euphoria, alertness, and a sense of increased energy and power. More acute responses produce anxiety, paranoia, psychotic behavior, and cardiac dysrhythmias. The pattern of psychosis which may appear at half-life of about 15 hours is excreted in urine as amphetamine and oxidized as deaminated and hydroxylated derivatives. However, 40% of methamphetamine is excreted unchanged. Thus the presence of the parent compound in the urine indicates methamphetamine use.

Methadone (MTD)
Methadone is a narcotic analgesic prescribed for the management of moderate to severe pain and for the treatment of opiate dependence (Heroin, Vicodin, Percocet, Morphine). It is administered either orally, or by intravenous or intra-muscular injection. The duration of effect of methadone is 12–24 hours. Its major urinary excretion products are methadone, EDDP (2-ethylidene-1, 5-dimethyl-3, 3-diphenylpyrrolidine), and EMDP (2-ethyl-5-methyl-3, 3-diphenylpyrrolidine).

Methadone Metabolite (EDDP)
EDDP(2-Ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine) is the primary metabolite of methadone. Methadone is a synthetic analgesic drug that is originally used in the treatment of narcotic addicts. The detection of EDDP is more beneficial than traditional methadone screening since EDDP exists only in urine from individuals that ingested methadone. The tampering of specimens by spiking the urine with methadone can be prevented. Secondly, renal clearance of EDDP is not affected by urinary pH, therefore the EDDP test provides a more accurate result of methadone ingestion than the methadone parent screen.

Methylenedioxyamphetaminine - ecstacy (MDMA)
MDMA belongs to a family of man-made drugs. Its relatives include MDA (methylenedioxyamphetaminine), and MDEA (methylenedioxyethylamphet amine). They all share the amphetamine-like effects. MDMA is a stimulant with hallucinogenic tendencies described as an empathogen as it releases mood-altering chemicals, such as cartoning and L-dopa, and may generate feelings of love and friendliness. The adverse effects of MDMA use include elevated blood pressure, hyperthermia, anxiety, paranoia and insomnia. MDMA is administered either by oral ingestion or intravenous injection. The effects of MDMA begin 30 minutes after intake, peak in an hour and last for 2–3 hours.

Morphine (MOP)
Opiate refers to any drug that is derived from the opium poppy, including the natural products, morphine and codeine, and the semi-synthetic drugs such as heroin. Opioid is more general, referring to any drug that acts on the opioid receptor. Opioid analgesics comprise a large group of substances which control pain by depressing the central

This package insert applies to any combination of multi-drug tests and adulteration control tests. Therefore, some information on the performance characteristics of the product may not be relevant to your test. Please refer to the labels on the packaging and the prints on the test device to identify which drugs and adulteration controls are included in your test.

INTENDED USE

Multi-Drug Urine Test Cup is a rapid urine screening test. It's a lateral flow, one-step immunoassay for the qualitative detection of specific drugs and their principal metabolites in human urine at specified cut-off concentrations, with additional semi quantitative adulteration controls. The multi-drug test device can be combined with the adulteration controls such as Creatinine (CRE), Glutaraldehyde (GLU), Nitrite (NIT), pH, Specific Gravity (S.G.), and/or Oxidants/Pyridinium Chlorochromate (OXI/PPC), which is used for the determination of diluted or adulterated urine specimens. The adulteration control is an important pre-screening test for drugtesting.

Drug (Identifier)	Calibrator	Cut-off (ng/mL)
Amphetamine (AMP 1000)	d-Amphetamine	1000
Amphetamine (AMP 500)	d-Amphetamine	500
Amphetamine (AMP 300)	d-Amphetamine	300
Barbiturates (BAR 300)	Secobarbital	300
Benzodiazepines (BZO 300)	Oxazepam	300
Benzodiazepines (BZO 200)	Oxazepam	200
Benzodiazepines (BZO 100)	Oxazepam	100
Buprenorphine (BUP 10)	Buprenorphine	10
Cocaine (COC 300)	Benzoylcegonine	300
Cocaine (COC 150)	Benzoylcegonine	150
Cocaine (COC 100)	Benzoylcegonine	100
Cannabinoids (THC 50)	11-nor-Δ ⁹ -THC-9-COOH	50
Cannabinoids (THC 40)	11-nor-Δ ⁹ -THC-9-COOH	40
Cannabinoids (THC 25)	11-nor-Δ ⁹ -THC-9-COOH	25
Cotinine (COT)	Cotinine	200
Ethyl Glucuronide (ETG)	Ethyl Glucuronide	500
Fentanyl (FTY)	Fentanyl	20
Ketamine (KET 1000)	Ketamine	1000
Ketamine (KET 500)	Ketamine	500
Methamphetamine (MET 1000)	d-Methamphetamine	1000
Methamphetamine (MET 500)	d-Methamphetamine	500

1	2	3	4
---	---	---	---

nervous system. Large doses of morphine can produce higher tolerance levels, physiological dependency in users, and may lead to substance abuse. Morphine is excreted unmetabolized, and is also the major metabolic product of codeine and heroin. Morphine is detectable in the urine for several days after an opiate dose.

Opiate (OPH)
Multi-Drug Urine Test Cup yields a positive result when the concentration of morphine in urine exceeds 2000ng/mL. See Morphine (MOP) for the summary.

Oxycodone (OXY)
Oxycodone is an analgesic, which works by depressing the central nervous system. Oxycodone is abused for its opiate-like effects. In addition to its equal potency to morphine in analgesic effects, it is also equiptent to morphine in relieving abstinence symptoms from chronic opiate (heroin, morphine) use. For this reason, it is often used to alleviate or prevent the onset of opiate withdrawal by street users of heroin and methadone. The drug is most often administered orally. Like other opiates, Oxycodone can also depress the respiratory system resulting in suffocation and death when overdosed. Oxycodone is very addictive, both physically and psychologically. Some physical indications of Oxycodone abuse include extreme loss of appetite and weight, cramps, nausea, vomiting, excessive scratching and complaint of itching, excessive sweating, constipation, pin-point pupils and watery eyes, reduced vision, drowsiness, euphoria, trance-like states, excessive thirst, tremors, twitching, irritability, hallucinations and lethargy.

Phencyclidine (PCP)
Phencyclidine, commonly known as PCP or "angel dust" is used primarily as recreational drug due to its hallucinogenic effects. It is generally self-administered by intravenous injection or by inhalation and concentrates fastest in fatty tissues and the brain. The effects of PCP are very much dose related. Small amounts of Phencyclidines (PCP) are central nervous system stimulants that produce alertness, wakefulness, increased energy, increased heart rate, and decreased sense of pain and touch, and an overall feeling of well-being. Large doses of Phencyclidine (PCP) can result in death due to convulsions, heart and lung failure and coma. Large repeated doses of Phencyclidine (PCP) could develop tolerances and physiological dependency and lead to its abuse. PCP can be found in urine within 4 to 6 hours after use and will remain in urine for 7 to 14 days. Phencyclidine is excreted in the urine as an unchanged drug (4% to 19%) and conjugated metabolites (25% to 30%).

Propoxyphene (PPX)
Propoxyphene is a prescription drug for the relief of pain. Overdose of propoxyphene have the symptoms including analgesia, stupor, respiratory depression and coma. The half-life of propoxyphene is 8 to 24 hours. Propoxyphene reaches its peak in 1 to 2 hours after oral administration.

Synthetic Cannabis (K2)
Synthetic cannabis is a psychoactive designer drug derived of natural herbs sprayed with synthetic chemicals that, when consumed, allegedly mimic the effects of cannabis, it is best known by the brand names K2 and Spice. Synthetic cannabis act on the body in a similar way to cannabinoids naturally found in cannabis, such as THC. A large and complex variety of synthetic cannabis most often cannabinoidexanone, JWH-018, JWH-073, or HU-210, are used in an attempt to avoid the laws that make cannabis illegal, making synthetic cannabis a designer drug. Although synthetic cannabis does not produce positive results in drug tests for cannabis, it is

Methamphetamine (MET 300)	d-Methamphetamine	300
Methadone (MTD 300)	Methadone	300
Methadone (MTD 200)	Methadone	200
Methadone Metabolite (EDDP 300)	2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine (EDDP)	300
Methylenedioxyamphetaminine - ecstacy (MDMA 500)	3,4-Methylenedioxyamphetaminine HCl (MDMA)	500
Methylenedioxyamphetaminine - ecstacy (MDMA 300)	3,4-Methylenedioxyamphetaminine HCl (MDMA)	300
Morphine (MOP 300)	Morphine	300
Morphine (MOP 100)	Morphine	100
Opiate (OPH)	Morphine	2000
Oxycodone (OXY)	Oxycodone	100
Phencyclidine (PCP)	Phencyclidine	25
Propoxyphene (PPX)	d-Propoxyphene	300
Synthetic Cannabis (K2 50)	JWH-018 / JWH-073	50
Synthetic Cannabis (K2 25)	JWH-018 / JWH-073	25
Tricyclic Antidepressants (TCA)	Nortriptyline	1000
Tramadol (TRA 1000)	Tramadol	1000
Tramadol (TRA 200)	Tramadol	200
6-Monoacetylmorphine (6-MAM)	6-Monoacetylmorphine	10

Configurations of the Multi-Drug Urine Test Cup can consist of any combination of the above listed drug analytes. *It is intended for forensic use only.* This assay provides a qualitative, preliminary test result. A more specific analytical method must be used in order to obtain a confirmatory result. Gas Chromatography/Mass Spectrometry (GC/MS) or Liquid Chromatography/Tandem Mass Spectrometry (LC/MS-MS) are the preferred confirmatory methods. Professional judgment should be applied to any drug test result, particularly when preliminary positive results are indicated.

SUMMARY

Amphetamine (AMP)
Amphetamine and the structurally related "designer" drugs are sympathomimetic amines whose biological effects include potent central nervous system (CNS) stimulation, anorectic, hyperthermic, and cardiovascular properties. They are usually taken orally, intravenously, or by smoking. Amphetamines are readily absorbed from the gastrointestinal tract and are then either deactivated by the liver or excreted unchanged in the urine. Methamphetamine is partially metabolized to amphetamine and its major active metabolite. Amphetamines increase the heart rate and blood pressure, and suppress the appetite. Some studies indicate that heavy abuse may result in permanent

1	2	3	4
---	---	---	---

possible to detect its metabolites in human urine. The synthetic cannabinoids contained in synthetic cannabis products have been made illegal in many European countries. On November 24, 2010, the U.S. Drug Enforcement Administration announced it would use emergency powers to ban many illegal cannabinoids within a month. As of March 1, 2011, five cannabinoids, JWH-018, JWH-073, CP-47,497, JWH-200, and cannabicyclohexanol are now illegal in the US.

Tricyclic Antidepressants (TCA)
Tricyclic Antidepressants are a group of antidepressant drugs that are commonly used for treatment of depressive disorders. TCAs can be taken orally or by intramuscularly injection (IM). The symptoms of TCAs overdoses include agitation, confusion, hallucinations, hyperthermia, seizures, and EKG changes. The half-life of TCA varies from a few hours to several days. The commonly used TCAs are excreted with a very low percentage of unchanged drugs in the urine. Therefore, detection of the metabolites of TCAs in human urine has been used for screening the abuse of TCAs.

Tramadol (TRA)
Tramadol is a quasi-narcotic analgesic used in the treatment of moderate to severe pain. It is a synthetic analog of codeine, but has a low binding affinity to the μ-opioid receptors. It has been for the treatment of diabetic neuropathy and restless leg syndrome. Large doses of Tramadol could develop tolerances and physiological dependency and lead to its abuse. Both Δ (Δ) and L forms of the isomers are controlled substances. Approximately 30% of the dose is excreted in the urine as unchanged drug, whereas 60% is excreted as metabolites. The major pathways appear to be N- and O-demethylation, glucuronidation or sulfation in the liver.

6-Monoacetylmorphine (6-MAM)
6-Monoacetylmorphine (6-MAM) or 6-acetylmorphine (6-AM) is one of three active metabolites of heroin (diacetylmorphine), the others being morphine and the much less active 3-monoacetylmorphine (3-MAM). 6-MAM is rapidly created from heroin in the body, and then is either metabolized into morphine or excreted in the urine. 6-MAM remains in the urine for no more than 24 hours. So a urine specimen must be collected soon after the last heroin use, but the presence of 6-MAM guarantees that heroin was in fact used as recently as within the last day. 6-MAM is naturally found in the brain, but in such small quantities that detection of this compound in urine virtually guarantees that heroin has recently been consumed.

PRINCIPLE OF THE PROCEDURE

DRUGS-OF-ABUSE TESTS:
Multi-Drug Urine Test Cup is a competitive immunoassay that is used to screen for the presence of various drugs and drug metabolites in urine. It is chromatographic absorbent device in which, drugs within a urine sample, competitively combined to a limited number of drug monoclonal antibody (mouse) conjugate binding sites. When the test is activated, the urine is absorbed into each test strip by capillary action, mixes with the respective drug monoclonal antibody conjugate, and flows across a pre-coated membrane. When drug within the urine sample is below the detection level of the test, respective drug monoclonal antibody conjugate binds to the respective drug-protein conjugate immobilized in the Test Region (T) of the test strip. This produces a colored Test line in the Test Region (T) of the strip, which, regardless of its intensity, indicates a negative test result.

1	2	3	4
---	---	---	---

DRUGS-OF-ABUSE TESTS:
A. Precision and Sensitivity
To investigate the precision and sensitivity, each drug samples were analyzed at the following concentrations: +100% cutoff, +75% cutoff, +50% cutoff, +25% cutoff, cutoff, -25% cutoff, -50% cutoff, -75% cutoff and -100% cutoff. All concentrations were confirmed with GC-MS. The study was performed 2 runs /day and lasted 25 days using three different lots of the corresponding drug of abuse test. Totally 3 operators participated in the study of the corresponding drug of abuse test. Each of the 3 operators tests 2 aliquots at each concentration for each lot per day (2 runs /day), for a total of 50 determinations per concentration per lot of the corresponding drug of abuse test.

Drug test	Approximate concentration of sample (ng/mL)	Number of determinatio ns per lot	Results Negative/ Positive		
			Lot 1	Lot 2	Lot 3
AMP 1000	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50
	+50% Cutoff	50	0/50	0/50	0/50
	+25% Cutoff	50	0/50	0/50	0/50
	Cutoff	50	14/36	13/37	13/37
	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
AMP 500	+75% Cutoff	50	0/50	0/50	0/50
	+50% Cutoff	50	0/50	0/50	0/50
	+25% Cutoff	50	0/50	0/50	0/50
	Cutoff	50	12/38	12/38	12/38
	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50
AMP 300	+50% Cutoff	50	0/50	0/50	0/50
	+25% Cutoff	50	0/50	0/50	0/50
	Cutoff	50	12/38	12/38	12/38
	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50
	+50% Cutoff	50	0/50	0/50	0/50

damage to certain essential nerve structural in the brain. The effects of Amphetamines generally last 2–4 hours following use and the drug has a half-life of 4–24 hours in the body. About 30% of amphetamines are excreted in the urine in unchanged form, with the remainder as hydroxylated and deaminated derivatives. It can be detected in the urine for 1 to 2 days after use.

Barbiturates (BAR)
Barbiturates are central nervous system depressants. They are usually administered orally but are sometimes injected intramuscularly and intravenously. Barbiturates range from short-acting (approximately 15 minutes, such as secobarbital) to long-acting (24 hours or longer, such as Phenobarbital). Short-acting barbiturates are extensively metabolized in the body, while the long-acting ones are secreted primarily unchanged. Barbiturates produce alertness, wakefulness, increased energy, reduced hunger, and an overall feeling of well being. Large doses of Barbiturate could develop tolerance and physiological dependency and lead to its abuse.

Benzodiazepines (BZO)
Benzodiazepines are a class of drugs that are often therapeutically used as anxiolytics, anti-convulsants and sedative hypnotics. Benzodiazepines manifest their presence by analgesia, drowsiness, confusion, diminished reflexes, lowering of body temperature, respiratory depression, blockade of adrenergic response, and a decrease in peripheral resistance without an impact on the cardiac index. The major pathways of elimination are the kidneys (urine) and the liver where it is conjugated to glucuronic acid. Large doses of Benzodiazepines could develop tolerances and physiological dependency and lead to its abuse. Only trace amounts (less than 1%) of Benzodiazepines are excreted unaltered in the urine, most of Benzodiazepines in urine is conjugated drug. Oxazepam, a common metabolite of many benzodiazepines, remains detectable in urine for up to one week, which makes Oxazepam a useful marker of Benzodiazepines abuse.

Buprenorphine (BUP)
Buprenorphine is a potent analgesic often used in the treatment of opioid addiction. The drug is sold under the trade names Subutex®, Buprenex®, Temgesic® and Suboxone®, which contain Buprenorphine HCl alone or in combination with Naloxone HCl. Therapeutically, Buprenorphine is used as a substitution treatment for opioid addicts. Substitution treatment is a form of medical care offered to opiate addicts (primarily heroin addicts) based on a similar or identical substance to the drug normally used. In substitution therapy, Buprenorphine is as effective as Methadone but demonstrates a lower level of physical dependence. Concentrations of free Buprenorphine and Nortbuprenorphine in urine may be less than 1 ng/ml after therapeutic administration, but can range up to 20 ng/ml in abuse situations. The plasma half-life of Buprenorphine is 2-4 hours. While complete elimination of a single dose of the drug can take as long as 6 days, the window of detection for the parent drug in urine is thought to be approximately 3 days. Substantial abuse of Buprenorphine has also been reported in many countries where various forms of the drug are available. The drug has been diverted from legitimate channels through theft, doctor shopping, and fraudulent prescriptions, and been abused via intravenous, sublingual, intranasal and inhalation routes.

Cocaine (COC)
Cocaine derived from leaves of coca plant, is a potent central nervous system stimulant and a local anesthetic. Among the psychological effects induced by using cocaine are euphoria, confidence and a sense of increased energy, accompanied by increased heart rate, dilation of the pupils, fever, tremors and sweating. Cocaine is excreted in urine primarily as benzoylecgonine in a short period of time.

1	2	3	4
---	---	---	---

When sample drug levels are at or above the detection level of the test, the free drug in the sample binds to the respective drug monoclonal antibody conjugate, preventing the respective drug monoclonal antibody conjugate from binding to the respective drug-protein conjugate immobilized in the Test Region (T) of the device. This prevents the development of a distinct colored band in the test region, indicating a preliminary positive result.

To serve as a procedure control, a colored line will appear at the Control Region (C) of each strip, if the test has been performed properly.

ADULTERATION CONTROL:
In general, all adulteration control tests are based on the chemical reactions of the indicator reagents on the pads with components in the urine sample affecting color changes. Results are obtained by comparing the color on each of the test pads with the corresponding pad on the color chart.

Creatinine (CRE): Testing for sample dilution. In this assay, creatinine reacts with a creatinine indicator in an alkaline condition to form a purplish-brown color complex. The concentration of creatinine is directly proportional to the color intensity of the test pad.

Glutaraldehyde (GLU): Testing for the presence of exogenous aldehyde. In this assay, the aldehyde group on the glutaraldehyde reacts with an indicator to form a pink/purple color complex.

Nitrite (NIT): Testing for the presence of exogenous nitrite. Nitrite reacts with an aromatic amine to form a diazonium compound in an acid medium. The diazonium compound in turn couples with an indicator to produce a pink-red/purple color.

pH: Testing for the presence of acidic or alkaline adulterant. This test is based on the well-known double pH indicator method that gives distinguishable colors over wide pH range. The colors range from orange (low pH) to yellow and green to blue (high pH).

Specific Gravity (S.G.): Testing for sample dilution. This test is based on the apparent pKa change of certain pre-treated polyelectrolytes in relation to the ionic concentration. In the presence of an indicator, the colors range from dark blue or blue-green in urine of low ionic concentration to green and yellow in urine of higher ionic concentration.

Oxidants/Pyridinium Chlorochromate (OXI/PPC): Tests for the presence of oxidizing reagents such as bleach and hydrogen peroxide. Pyridinium Chlorochromate is commonly used adulterant. Normal human urine should not contain Oxidants or PPC.

WARNINGS AND PRECAUTIONS

- For external use only. Do not swallow.
- Discard after first use. The test cannot be used more than once.
- Do not use the test device beyond expiration date.
- Do not use the test device if the pouch is punctured or not well sealed.
- Keep out of the reach of children.
- The used test cup should be discarded according to local regulations.

STORAGE AND STABILITY

- Store at 35°F - 86°F (2°C - 30°C) in the sealed pouch up to the expiration date.

1	2	3	4
---	---	---	---

AMP 300	Cutoff	50	15/35	15/35	14/36
	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
BAR 300	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50
	+50% Cutoff	50	0/50	0/50	0/50
	+25% Cutoff	50	0/50	0/50	0/50
	Cutoff	50	12/38	14/36	14/36
BZO 300	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
BZO 300	+75% Cutoff	50	0/50	0/50	0/50
	+50% Cutoff	50	0/50	0/50	0/50
	+25% Cutoff	50	0/50	0/50	0/50
	Cutoff	50	13/37	12/38	11/39
	-25% Cutoff	50	50/0	50/0	50/0
BZO 200	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50
BZO 200	+50% Cutoff	50	0/50	0/50	0/50
	+25% Cutoff	50	0/50	0/50	0/50
	Cutoff	50	14/36	13/37	13/37
	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
BZO 100	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50

MOP 100	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50
	+50% Cutoff	50	0/50	0/50	0/50
OPI 2000	+25% Cutoff	50	0/50	0/50	0/50
	Cutoff	50	9/41	10/40	10/40
	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
OXY 100	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50
	+50% Cutoff	50	0/50	0/50	0/50
	+25% Cutoff	50	0/50	0/50	0/50
PCP 25	Cutoff	50	15/35	15/35	13/37
	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
PPX 300	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50
	+50% Cutoff	50	0/50	0/50	0/50
	+25% Cutoff	50	0/50	0/50	0/50
	Cutoff	50	12/38	12/38	12/38

20

PPX 300	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
K2 (50)	+75% Cutoff	50	0/50	0/50	0/50
	+50% Cutoff	50	0/50	0/50	0/50
	+25% Cutoff	50	0/50	0/50	0/50
	Cutoff	50	12/38	13/37	12/38
	-25% Cutoff	50	50/0	50/0	50/0
K2 (25)	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50
TCA 1000	+50% Cutoff	50	0/50	0/50	0/50
	+25% Cutoff	50	0/50	0/50	0/50
	Cutoff	50	11/39	11/39	12/38
	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
TRA 1000	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50
	+50% Cutoff	50	0/50	0/50	0/50

21

TRA 1000	+25% Cutoff	50	0/50	0/50	0/50
	Cutoff	50	14/36	14/36	15/35
	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
TRA 200	-100% Cutoff	50	50/0	50/0	50/0
	+100% Cutoff	50	0/50	0/50	0/50
	+75% Cutoff	50	0/50	0/50	0/50
	+50% Cutoff	50	0/50	0/50	0/50
	+25% Cutoff	50	0/50	0/50	0/50
6-MAM	Cutoff	50	13/37	14/36	13/37
	-25% Cutoff	50	50/0	50/0	50/0
	-50% Cutoff	50	50/0	50/0	50/0
	-75% Cutoff	50	50/0	50/0	50/0
	-100% Cutoff	50	50/0	50/0	50/0

22

B. Specificity

The following table lists the concentration of compounds (ng/mL) above which the Multi-Drug Urine Test Cup identified positive results at a read time of 5 minutes.

Compound	Concentration (ng/mL)
Amphetamine (AMP 1000)	
d-Amphetamine	1,000
d-l-Amphetamine	3,000
l-Amphetamine	50,000
(+/-) 3,4-methylenedioxymphetamine (MDA)	5,000
Phentermine	3,000
Hydroxyamphetamine	10,000

d-Methamphetamine	>100,000
l-Amphetamine	>100,000
(+/-) 3,4-Methylenedioxymphetamine (MDA)	>100,000
(+/-) 3,4-Methylenedioxymphetamine (MDMA)	>100,000
Phentermine	>100,000
d-Phenylethylamine	100,000
Tryptamine	100,000
p-Hydroxynorephedrine	100,000
Phenylpropanolamine	>100,000
(±) Phenylpropanolamine	>100,000
p-Hydroxyamphetamine	100,000
d-Norephedrine	100,000
Benzphetamine	>100,000
l-Ephedrine	>100,000
l-Epinephrine	>100,000
d-Epinephrine	>100,000
Amphetamine (AMP 500)	
d-Amphetamine	500
d-l-Amphetamine	1,500
l-Amphetamine	25,000
(+/-) 3,4-methylenedioxymphetamine (MDA)	2,500
Phentermine	1,500
Hydroxyamphetamine	5,000
d-Methamphetamine	>100,000
l-Amphetamine	>100,000
(+/-) 3,4-Methylenedioxymphetamine (MDA)	>100,000
(+/-) 3,4-Methylenedioxymphetamine (MDMA)	>100,000
Phentermine	>100,000
d-Phenylethylamine	100,000
Tryptamine	100,000
p-Hydroxynorephedrine	100,000
Phenylpropanolamine	>100,000
(±) Phenylpropanolamine	>100,000
p-Hydroxyamphetamine	100,000
d-Norephedrine	100,000
Benzphetamine	>100,000
l-Ephedrine	>100,000
l-Epinephrine	>100,000
d-Epinephrine	>100,000
Amphetamine (AMP 300)	
d-Amphetamine	300

23

d-Amphetamine	900
l-Amphetamine	15,000
(+/-) 3,4-methylenedioxymphetamine (MDA)	1,500
Phentermine	900
Hydroxyamphetamine	3,000
d-Methamphetamine	>100,000
l-Methamphetamine	>100,000
(+/-) 3,4-Methylenedioxymphetamine (MDA)	>100,000
(+/-) 3,4-Methylenedioxymphetamine (MDMA)	>100,000
Phentermine	>100,000
d-Phenylethylamine	100,000
Tryptamine	100,000
p-Hydroxynorephedrine	100,000
Phenylpropanolamine	>100,000
(±) Phenylpropanolamine	>100,000
p-Hydroxyamphetamine	100,000
d-Norephedrine	100,000
Benzphetamine	>100,000
l-Ephedrine	>100,000
l-Epinephrine	>100,000
d-Epinephrine	>100,000
Barbiturates (BAR 300)	
Secobarbital	300
Amobarbital	1,000
Alphenal	75
Alprobarbital	250
Butalbarbital	100
Butalbital	5,000
Butethal	500
Cyclopentobarbital	500
Pentobarbital	200
Phenobarbital	300
Benzodiazepines (BZO 300)	
Oxazepam	300
Alprazolam	150
α-Hydroxyalprazolam	1,500
Bromazepam	100
Chlordiazepoxide	500
Clobazam	750
Clonazepam	1,500
Clorazepate dipotassium	100

24

Diazepam	500
Estazolam	500
Flunitrazepam	2,500
Midazolam	2,000
Nitrazepam	2,000
Nordiazepam	500
Temazepam	250
Triazolam	1,000
Desalkylflurazepam	500
Lorazepam	5,000
Norclordiazepoxide	500
Nordazepam	1,000
Delorazepam	2,000
Demoxepam	5,000
Flurazepam	500
Benzodiazepines (BZO 200)	
Oxazepam	200
Alprazolam	100
α-Hydroxyalprazolam	1,000
Bromazepam	75
Chlordiazepoxide	500
Clobazam	500
Clonazepam	1,000
Clorazepate dipotassium	75
Diazepam	500
Estazolam	500
Flunitrazepam	2,000
Midazolam	1,000
Nitrazepam	1,000
Nordiazepam	500
Temazepam	200
Triazolam	750
Desalkylflurazepam	500
Lorazepam	4,000
Norclordiazepoxide	500
Nordazepam	750
Delorazepam	1,000
Demoxepam	4,000
Flurazepam	500
Benzodiazepines (BZO 100)	
Oxazepam	100

25

Alprazolam	50
α-Hydroxyalprazolam	500
Bromazepam	50
Chlordiazepoxide	500
Clobazam	750
Clonazepam	500
Clorazepate dipotassium	50
Diazepam	300
Estazolam	300
Flunitrazepam	1,000
Midazolam	500
Nitrazepam	500
Nordiazepam	300
Temazepam	150
Triazolam	500
Desalkylflurazepam	300
Lorazepam	2,500
Norclordiazepoxide	300
Nordazepam	500
Delorazepam	500
Demoxepam	2,500
Flurazepam	300
Buprenorphine (BUP 10)	
Buprenorphine	10
Norbuprenorphine	50
Buprenorphine 3-β-glucuronide	10
Norbuprenorphine 3-β-glucuronide	10
Morphine	>100,000
Oxymorphone	>100,000
Hydromorphone	>100,000
Cocaine (COC 300)	
Benzoylecgonine	300
Cocaine HCl	4,000
Cocacethylene	12,500
Ecgoinine	30,000
Ecgoinine methyl ester	>100,000
Cocaine (COC 150)	
Benzoylecgonine	150
Cocaine HCl	500
Cocacethylene	5,000

26

Ecgonine	15,000
Ecgonine methyl ester	>100,000
Cocaine (COC 100)	
Benzoylecgonine	100
Cocaine HCl	250
Cocacethylene	2,500
Ecgoinine	5,000
Ecgonine methyl ester	>100,000
Cannabinoids (THC 50)	
11-nor-Δ ⁹ -THC-9-COOH	50
11-nor-Δ ⁸ -THC-9-COOH	30
(±)-11-Hydroxy-Δ ⁹ -THC	2,500
Δ ⁸ -Tetrahydrocannabinol	2,000
Δ ⁹ -Tetrahydrocannabinol	5,000
Cannabinol	10,000
Cannabidiol (CBD)	100,000
Cannabidiol (CBD)	100,000
(±)-11-nor-9-carboxy-Δ ⁹ -THC	100
11-nor-Δ ⁹ -THC-carboxy glucuronide	100
Cannabinoids (THC 40)	
11-nor-Δ ⁹ -THC-9-COOH	40
11-nor-Δ ⁸ -THC-9-COOH	30
(±)-11-Hydroxy-Δ ⁹ -THC	2,000
Δ ⁸ -Tetrahydrocannabinol	1,500
Δ ⁹ -Tetrahydrocannabinol	4,000
Cannabinol	10,000
Cannabidiol (CBD)	100,000
(±)-11-nor-9-carboxy-Δ ⁹ -THC	100
11-nor-Δ ⁹ -THC-carboxy glucuronide	100
Cannabinoids (THC 25)	
11-nor-Δ ⁹ -THC-9-COOH	25
11-nor-Δ ⁸ -THC-9-COOH	15
(±)-11-Hydroxy-Δ ⁹ -THC	1,250
Δ ⁸ -Tetrahydrocannabinol	1,000
Δ ⁹ -Tetrahydrocannabinol	2,500
Cannabinol	5,000
Cannabidiol (CBD)	75,000
(±)-11-nor-9-carboxy-Δ ⁹ -THC	50
11-nor-Δ ⁹ -THC-carboxy glucuronide	75

27

Cotinine (COT)	
Cotinine	200
Ethyl Glucuronide (ETG)	
Ethyl Glucuronide	500
Ethanol	>100,000
Glucuronic acid	>100,000
Methanol	>100,000
D-glucose	>100,000
Fentanyl (FTY)	
Fentanyl	20
Carfentanyl	50
Sufentanyl	150
Alfentanyl	>10,000
Norfentanyl	>10,000
Buprione	>10,000
Ketamine (KET 1000)	
Ketamine	1,000
2-Fluorodeschloroketamine	2,000
Methadone	50,000
Pethidine	12,500
Methylamphetamine	12,500
Methoxyphenamine	12,500
Promethazine	25,000
Phencyclidine	25,000
Ketamine (KET 500)	
Ketamine	500
2-Fluorodeschloroketamine	1,000
Methadone	25,000
Pethidine	7,500
Methylamphetamine	7,500
Methoxyphenamine	7,500
Promethazine	12,500
Phencyclidine	12,500
Methamphetamine (MET 1000)	
d-Methamphetamine	1,000
d-Amphetamine	50,000
Chloroquine	50,000
(+/-)-Ephedrine	50,000

28

(-)-Methamphetamine	25,000
(+/-) 3,4-Methylenedioxymphetamine (MDMA)	4,000
β-Phenylethylamine	50,000
Trimethoprimamide	10,000
l-Amphetamine	75,000
(+/-) 3,4-Methylenedioxymphetamine (MDA)	30,000
Mephentermine	50,000
Methoxyphenamine	50,000
Fenfluramine	75,000
Procaine	>100,000
d-Amphetamine	>100,000
p-Hydroxymethamphetamine	30,000
Mephentermine	50,000
(1R,2S)-(-)-Ephedrine	>100,000
l-Phenylephrine	>100,000
d-Methamphetamine	1,000
(+/-) 3,4-Methylenedioxymphetamine (MDA)	>100,000
Methamphetamine (MET 500)	
d-Methamphetamine	500
d-Amphetamine	25,000
Chloroquine	25,000
(+/-)-Ephedrine	25,000
(-)-Methamphetamine	12,500
(+/-) 3,4-Methylenedioxymphetamine (MDMA)	2,000
β-Phenylethylamine	25,500
Trimethoprimamide	5,000
l-Amphetamine	50,000
(+/-) 3,4-Methylenedioxymphetamine (MDA)	15,000
Mephentermine	25,000
Methoxyphenamine	2