



# T-Dip Multi-Drug Urine Test Panel

Catalogue No. See Box Label

SAFELife™ T-Dip Multi-Drug Urine Test Panel is competitive binding, lateral flow immunochromatographic assays for qualitative and simultaneous detection of Amphetamine, Secobarbital, Buprenorphine, Oxazepam, Cocaine, 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine (EDDP), Ethyl Glucuronide, Fentanyl, Synthetic Cannabinoids, Methylenedioxymethamphetamine, Methamphetamine, Morphine, Methadone, Opiate, Oxycodone, Phencyclidine, Propoxyphene, Nortriptyline, Cannabinoids, Tramadol, Cotinine, Ketamine, and Alcohol in human urine with below cutoff concentrations and approximate detection time:

Drug (Identifier)	Calibrator	Cut-off level	Minimum detection time	Maximum detection time
6-Monoacetylmorphine (6-MAM)	6-Monoacetylmorphine	10 ng/mL	2 hours	8 hours
Amphetamine (AMP300)	d-Amphetamine	300 ng/mL	2-7 hours	1-2 days
Amphetamine (AMP500)	d-Amphetamine	500 ng/mL	2-7 hours	1-2 days
Amphetamine (AMP1000)	d-Amphetamine	1000 ng/mL	2-7 hours	1-2 days
Secobarbital (BAR)	Secobarbital	300 ng/mL	2-4 hours	1-4 days
Buprenorphine (BUP5)	Buprenorphine	5 ng/mL	4 hours	1-3 days
Buprenorphine (BUP10)	Buprenorphine	10 ng/mL	4 hours	1-3 days
Oxazepam (BZO100)	Oxazepam	100 ng/mL	2-7 hours	1-2 days
Oxazepam (BZO200)	Oxazepam	200 ng/mL	2-7 hours	1-2 days
Oxazepam (BZO300)	Oxazepam	300 ng/mL	2-7 hours	1-2 days
Cocaine (COC100)	Benzoylcegonine	100 ng/mL	1-4 hours	2-4 days
Cocaine (COC150)	Benzoylcegonine	150 ng/mL	1-4 hours	2-4 days
Cocaine (COC300)	Benzoylcegonine	300 ng/mL	1-4 hours	2-4 days
Cotinine (COT)	Cotinine	200 ng/mL	2-8 hours	1-7 days
EDDP100	2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine	100 ng/mL	3-8 hours	1-3 days
EDDP300	2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine	300 ng/mL	3-8 hours	1-3 days
Ethyl Glucuronide (EtG300)	Ethyl Glucuronide	300 ng/mL	1-2 hours	Up to 3+ days
Ethyl Glucuronide (EtG500)	Ethyl Glucuronide	500 ng/mL	1-2 hours	Up to 3+ days
Fentanyl (FTY)	Norfentanyl	20 ng/mL	1-4 hours	1-3 days
Gabapentin (GAB)	Gabapentin	2000 ng/mL	5-7 hours	Up to 2 days
Hydromorphone (HMO)	Hydromorphone	300 ng/mL	4-6 hours	1-2 days
Synthetic Cannabinoid (K2)	JWH-018 Pentanoic Acid JWH-073 Butanoic Acid	50 ng/mL 50 ng/mL	8-12 hours	Up to 5+ days
Ketamine (KET300)	Ketamine	300 ng/mL	2-4 hours	2-3 days
Ketamine (KET1000)	Ketamine	1000 ng/mL	2-4 hours	2-3 days
Kratom (KRA100)	Mitragynine	100 ng/mL	7 hours	5-6 days
Kratom (KRA300)	Mitragynine	300 ng/mL	7 hours	5-6 days
Lysergic acid diethylamide (LSD)	Lysergic acid diethylamide	20 ng/mL	2.5 hours	Up to 5+ days
Methylenedioxymethamp hetamine (MDMA)	3,4-Methylenedioxymethamp hetamine (MDMA)	500 ng/mL	2-7 hours	2-4 days
Methamphetamine (MET300/mAMP300)	D(+)-Methamphetamine	300 ng/mL	2-7 hours	2-4 days
Methamphetamine (MET500/mAMP500)	D(+)-Methamphetamine	500 ng/mL	2-7 hours	2-4 days
Methamphetamine (MET1000/mAMP1000)	D(+)-Methamphetamine	1000 ng/mL	2-7 hours	2-4 days
Morphine (MOP100/OPI100)	Morphine	100 ng/mL	2 hours	2-3 days
Morphine (MOP300/OPI300)	Morphine	300 ng/mL	2 hours	2-3 days
Methadone (MTD200)	Methadone	200 ng/mL	3-8 hours	1-3 days
Methadone (MTD300)	Methadone	300 ng/mL	3-8 hours	1-3 days
Methaqualone (MQL)	Methaqualone	300 ng/mL	6-8 hours	Up to 7+ days
Opiate (OPI)	Morphine	2000ng/mL	2 hours	2-3 days
Oxycodone (OXY)	Oxycodone	100 ng/mL	4 hours	1-3 days
Phencyclidine (PCP)	Phencyclidine	25 ng/mL	4-6 hours	7-14days
Pregabalin (PGB)	Pregabalin	500 ng/mL	6-8hours	1-3 days
Propoxyphene (PPX)	Propoxyphene	300 ng/mL	2 hours	2-3 days
Nortriptyline (TCA)	Nortriptyline	1000ng/mL	8-12hours	2-7 days
Cannabinoids (THC15)	11-nor-Δ9-THC-9-COOH	25 ng/mL	2 hours	Up to 5+ days
Cannabinoids (THC25)	11-nor-Δ9-THC-9-COOH	25 ng/mL	2 hours	Up to 5+ days
Cannabinoids (THC40)	11-nor-Δ9-THC-9-COOH	40 ng/mL	2 hours	Up to 5+ days
Cannabinoids (THC50)	11-nor-Δ9-THC-9-COOH	50 ng/mL	2 hours	Up to 5+ days
Tramadol (TRA 100)	Tramadol	100 ng/mL	8-12hours	3-7 days
Tramadol (TRA 200)	Tramadol	200 ng/mL	8-12hours	3-7 days
Tramadol (TRA 1000)	Tramadol	1000 ng/mL	8-12 hours	3-7 days
Alcohol (ETOH)	Alcohol	0.04 g/dL	-	-

Configurations of the SAFELife™ T-Dip Multi-Drug Urine Test Panel can consist of any combinations of the above listed drug analytes.

*It is intended for forensic use only.*

It is not intended to distinguish between prescription use or abuse of these drugs. Professional judgment should be applied to any drug of abuse test result, particularly in evaluating a preliminary positive result.

The test provides only preliminary test results. To obtain a confirmed analytical result, a more specific alternate chemical method must be used. Chromatography/Mass Spectrometry (GC/MS) or Liquid Chromatography/Tandem Mass Spectrometry (LC/MS-MS) is the recommended confirmatory method.

## WARNINGS AND PRECAUTIONS

- This kit is for external use only. Do not swallow.
- Discard after first use. The test cannot be used more than once.
- Do not use test kit beyond expiry date.
- Do not use the kit if the pouch is punctured or not sealed.
- Keep out of the reach of children.

## CONTENT OF THE KIT

- 25 SAFELife™ T-Dip test devices, each in one pouch with one desiccant. The desiccants are for storage purposes only, and is not used in the test procedures.

- One (1) Package Insert
- 5 Adulteration Color Comparison Charts (If equipped)

## MATERIAL REQUIRED BUT NOT PROVIDED

- Urine collection cup
- Timer or clock

## STORAGE AND STABILITY

Store at 39°F-86°F (4°C-30°C) in the sealed pouch up to the expiration date. Keep away from direct sunlight, moisture and heat. DO NOT FREEZE.

## SPECIMEN COLLECTION

### WHEN TO COLLECT URINE FOR THE TEST?

Collect the urine sample for the test in the minimum detection time after the suspected drug use. Exactly when the urine sample is collected is very important in detecting any drug. This is because each drug is cleared by the body at different rates. Please refer to the section "WHAT IS THE CUT-OFF VALUE AND APPROXIMATE DETECTION TIME?" in this instruction for use for the minimum/maximum detection time for each drug.

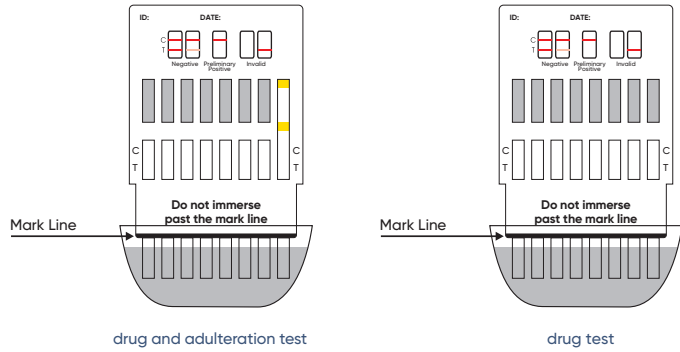
### HOW TO COLLECT URINE?

- Urine directly into the urine collection cup. Urine samples may be refrigerated at 36°F-47°F (2°C-8°C) and stored up to forty-eight hours. For longer storage, freeze the samples at -4°F (-20°C) or below.
- Bring frozen or refrigerated samples to room temperature before testing. Previously frozen or refrigerated samples should be well-mixed before analysis. Cloudy specimens should be centrifuged before analysis
- Use only clear aliquots for testing.

## TEST PROCEDURE

Test should be conducted between room temperature 65°F-86°F (18°C-30°C)

- Open the sealed pouch by tearing along the notch. Remove the test device from the pouch.
- Hold one side of the device with one hand. Use the other hand to pull out the cap and expose the absorbent end.
- Immerse the absorbent end into the urine sample for approximately 10 seconds. **Make sure that the urine level is not above the Mark Line printed on the front of the device.**
- Re-cap the device and lay it flat on a clean, dry, non-absorbent surface.
- For the adulteration strip(s) if equipped, read results immediately, or at 30 seconds, or at 45 second s and compare each adulterant pad to verify pad color is within acceptable range according to the Adulteration Color Comparison Chart. If the results indicate adulteration, do not read the drug test results. Obtain a new urine specimen again with new collection cup, and test again with new test device.
- For the Alcohol test, read the results at 2 minutes. **Do not read results after 2 minutes.**
- For the drug tests, read the results for the drugs at 5 minutes. **Do not read after 5 minutes.**



**Note: Results after more than 5 minutes may be not accurate and should not be read.**

## READING THE RESULTS

### DRUGS TESTS:

#### Negative (-)

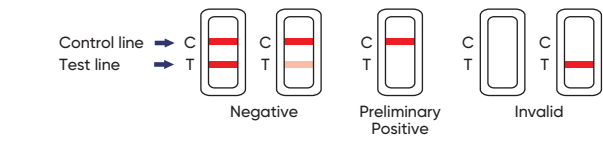
A colored band is visible in each Control Region (C) and the appropriate Test Region (T). It indicates that the concentration of the corresponding drug of that specific test zone is zero or below the detection limit of the test.

#### Preliminary Positive (+)

A colored band is visible in each Control Region (C). No color band appears in the appropriate Test Region (T). It indicates a preliminary positive result for the corresponding drug of that specific test zone.

#### Invalid

If a colored band is not visible in each of the Control Region (C) or a color band is only visible in each of the Test Region (T), the test is invalid. Another test should be run to re-evaluate the specimen. If the new test still provides an invalid result, please contact the distributor from whom you purchased the product. When calling, be sure to provide the lot number of the test.



**Note: There is no meaning attributed to line color intensity or width.**

The preliminary positive test result does not always mean that a person took illegal drugs. The negative test result does not always mean that a person did not take illegal drugs. There could be a number of factors that aect the reliability of drug tests. Certain drugs of abuse tests are more accurate than others.

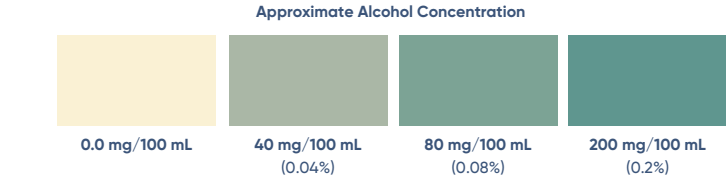
### ALCOHOL TEST:

#### Negative (-)

Almost no color change on test pad in comparison with the back-ground of the provided colored chart. The negative result indicates that the concentration of ethyl alcohol in urine is less than 0.04%.

#### Preliminary positive (+)

A distinct color developed all over the pad. The positive result indicates that the concentration of ethyl alcohol in urine is 0.04% or higher.



#### Invalid

The test should be considered invalid if only the edge of the reaction pad turned color that might be ascribed to insufficient sampling. The subject should be re-tested.

**IMPORTANT:** The result you obtained is called preliminary for a reason. The sample should be tested by a laboratory in order to determine if a drug is actually present. Send any sample which does not give a negative result to a laboratory for further testing.

#### What Is the False Positive Test?

The definition of the false positive test would be the instance where a substance is identified incorrectly by the SAFELife™ T-Dip Multi-Drug Urine Test Panel. The most common causes of the false positive test are cross reactants. Certain foods and medicines, diet plan drugs and nutritional supplements may cause the false positive test result.

#### What Is the False Negative Test?

The definition of the false negative test is that the initial drug is present but isn't detected by the SAFELife™ T-Dip Multi-Drug Urine Test Panel. If the sample is diluted or adulterated, it may cause false negative result.

If suspect someone is taking drugs but get the negative test results, please test again at another time, or test for different drugs.

## TEST LIMITATIONS

- This test has been developed for testing urine samples only. No other fluids have been evaluated. DO NOT use this device to test anything but urine.
- Adulterated urine samples may produce erroneous results. Strong oxidizing agents such as bleach (hypochlorite) can oxidize drug analytes. If a sample is suspected of being adulterated, obtain a new sample.
- It is possible that technical or procedural errors, as well as other interfering substances in the urine sample may cause false results.
- This test is a qualitative screening assay. It is not designed to determine the quantitative concentration of drugs or the level of intoxication.

## SUMMARY

### 6-Monoacetylmorphine (6-MAM)

Heroin is rapidly metabolized in the body. The half-life in blood is only 3-9 minutes. It is degraded by esterase in the body to 6-monoacetylmorphine (hereinafter abbreviated as 6-MAM) and the molecular formula is C<sub>17</sub>H<sub>23</sub>NO<sub>5</sub>. 6-MAM is deacetylated in the body to form morphine, and morphine cannot be acetylated to form 6-MAM in vivo. 6-MAM in the human body is only derived from the metabolism of heroin. Therefore, the US Department of Health and Human Services (DHHS) recommended 6-monoacetylmorphine as a specific test for heroin abuse.

### 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 with a half-life of about 12 hours. It can be detected in the urine for 1 to 2 days after use. Amphetamine is metabolized to deaminated (hippuric and benzoic acids) and hydroxylated metabolites. 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 damage to certain essential nerve structural in the brain.

### Secobarbital (BAR)

Barbiturates are a class of central nervous system depressions. They have a wide range of half-life of 2 to 40 hours and can be detected in the urine for 1 to 4 days after use. Phenobarbital is a long acting barbiturate derivative that has been used as a daytime sedative and very extensively as an anticonvulsant. Pentobarbital and secobarbital are two examples of a short acting barbiturate sedative. Abuse of barbiturates can lead not only to impaired motor coordination and mental disorder, but also to respiratory collapse, coma and even death. Barbiturates are taken orally, rectally, or by intravenous and intramuscular injections. Short-acting barbiturates will generally be excreted in urine as metabolites, while the long-acting barbiturates will primarily appear unchanged.

### 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™; all of which contain Buprenorphine HCl alone or in combination with Naloxone HCl. Therapeutically, Buprenorphine is used as a substitution treatment for opioid addicts. A 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. 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 detection window for the parent drug in urine is thought to be approximately 3 days.

### Oxazepam (BZO)

Benzodiazepines are the most widely used anxiolytic drugs. They are used extensively as anti-anxiety agents, hypnotics, muscle relaxants and anti-convulsants. They are taken orally or sometimes by injection and have a wide range of half-life from 2 to 40 hours. They can generally be detected for 1 to 2 days after Benzodiazepines use. Benzodiazepines are metabolized in the liver. Some Benzodiazepines and their metabolites are excreted in the urine. Their use can result in drowsiness and/or confusion. Benzodiazepines potentiate alcohol and other CNS depressants. Psychological and physical dependence on benzodiazepines can develop if high doses of the drug are given over a prolonged period.

### 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.

### Cotinine (COT)

Cotinine is an alkaloid found in tobacco and is also a major metabolite of Nicotine, which produces stimulation of the autonomic ganglia and central nervous system when in humans. Nicotine is found in tobacco products such as cigarettes, tobacco chew, and nicotine patches or gums. It is an addictive substance and is poisonous in a large amount. In addition to addiction, some of the other substances within tobacco products, such as carbon monoxide or tar, are dangerous to the body and can lead to medical conditions such as emphysema, lung cancer, and heart disease. In a 24-hour urine, approximately 5% of a nicotine dose is excreted as unchanged drug with 10% as cotinine and 35% as hydroxycotinine; the concentrations of other metabolites are believed to account for less than 5%. While Cotinine is thought to be an inactive metabolite, its elimination profile is more stable than that of Nicotine which is largely urine PH dependent. Cotinine is stable in body fluids and has a relatively long half-life of approximately 17 hours, and is typically detectable for several days (up to one week) after the use of tobacco, therefore the detection of Cotinine is less dependent on the time of sampling than that of Nicotine. Nicotine and Cotinine are rapidly eliminated by the kidney; the window of detection for cotinine in urine at a cutoff level of 200 ng/mL is expected to be up to 2-3 days after nicotine use.

### 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 screening.

### Ethyl Glucuronide (EtG)

Ethyl Glucuronide is a direct metabolite of alcohol. Presence in urine may be used to detect recent alcohol intake, even after alcohol is no longer measurable. Traditional laboratory methods detect the actual alcohol in the body, which reflects current intake within the past few hours (depending on how much was consumed). The presence of EtG in urine is a definitive indicator that it can be detected in the urine for 3 to 4 days after drinking alcohol even alcohol is eliminated from the body. Therefore, EtG is a more accurate indicator of the recent intake of alcohol than measuring for the presence of alcohol itself. The EtG test can aid in the diagnosis of drunk driving and alcoholism, which has important significance in the forensic identification and medical examination.

### Fentanyl (FTY)

Fentanyl is a potent, synthetic narcotic analgesic with a rapid onset and short duration of action. It was first synthesized by Janssen Pharmaceutica (Belgium) in the late 1950s, and it is approximately 100 times more potent than morphine. Fentanyl is a strong agonist at the μ-opioid receptors. Historically it has been used to treat breakthrough pain and is commonly used in pre-procedures as a pain reliever as well as an anesthetic in combination with a benzodiazepine. Fentanyl is frequently given intrathecally as part of spinal anesthesia or epidurally for epidural anesthesia and analgesia.

### Gabapentin (GAB)

Gabapentin (GAB), sold under the brand name Neurontin, is a medication used to treat epilepsy, neuropathic pain, hot flashes, and restless legs syndrome. In epilepsy, it may be used for those with partial seizures. It is recommended as one of a number of first line medications for the treatment of neuropathic pain in diabetic neuropathy, postherpetic neuralgia, and central neuropathic pain. It is also used to relieve nerve pain following shingles (a painful rash due to herpes zoster infection) in adults. The most common side effects of gabapentin include dizziness, fatigue, drowsiness, ataxia, peripheral edema (swelling of extremities), nystagmus, and tremor. Serious side effects may include an increased risk of suicide, aggressive behavior, and drug reaction with eosinophilia and systemic symptoms.

### Hydromorphone (HMO)

Hydromorphone, also known as dihydromorphone or dihydromorphinone, is a semi-synthetic strong analgesic. Its structure is similar to morphine, its analgesic effect is about 8 times that of morphine, and its side effects are lighter than morphine. It is mainly used for relieving medium-intensity pain caused by cancer, postoperative and soft tissue trauma.

### Ketamine (KET)

Ketamine is a sort of medical stupeficient. The principal metabolites are non-ketamine. Smoking, mainlining, snuffing, and dissolving into drink or alcohol are the primary method of use of ketamine. Ketamine is usually administered in combination with heroin, marijuana etc. for the relief of moderate to severe pain. Overdose may cause central nervous system effects, do harm to liver and kidney, and even cause death. Ketamine is metabolized in the liver. Over 70% ketamine metabolites and only 5% original drugs are excreted in the urine. They can generally be detected for 2 to 4 hours after ketamine use.

### Synthetic cannabinoids (K2)

Synthetic cannabinoids are psychoactive designer drugs derived of natural herbs sprayed with synthetic chemicals that, when consumed, allegedly mimic the effects of cannabis, they are best known by the brand names K2 and Spice. Synthetic cannabinoids act on the body in a similar way to cannabinoids naturally found in cannabis, such as THC. Although synthetic cannabinoids do not produce positive results in drug tests for cannabis, it is possible to detect the metabolites in human urine.

### Kratom (KRA)

Kratom (Mitragyna speciosa) is a plant indigenous to Thailand and Southeast Asia. Kratom leaves produce complex stimulant and opioid-like analgesic effects. In Asia, it is often used to stave off fatigue and to manage pain, diarrhea, cough, and opioid withdrawal. Recently, kratom has become widely available in the United States and Europe by means of smoke shops and the Internet. The clinical manifestations of kratom are not well defined and studies are limited, but its safety profile has become a national and international concern, primarily due to excessive consumption being linked to increase in hospital visits for hepatic injury, seizures, coma, and death. The main active ingredients include Mitragynine and 7-Hydroxymitragynine, which can be detected in urine up to 72 hrs (1-3).

### Lysergic acid diethylamide (LSD)

Lysergic acid diethylamide (LSD) is a white powder or colorless liquid that is a strong semi artificial hallucinogen. LSD is manufactured from Lysergic acid which occurs naturally in the ergot fungus that grows on wheat and rye. It is a schedule I controlled substance, available in liquid, Powder, tablet (microdots), and capsule form. LSD is a non-selective 5-HTagonost, may exert its hallucinogenic effect by interacting with 5-HT 2A receptors as a partial agonist and modulating the NMDA receptors, producing a marked slowing of the firing rate of serotonergic neurons. LSD can cause the user's senses, feelings, memory, and self-awareness to intensify and change for 6 to 12 hours. In addition to causing mental confusion, LSD can also cause physical pain, with symptoms in the nervous system, cardiovascular, and digestive systems. Most LSD users use marijuana, heroin, or other drugs together.

### Methylenedioxymethamphetamine (MDMA)

Methylenedioxymethamphetamine (ecstasy) is a designer drug first synthesized in 1914 by a German drug company for the treatment of obesity. Those who take the drug frequently report adverse effects, such as increased muscle tension and sweating. MDMA is not clearly a stimulant, although it has, in common with amphetamine drugs, a capacity to increase blood pressure and heart rate. MDMA does produce some perceptual changes in the form of increased sensitivity to light, difficulty in focusing, and blurred vision in some users. Its mechanism of action is thought to be via release of the neurotransmitter serotonin. MDMA may also release dopamine, although the general opinion is that this is a secondary effect of the drug (Nichols and Oberlander, 1990). The most pervasive effect of MDMA, occurring in virtually all people who took a reasonable dose of the drug, was to produce a clenching of the jaws.

### Methamphetamine (MET/mAMP)

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 and 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.

### Morphine (MOP/OPI)

The opiates such as heroin, morphine, and codeine are derived from the resin of opium poppy. The principal metabolites of opiates are morphine, morphine-3-glucuronide normorphine and codeine with a half-life of about 3 hours. Heroin is quickly metabolized to morphine. Thus, morphine and morphine glucuronide might both be found in the urine of a person who has taken only heroin. The body also changes codeine to morphine. Thus, the presence of morphine (or the metabolite, morphine glucuronide) in the urine indicates heroin, morphine and/or codeine use. The test for Morphine (MOP300/OPI300) of the SAFELife™ T-Dip Multi-Drug Urine Test Panel yields a positive result when the morphine in urine exceeds 300ng/mL.

### Methadone (MTD)

Methadone is a synthetic analgesic drug that is originally used in the treatment of narcotic addicts. Among the psychological effects induced by using methadone are analgesia, sedation and respiratory depression. Overdose of methadone may cause coma or even death. It is administered orally or intravenously and is metabolized in the liver and excreted in urine as methadone, EDDP, EMPD and methadal. The kidneys are a major route of methadone excretion. Methadone has a biological half-life of 15 to 60 hours.

### Methaqualone (MQL)

Methaqualone is a sedative that falls outside the benzodiazepine and barbiturate classes. It was once a popular pharmaceutical and recreational drug, but its current use is largely relegated to Africa, particularly South Africa. Because it faced few restrictions when it first entered the market, the drug was widely prescribed and perceived as uniquely safe. We now know methaqualone can be used recreationally and can cause physical dependence. A lot of lore exists around the effects. In reality, it's not a massively unique



substance and it can be compared to barbiturates, ethanol, carisoprodol, and meprobamate. Methaqualone is a sedative that increases the activity of the GABA receptors in the brain and nervous system. When GABA activity is increased, blood pressure drops and the breathing and pulse rates slow, leading to a state of deep relaxation. These properties explain why methaqualone was originally mainly prescribed for insomnia. Methaqualone peaks in the bloodstream within several hours, with a half-life of 20–60 hours. Regular users build up a physical tolerance, requiring larger doses for the same effect. Overdose can lead to nervous system shutdown, coma and death.

#### Opiate (OPI)

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 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. The test for Morphine 2000 [OPI] of the SAFElife™ T-Dip Multi-Drug Urine Test Panel yields a positive result when the morphine in urine exceeds 2000 ng/mL.

#### Oxycodone (OXY)

Oxycodone is known as Oxycontin and Roxicodone. It is an ingredient of Percodan, Percocet, Roxicet and Tylox. Oxycodone is a semi-synthetic opiate derived from opium. Like other opiates, Oxycodone is characterized by its analgesic properties, and the tendency for users to form a physical dependency and develop tolerance with extended use. Oxycodone is usually administered in combination with non-opiate analgesics such as acetaminophen and salicylates for the relief of moderate to severe pain. Oxycodone is a central nervous system depressant that may cause drowsiness, dizziness, lethargy, weakness and confusion. Toxicity in an overdose of Oxycodone can lead to stupor, coma, muscle flaccidity, severe respiratory depression, hypotension, and cardiac arrest. Oxycodone is metabolized by N- and O-demethylation. One of the metabolites, oxymorphone, is a potent narcotic analgesic, while the other, noroxycodone, is relatively inactive. Between 33 to 61% of a single dose of Oxycodone is excreted in a 24-hour urine collection and consists of 13-19% free Oxycodone, 7-29% glucuronide conjugated Oxycodone, 13-14% glucuronide conjugated oxymorphone and an unknown amount of noroxycodone. The detection time window of Oxycodone is 1-3 days following use.

#### Phencyclidine (PCP)

Phencyclidine is an arylcyclohexylamine that was originally used as an anesthetic agent and a veterinary tranquilizer. Phencyclidine can produce hallucinations, lethargy, disorientation, loss of coordination, trance-like ecstatic states, a sense of euphoria and visual distortions. It has many street names, such as “angel dust” and “crystal cyclone,” etc. phencyclidine can be administered orally, by nasal ingestion, smoking, or by intravenous injection. It is metabolized in the liver and excreted through the kidneys in urine in unchanged form and oxidized metabolites with a half-life of about 12 hours. Suction and urinary acidification in the treatment of overdose typically reduces its half-life from three days to one day.

#### Pregabalin (PGB)

Pregabalin is an analogue of γ -aminobutyric acid (GABA), which is similar to gabapentin in structure and action, and has antiepileptic, analgesic and antianxiety activities. About 98% of pregabalin is recovered in the urine as the active drug after radiation labeling. Therefore, pregabalin abuse can be determined directly by measuring the amount of pregabalin in urine.

#### Propoxyphene (PPX)

Propoxyphene, a synthetic opiate agonist, is structurally similar to methadone. Propoxyphene is a narcotic analgesic used to relieve mild to moderate pain. The principal metabolites are norextropropoxyphene. The combination usage of propoxyphene, aspirin, acetaminophen or other sedatives can lead cooperative interaction. Abuse of propoxyphene can lead nausea, vomit, astriction, illusion, hallucination, heart poisoning, lung dropsy and even death. Propoxyphene is metabolized in the liver and excreted in urine as norextropropoxyphene. Thus the presence of the propoxyphene or its metabolites in the urine indicates propoxyphene use.

#### Nortriptyline (TCA)

TCA (Tricyclic Antidepressants) are commonly used for the treatment of depressive disorders. TCA overdoses can result in profound central nervous system depression, cardiotoxicity and anticholinergic effects. TCA overdose is the most common cause of death from prescription drugs. TCAs are taken orally or sometimes by injection. TCAs are metabolized in the liver. Both TCAs and their metabolites are excreted in urine mostly in the form of metabolites for up to ten days.

#### Cannabinoids (THC)

Cannabinoids are hallucinogenic agents derived from the flowering portion of the hemp plant. The active ingredients in Cannabinoids, THC & Cannabinol can be metabolized and excreted as 11-nor-Δ9-tetrahydrocannabinol-9-carboxylic acid with a half-life of 24 hours. They can be detected for 1 to 5 days after use. Smoking is the primary method of use of Cannabinoids/cannabis. Higher doses used by abusers produce central nervous system effects, altered mood and sensory perceptions, loss of coordination, impaired short-term memory, anxiety, paranoia, depression, confusion, hallucinations and increased heart rate. A tolerance to the cardiac and psychotropic effects can occur, and withdrawal syndrome produces restlessness, insomnia, anorexia and nausea.

#### Tramadol (TRA)

Tramadol [2-(dimethylaminomethyl)-1-(3-methoxyphenyl) cyclohexanol] is used similarly to codeine, to treat moderate to moderately severe pain. It is a synthetic analog of the phenanthrene alkaloid codeine and, as such, is an opioid and also a prodrug (codeine is metabolized to morphine, tramadol is converted to O-desmethyiltramadol). Tramadol and its metabolites are excreted primarily in the urine with observed plasma half-lives of 6.3 and 7.4 hours for tramadol and O-desmethyiltramadol (denoted M1), respectively. Approximately 30% of the dose is excreted in the urine as unchanged drug, whereas 60% of the dose is excreted as metabolites.

#### Alcohol (ETOH)

Alcohol Test is intended for use to detect the presence of alcohol in urine greater than 0.04%. Alcohol intoxication can lead to loss of alertness, coma, death and as well as birth defects. The BAC at which a person becomes impaired is variable. The United States Department of Transportation (DOT) has established a BAC of 0.02% (0.02g/dL) as the cut-off level at which an individual is considered positive for the presence of alcohol. Since the urine alcohol concentration is normally higher than that in saliva and blood, the cutoff concentration for alcohol in urine was set at 0.04%. Normally, it will take at least 30 minutes for the alcohol to be detected in saliva, blood and urine after drinking.

### PRINCIPLE

The SAFElife™ T-Dip Multi-Drug Urine Test Panel is a competitive immunoassay that is used to screen for the presence of drugs in urine. It is chromatographic absorbent device in which drugs in a sample competitively combined to a limited number of drug monoclonal antibody (mouse) conjugate binding sites.

When the absorbent end is immersed into urine specimen, the urine is absorbed into the device by capillary action, mixes with the respective drug monoclonal antibody conjugate, and flows across the pre-coated membrane. When sample drug levels are zero or below the target cutoff (the detection sensitivity of the test), respective drug monoclonal antibody conjugate binds to the respective drug-protein conjugate immobilized in the Test Region (T) of the device. This produces a colored Test line that, regardless of its intensity, indicates a negative result.

When sample drug levels are at or above the target cutoff, 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 (T), indicating a potentially positive result.

To serve as a procedure control, a colored line will appear at the Control Region (C), where the Goat anti mouse IgG polyclonal antibody immobilized in, if the test has been performed properly.

### QUALITY CONTROL

Users should follow the appropriate federal, state, and local guidelines concerning the frequency of assaying external quality control materials. Even though there is an internal procedural control line in the test device in the Control Region (C), the use of external controls is strongly recommended as good laboratory testing practice to confirm the test procedure and to verify proper test performance. Positive

and negative controls should give the expected results. When testing the positive and negative controls, the same assay procedure should be adopted. External Control (positive and negative) should be run with each new lot, each new shipment and each new operator to determine that tests are working properly.

### PERFORMANCE CHARACTERISTICS

#### ADULTERATION CONTROL:

##### Expected Results

**Creatinine (CR):** Daily creatinine excretion, related to muscle mass of the human body, is usually constant. The DOT guideline states that urine specimens with creatinine levels of less than 20 mg/dl are indications of adulteration. Although these ranges are affected by age, sex, diet, muscle mass and local population distribution, sample with creatinine level of lower than 20 mg/dl should be considered adulterated.

**Glutaraldehyde (GL):** Glutaraldehyde is not a natural component of human urine and it should not be present in normal urine. The presence of glutaraldehyde in the urine sample indicates the possibility of adulteration. However, false positive may result when ketone bodies are presence in urine. Ketone bodies may appear in urine when a person is in ketoacidosis, starvation or other metabolic abnormalities.

**Nitrite (NI):** Although nitrite is not a normal component of urine, nitrite levels of up to 3.6 mg/dl may be found in some urine specimens due to urinary tract infections, bacterial contamination or improper storage. In this adulteration control, nitrite level above 7.5 mg/dl is considered abnormal.

**Oxidants/Bleach (OX):** The presence of Bleach and other oxidizing reagents in the urine is indicative of adulteration since oxidizing reagents are not normal constituents of urine. Other oxidizing reagents include Hydrogen Peroxide, Ferricyanide, Persulfate, Pyridinium Chlorochromate..etc.

**pH (PH):** Normal urine pH ranges from 4.5 to 8.0. Values below pH 4.0 or above pH 9.0 are indicative of adulteration.

**Specific Gravity (S.G.):** Random urine may vary in specific gravity from 1.005 - 1.025. Adults with average diets and fluid intake will have an average urine specific gravity of 1.016 - 1.022. Elevated urine specific gravity value may be obtained in the presence of moderate quantities of protein. DOT guidelines state that a urine specimen with specific gravity level of less than 1.003 is an indication of adulteration. Specific gravity and creatinine values should be considered together to provide a better picture of whether the sample is adulterated.

#### DRUGS TESTS:

##### Accuracy

3920 (eighty of each drug) urine specimens were analyzed by GC-MS and by each corresponding drug test. Each test was read by three viewers. Samples were divided by concentration into five categories: drug-free, less than half the cutoff, near cutoff negative, near cutoff positive, a nd high positive. Results were as follows:

Drug test	Result	Drug -free	Less than half the cutoff concentra by GC/MS analysis	Near Cutoff Negative (Between 50% below the cutoff and the cutoff concentra tion)	Near Cutoff Positive (Between the cutoff and 50% above the cutoff concentra tion)	High Positive (greater than 50% above the cutoff concentra tion)	%Agreement with GC/MS (95%CI)
6-MAM	Viewer A	+	0	0	2	17	21
	A	-	10	15	13	2	0
	Viewer B	+	0	0	1	19	20
	B	-	10	15	14	1	0
AMP (300)	Viewer A	+	0	0	1	17	21
	C	-	10	15	14	2	0
	Viewer B	+	0	0	2	29	11
	A	-	10	17	11	0	0
AMP (500)	Viewer A	+	0	0	1	29	11
	B	-	10	17	12	0	0
	Viewer C	+	0	0	1	29	11
	A	-	10	17	12	0	0
AMP (1000)	Viewer A	+	0	0	2	30	10
	B	-	10	17	12	0	0
	Viewer C	+	0	0	2	30	10
	A	-	10	17	11	0	0
BAR	Viewer A	+	0	0	2	20	20
	A	-	10	10	18	0	0
	Viewer B	+	0	0	2	20	20
	B	-	10	10	18	0	0
BZO (100)	Viewer A	+	0	0	2	21	18
	A	-	10	18	10	1	0
	Viewer B	+	0	0	1	20	18
	B	-	10	18	11	2	0
BZO (200)	Viewer A	+	0	0	2	22	18
	A	-	10	18	10	0	0
	Viewer B	+	0	0	1	22	18
	B	-	10	18	11	0	0
BZO (300)	Viewer A	+	0	0	2	20	20
	A	-	10	10	18	0	0
	Viewer B	+	0	0	2	20	20
	B	-	10	10	18	0	0
BUP (5)	Viewer A	+	0	0	1	16	24
	A	-	10	18	11	0	0
	Viewer B	+	0	0	1	16	24
	B	-	10	18	11	0	0
BUP (10)	Viewer A	+	0	0	2	16	24
	C	-	10	18	10	0	0
	Viewer A	+	0	0	1	16	24
	A	-	10	18	11	0	0

COC (100)	Viewer A	+	0	0	2	16	24
	C	-	10	18	10	0	0
	Viewer B	+	0	0	2	27	13
	B	-	10	15	13	0	0
COC (150)	Viewer A	+	0	0	2	30	10
	A	-	10	18	10	0	0
	Viewer B	+	0	0	1	30	10
	B	-	10	18	11	0	0
COC (300)	Viewer A	+	0	0	2	11	29
	A	-	10	10	18	0	0
	Viewer B	+	0	0	1	11	29
	B	-	10	10	19	0	0
COT	Viewer A	+	0	0	2	29	10
	A	-	10	10	18	1	0
	Viewer B	+	0	0	1	28	10
	B	-	10	10	19	2	0
EDDP (100)	Viewer A	+	0	0	1	28	10
	A	-	10	18	9	2	0
	Viewer B	+	0	0	1	29	10
	B	-	10	18	11	1	0
EDDP (300)	Viewer A	+	0	0	2	29	10
	A	-	10	18	10	1	0
	Viewer B	+	0	0	1	29	10
	B	-	10	18	11	1	0
ETG (300)	Viewer A	+	0	0	2	29	10
	A	-	10	18	10	1	0
	Viewer B	+	0	0	1	29	10
	B	-	10	18	11	1	0
EtG (500)	Viewer A	+	0	0	0	17	21
	A	-	10	12	18	2	0
	Viewer B	+	0	0	0	18	21
	B	-	10	12	18	1	0
FTY	Viewer A	+	0	0	1	18	22
	A	-	10	12	17	0	0
	Viewer B	+	0	0	1	18	22
	B	-	10	12	17	0	0
GAB	Viewer A	+	0	0	2	1	25
	A	-	50	0	1	1	0
	Viewer B	+	0	0	1	2	25
	B	-	50	0	2	0	0
HMO	Viewer A	+	0	0	2	18	21
	A	-	10	16	12	1	0
	Viewer B	+	0	0	1	18	21
	B	-	10	16	13	1	0
KET (300)	Viewer A	+	0	0	0	17	21
	A	-	10	12	18	2	0
	Viewer B	+	0	0	1	18	21
	B	-	10	12	17	1	0
KET (1000)	Viewer A	+	0	0	2	17	21
	A	-	10	12	16	2	0
	Viewer B	+	0	0	0	18	21
	B	-	10	12	18	1	0
K2	Viewer A	+	0	0	1	18	22
	A	-	10	12	17	0	0
	Viewer B	+	0	0	0	17	22
	B	-	10	12	18	1	0
KRA (100)	Viewer A	+	0	0	2	20	20
	A	-	10	10	18	0	0
	Viewer B	+	0	0	1	20	20
	B	-	10	10	19	0	0
KRA (300)	Viewer A	+	0	0	2	20	20
	A	-	10	10	18	0	0
	Viewer B	+	0	0	1	20	20
	B	-	10	10	19	0	0
LSD	Viewer A	+	0	0	0	17	21
	A	-	10	10	18	0	0
	Viewer B	+	0	0	1	18	21
	B	-	10	12	17	1	0
MET (mAMP) (300)	Viewer A	+	0	0	2	21	19
	A	-	10	11	17	0	0
	Viewer B	+	0	0	2	21	19
	B	-	10	11	17	0	0
MET (mAMP)	Viewer A	+	0	0	2	20	20
	A	-	10	15	13	0	0

	Viewer A	+	0	0	2	20	20	100% (91.2% - 100%)
	B	-	10	15	13	0	0	95% (83.5% - 98.6%)
	Viewer C	+	0	0	2	20	20	100% (91.2% - 100%)
	C	-	10	15	13	0	0	95% (83.5% - 98.6%)
MET (mAMP) (1000)	Viewer A	+	0	0	1	20	20	100% (84.5% - 100%)
	A	-	10	16	13	0	0	97.5% (82% - 100%)
	Viewer B	+	0	0	2	20	20	100% (84.5% - 100%)
	B	-	10	16	12	0	0	95% (79.5% - 100%)
	Viewer A	+	0	0	2	20	20	100% (84.5% - 100%)
	C	-	10	16	12	0	0	95% (79.5% - 100%)
	Viewer A	+	0	0	2	20	20	100% (84.5% - 100%)
	A	-	10	10	18	0	0	95% (79.5% - 100%)
	Viewer B	+	0	0	2	20	20	100% (84.5% - 100%)
	B	-	10	10	18	0	0	95% (79.5% - 100%)
	Viewer C	+	0	0	2	20	20	100% (84.5% - 100%)
	C	-	10	10	18	0	0	95% (79.5% - 100%)
MOP100 /OPI100	Viewer A	+	0	0	2	28	12	100% (91.2% - 100%)
	A	-	10	16	12	0	0	95% (83.5% - 98.6%)
	Viewer B	+	0	0	3	28	12	100% (91.2% - 100%)
	B	-	10	16	11	0	0	92.5% (80.1% - 97.4%)
	Viewer C	+	0	0	2	28	12	100% (91.2% - 100%)
	C	-	10	16	12	0	0	95% (83.5% - 98.6%)
	Viewer A	+	0	0	2	20	20	100% (84.5% - 100%)
	A	-	10	19	9	0	0	95% (79.5% - 100%)
	Viewer B	+	0	0	2	20	20	100% (84.5% - 100%)
	B	-	10	19	9	0	0	95% (79.5% - 100%)
	Viewer C	+	0	0	1	20	20	100% (84.5% - 100%)
	C	-	10	19	10	0	0	97.5% (82% - 100%)
MOP30 0/OPI3 00	Viewer A	+	0	0	2	20	20	100% (84.5% - 100%)
	A	-	10	19	9	0	0	95% (79.5% - 100%)
	Viewer B	+	0	0	2	20	20	100% (84.5% - 100%)
	B	-	10	19	9	0	0	95% (79.5% - 100%)
	Viewer C	+	0	0	1	20	20	100% (84.5% - 100%)
	C	-	10	19	10	0	0	97.5% (82% - 100%)
	Viewer A	+	0	0	2	15	25	100% (91.2% - 100%)
	A	-	10	13	15	0	0	95% (83.5% - 98.6%)
	Viewer B	+	0	0	2	15	25	100% (91.2% - 100%)
	B	-	10	13	15	0	0	95% (83.5% - 98.6%)
	Viewer C	+	0	0	1	15	25	100% (91.2% - 100%)
	C	-	10	13	16	0	0	97.5% (87.1% - 99.6%)
MTD (200)	Viewer A	+	0	0	1	19	21	100% (84.5% - 100%)
	A	-	10	12	17	0	0	97.5% (82% - 100%)
	Viewer B	+	0	0	2	19	21	100% (84.5% - 100%)
	B	-	10	12	16	0	0	95% (79.5% - 100%)
	Viewer C	+	0	0	1	19	21	100% (84.5% - 100%)
	C	-	10	12	17	0	0	97.5% (82% - 100%)
	Viewer A	+	0	0	2	29	10	97.5% (87.1% - 99.6%)
	A	-	10	10	18	1	0	95% (83.5% - 98.6%)
	Viewer B	+	0	0	1	28	10	95% (83.5% - 98.6%)
	B	-	10	10	19	2	0	97.5% (87.1% - 99.6%)
	Viewer C	+	0	0	2	29	10	97.5% (87.1% - 99.6%)
	C	-	10	10	18	1	0	95% (83.5% - 98.6%)
MTD (300)	Viewer A	+	0	0	1	19	21	100% (84.5% - 100%)
	A	-	10	12	17	0	0	97.5% (82% - 100%)
	Viewer B	+	0	0	2	19	21	100% (84.5% - 100%)
	B	-	10	12	16	0	0	95% (79.5% - 100%)
	Viewer C	+	0	0	1	19	21	100% (84.5% - 100%)
	C	-	10	12	17	0	0	97.5% (82% - 100%)
	Viewer A	+	0	0	2	29	10	97.5% (87.1% - 99.6%)
	A	-	10	10	18	1	0	95% (83.5% - 98.6%)
	Viewer B	+	0	0	1	28	10	95% (83.5% - 98.6%)
	B	-	10	10	19	2	0	97.5% (87.1% - 99.6%)
	Viewer C	+	0	0	2	29	10	97.5% (87.1% - 99.6%)
	C	-	10	10	18	1	0	95% (83.5% - 98.6%)
OPI	Viewer A	+	0	0	1	18	22	100% (84.5% - 100%)
	A	-	10	20	9	0	0	97.5% (82% - 100%)
	Viewer B	+	0	0	1	18	22	100% (84.5% - 100%)
	B	-	10	20	9	0	0	97.5% (82% - 100%)
	Viewer C	+	0	0	1	18	22	100% (84.5% - 100%)
	C	-	10	20	9	0	0	97.5% (82% - 100%)
	Viewer A	+	0	0	1	19	21	100% (84.5% - 100%)
	A	-	10	20	9	0	0	97.5% (82% - 100%)
OXY	Viewer A	+	0	0	1	19	21	100% (84.5% - 100%)
	A	-	10	20	9	0	0	97.5% (82% - 100%)
	Viewer B	+	0	0	1	19	21	100% (84.5% - 100%)
	B	-	10	20	9	0	0	97.5% (82% - 100%)
	Viewer C	+	0	0	1	19	21	100% (84.5% - 100%)
	C	-	10	20	9	0	0	97.5% (82% - 100%)
	Viewer A	+	0	0	2	18	22	100% (84.5% - 100%)
	A	-	10	13	15	0	0	95% (79.5% - 100%)
	Viewer B	+	0	0	1	18	22	100% (84.5% - 100%)
	B	-	10	13	16	0	0	97.5% (82% - 100%)
	Viewer C	+	0	0	1	18	22	100% (84.5% - 100%)
	C	-	10	13	16	0	0	97.5% (82% - 100%)
PGB	Viewer A	+	0	1	2	16	21	92.5% (80.1% - 97.4%)
	A	-	10	11	16	2	1	92.5% (80.1% - 97.4%)
	Viewer B	+	0	1	3	15	21	90% (77% - 97.4%)
	B	-	10	11	15	3	1	90% (77% - 97.4%)
	Viewer C	+	0	2	2	16	21	92.5% (80.1% - 97.4%)
	C	-	10	10	16	2	1	90% (77% - 97.4%)
	Viewer A	+	0	0	2	20	20	100% (84.5% - 100%)
	A	-	10	10	18	0	0	95% (79.5% - 100%)
	Viewer B	+	0	0	2	20	20	100% (84.5% - 100%)
	B	-	10	10	18	0	0	95% (79.5% - 100%)
	Viewer C	+	0	0	2	20	20	100% (84.5% - 100%)
	C	-	10	10	18	0	0	95% (83.5% - 98.6%)
TCA	Viewer A	+	0	0	1	10	30	100% (84.5% - 100%)
	A	-	10	19	10	0	0	97.5% (82% - 100%)
	Viewer B	+	0	0	2	10	30	100% (84.5% - 100%)
	B	-	10	19	9	0	0	95% (79.5% - 100%)
	Viewer C	+	0	0	1	10	30	100% (84.5% - 100%)
	C	-	10	19	10	0	0	97.5% (82% - 100%)
	Viewer A	+	0	0	1	15	23	95% (83.5% - 98.6%)
	A	-	10	16	13	2	0	97.5% (87.1% - 99.6%)
THC (15)	Viewer B	+	0	0	2	16	23	97.5% (87.1% - 99.6%)
	B	-	10	16	12	1	0	95% (83.5% - 98.6%)
	Viewer C	+	0	0	2	16	23	97.5% (87.1% - 99.6%)
	C	-	10	16	12	1	0	95% (83.5% - 98.6%)
THC (25)	Viewer A	+	0	0	1	17	22	97.5% (84.5% - 100%)
	A	-	10	12	17	1	0	97.5% (82% - 100%)
	Viewer B	+	0	0	1	18	22	100% (84.5% - 100%)
	B	-	10	12	17	0	0	97.5% (82% - 100%)
	Viewer C	+	0	0	1	18	22	100% (84.5% - 100%)
	C	-	10	12	17	0	0	97.5% (82% - 100%)
	Viewer A	+	0	0	2	20	20	100% (91.2% - 100%)
	A	-	10	13	15	0	0	95% (83.5% - 98.6%)
	Viewer B	+	0	0	1	20	20	100% (91.2% - 100%)
	B	-	10	13	16	0	0	97.5% (87.1% - 99.6%)
	Viewer C	+	0	0	2	20	20	100% (91.2% - 100%)
	C	-	10	13	15	0	0	95% (83.5% - 98.6%)
THC (50)	Viewer A	+	0	0	1	18	22	100% (84.5% - 100%)
	A	-	10	12	17	0	0	97.5% (82% - 100%)
	Viewer B	+	0	0	1	18	22	100% (84.5% - 100%)
	B	-	10	12	17	0	0	97.5% (82% - 100%)
	Viewer C	+	0	0	1	18	22	100% (84.5% - 100%)
	C	-	10	12	17	0	0	97.5% (82% - 100%)
	Viewer A	+	0	0	2	19	21	100% (84.5% - 100%)
	A	-	10	20	8	0	0	95% (79.5% - 100%)
TRA (100)	Viewer B	+	0	0	1	19	20	97.5% (84.5% - 100%)
	B	-	10	20	9	1	0	97.5% (79.5% - 100%)
	Viewer C	+	0	0	1	18	20	95% (84.5% - 100%)
	C	-	10	20	9	2	0	97.5% (82% - 100%)

TRA (200)	Viewer A	+	0	0	2	19	21	100% (84.5% - 100%)
		-	10	20	8	0	0	95% (79.5% - 100%)
	Viewer B	+	0	0	2	19	21	100% (84.5% - 100%)
		-	10	20	8	0	0	95% (79.5% - 100%)
TRA (1000)	Viewer C	+	0	0	1	19	21	100% (84.5% - 100%)
		-	10	20	9	0	0	97.5% (82% - 100%)
	Viewer A	+	0	0	2	19	21	100% (84.5% - 100%)
		-	10	20	8	0	0	95% (79.5% - 100%)
	Viewer B	+	0	0	1	19	20	97.5% (84.5% - 100%)
		-	10	20	9	1	0	97.5% (79.5% - 100%)
	Viewer C	+	0	0	1	18	20	95% (84.5% - 100%)
		-	10	20	9	2	0	97.5% (82% - 100%)

Precision and Sensitivity

To investigate the precision and sensitivity,each drug sample was analyzed at the following concentrations: cutoff - 100%, cutoff - 75%, cutoff - 50%, cutoff - 25%, cutoff, cutoff +25%, cutoff + 50%, cutoff + 75%and the cutoff + 100%. 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 test. Totally 3 operators participated in the study of the corresponding drug 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 test.

Drug test	Approximate concentration of sample (ng/mL)	Number of determinations per lot	Results Negative/ Positive		
			Lot 1	Lot 2	Lot 3
6-MAM	0	50	50/0	50/0	50/0
	2.5	50	50/0	50/0	50/0
	5	50	50/0	50/0	50/0
	7.5	50	47/3	48/2	47/3
	10	50	25/25	22/28	24/26
	12.5	50	4/46	5/45	6/44
	15	50	0/50	0/50	0/50
	17.5	50	0/50	0/50	0/50
AMP (300)	20	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	75	50	50/0	50/0	50/0
	150	50	50/0	50/0	50/0
	225	50	50/0	50/0	50/0
	300	50	5/45	5/45	4/46
	375	50	0/50	0/50	0/50
	450	50	0/50	0/50	0/50
AMP (500)	525	50	0/50	0/50	0/50
	600	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	125	50	50/0	50/0	50/0
	250	50	50/0	50/0	50/0
	375	50	50/0	50/0	50/0
	500	50	6/44	7/43	6/44
	625	50	0/50	0/50	0/50
AMP (1000)	750	50	0/50	0/50	0/50
	875	50	0/50	0/50	0/50
	1000	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	250	50	50/0	50/0	50/0
	500	50	50/0	50/0	50/0
	750	50	50/0	50/0	50/0
	1000	50	5/45	6/44	6/44
BAR	1250	50	0/50	0/50	0/50
	1500	50	0/50	0/50	0/50
	1750	50	0/50	0/50	0/50
	2000	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	75	50	50/0	50/0	50/0
	150	50	50/0	50/0	50/0
	225	50	50/0	50/0	50/0
BZO (200)	300	50	5/45	5/45	6/44
	375	50	0/50	0/50	0/50
	450	50	0/50	0/50	0/50
	525	50	0/50	0/50	0/50
	600	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	25	50	50/0	50/0	50/0
	50	50	50/0	50/0	50/0
BZO (300)	75	50	46/4	46/4	47/3
	100	50	4/46	4/46	4/46
	125	50	3/47	3/47	2/48
	150	50	0/50	0/50	0/50
	175	50	0/50	0/50	0/50
	200	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	50	50	50/0	50/0	50/0
BZO (500)	100	50	50/0	50/0	50/0
	150	50	50/0	50/0	50/0
	200	50	4/46	4/46	4/46
	250	50	0/50	0/50	0/50
	300	50	0/50	0/50	0/50
	350	50	0/50	0/50	0/50
	400	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
BUP (5)	75	50	50/0	50/0	50/0
	150	50	50/0	50/0	50/0
	225	50	50/0	50/0	50/0
	300	50	6/44	5/45	6/44
	375	50	0/50	0/50	0/50
	450	50	0/50	0/50	0/50
	525	50	0/50	0/50	0/50
	600	50	0/50	0/50	0/50
BUP (10)	0	50	50/0	50/0	50/0
	1.25	50	50/0	50/0	50/0
	2.5	50	50/0	50/0	50/0
	3.75	50	50/0	50/0	50/0
	5.0	50	5/45	5/45	6/44
	6.25	50	0/50	0/50	0/50
	7.5	50	0/50	0/50	0/50
	8.75	50	0/50	0/50	0/50
	10	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	2.5	50	50/0	50/0	50/0
	5.0	50	50/0	50/0	50/0
	7.5	50	50/0	50/0	50/0
	10.0	50	5/45	5/45	6/44
	12.5	50	0/50	0/50	0/50

COC (100)	15.0	50	0/50	0/50	0/50
	17.5	50	0/50	0/50	0/50
	20.0	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	25	50	50/0	50/0	50/0
	50	50	50/0	50/0	50/0
	75	50	50/0	50/0	50/0
	100	50	4/46	4/46	3/47
	125	50	0/50	0/50	0/50
	150	50	0/50	0/50	0/50
	175	50	0/50	0/50	0/50
	200	50	0/50	0/50	0/50
COC (150)	0	50	50/0	50/0	50/0
	37.5	50	50/0	50/0	50/0
	75	50	50/0	50/0	50/0
	112.5	50	50/0	50/0	50/0
	150	50	7/43	6/44	7/43
	187.5	50	0/50	0/50	0/50
	225	50	0/50	0/50	0/50
	262.5	50	0/50	0/50	0/50
	300	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	75	50	50/0	50/0	50/0
	150	50	50/0	50/0	50/0
COC (300)	225	50	50/0	50/0	50/0
	300	50	6/44	5/45	5/45
	375	50	0/50	0/50	0/50
	450	50	0/50	0/50	0/50
	525	50	0/50	0/50	0/50
	600	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	50	50	50/0	50/0	50/0
	100	50	50/0	50/0	50/0
	150	50	48/2	49/1	47/3
	200	50	6/44	4/46	5/45
	250	50	4/46	3/47	2/48
COT (200)	300	50	0/50	0/50	0/50
	350	50	0/50	0/50	0/50
	400	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	25	50	50/0	50/0	50/0
	50	50	50/0	50/0	50/0
	75	50	48/2	46/4	47/3
	100	50	6/44	5/45	5/45
	125	50	2/48	3/47	5/45
	150	50	0/50	0/50	0/50
	175	50	0/50	0/50	0/50
	200	50	0/50	0/50	0/50
EDDP (100)	0	50	50/0	50/0	50/0
	25	50	50/0	50/0	50/0
	50	50	50/0	50/0	50/0
	75	50	48/2	46/4	47/3
	100	50	6/44	5/45	5/45
	125	50	2/48	3/47	5/45
	150	50	0/50	0/50	0/50
	175	50	0/50	0/50	0/50
	200	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	25	50	50/0	50/0	50/0
	50	50	50/0	50/0	50/0
EDDP (300)	75	50	50/0	50/0	50/0
	150	50	50/0	50/0	50/0
	225	50	50/0	50/0	50/0
	300	50	6/44	5/45	6/44
	375	50	0/50	0/50	0/50
	450	50	0/50	0/50	0/50
	525	50	0/50	0/50	0/50
	600	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	25	50	50/0	50/0	50/0
	50	50	50/0	50/0	50/0
	75	50	50/0	50/0	50/0
EtG (300)	150	50	50/0	50/0	50/0
	225	50	50/0	50/0	50/0
	300	50	5/45	4/46	5/45
	375	50	0/50	0/50	0/50
	450	50	0/50	0/50	0/50
	525	50	0/50	0/50	0/50
	600	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	75	50	50/0	50/0	50/0
	150	50	50/0	50/0	50/0
	225	50	50/0	50/0	50/0
	300	50	5/45	4/46	5/45
EtG (500)	375	50	0/50	0/50	0/50
	450	50	0/50	0/50	0/50
	525	50	0/50	0/50	0/50
	600	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	125	50	50/0	50/0	50/0
	250	50	50/0	50/0	50/0
	375	50	50/0	50/0	50/0
	500	50	5/45	4/46	5/45
	625	50	0/50	0/50	0/50
	750	50	0/50	0/50	0/50
	875	50	0/50	0/50	0/50
FTY	1000	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	5	50	50/0	50/0	50/0
	10	50	50/0	50/0	50/0
	15	50	50/0	50/0	50/0
	20	50	4/46	5/45	5/45
	25	50	0/50	0/50	0/50
	30	50	0/50	0/50	0/50
	35	50	0/50	0/50	0/50
	40	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	500	50	50/0	50/0	50/0
GAB	1000	50	50/0	50/0	50/0
	1500	50	42/8	41/9	44/6
	2000	50	26/24	23/27	28/22
	2500	50	3/47	2/48	



TRA (100)	0	50	50/0	50/0	50/0
	25	50	50/0	50/0	50/0
	50	50	50/0	50/0	50/0
	75	50	48/2	49/1	47/3
	100	50	4/46	5/45	5/45
	125	50	1/49	4/46	3/47
	150	50	0/50	0/50	0/50
	175	50	0/50	0/50	0/50
TRA (200)	200	50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0
	50	50	50/0	50/0	50/0
	100	50	50/0	50/0	50/0
	150	50	50/0	50/0	50/0
	200	50	4/46	6/44	5/45
	250	50	0/50	0/50	0/50
	300	50	0/50	0/50	0/50
	350	50	0/50	0/50	0/50
	400	50	0/50	0/50	0/50

#### Specificity and Cross Reactivity

To test the specificity of the test, the test device was used to test various drugs, drug metabolites and other components of the same class that are likely to be present in urine. All the components were added to drug-free normal human urine. The following structurally related compounds produced positive results with the test when tested at levels equal to or greater than the concentrations listed below.

Items	Concentration (ng/mL)	Items	Concentration (ng/mL)
<b>6-Monoacetylmorphine (6-MAM)</b>		JWH-018 (Spice Cannabinoid)	1,000
6-Monoacetylmorphine	10	JWH-018 4-Hydroxypentyl metabolite-D5 (indole-D5)	1,000
Codeine	10,000	JWH-073 (Spice Cannabinoid)	2,000
Ethyl morphine	>100,000	JWH-073 3-Hydroxybutyl metabolite	1,000
Hydrocodone	10,000	JWH-073 3-Hydroxybutyl metabolite-D5 (indole-D5)	1,000
Naltrexone	10000	JWH-019 6-hydroxypentyl	1,000
Naloxone	10,000	JWH-122 N-4-hydroxypentyl	2,000
Thebaine	100000	JWH-210 5-Hydroxypentyl metabolite	5,000
Pholcodine	>100,000	AM2201 4-Hydroxypentyl metabolite	1,000
Oxycodone	>10,0000	<b>Ketamine (KET300)</b>	*
Hydromorphone	10,000	Ketamine	300
Levorphanol	>10,0000	Metadone	15,000
morphine	50,000	Pethidine	3,750
<b>Amphetamine (AMP300)</b>	*	Methylamphetamine	3,750
d-Amphetamine	300	Methoxyphenamine	3,750
l-Amphetamine	17,500	Promethazine	7,500
d,l-Amphetamine	850	Phencyclidine	7,500
(+/-) 3,4-methylenedioxyamphetamine (MDA)	1,000	<b>Ketamine (KET1000)</b>	*
Phentermine	1,000	Ketamine	1,000
β-Phenylethylamine	100,000	Metadone	50,000
Tyramine	100,000	Pethidine	12,500
p-Hydroxynorephedrine	100,000	Methylamphetamine	12,500
Phenylpropanolamine	>100,000	Methoxyphenamine	12,500
(±)Phenylpropanolamine	>100,000	Promethazine	25,000
p-Hydroxyamphetamine	100,000	Phencyclidine	25,000
Hydroxyamphetamine	6,000	<b>Kratom (KRA100)</b>	*
d-Methamphetamine	>100,000	Mitragynine	100
l-Methamphetamine	>100,000	7-Hydroxymitragynine	5,000
(+/-)3,4-Methylenedioxyethylamphetami ne (MDEA)	>100,000	<b>Kratom (KRA300)</b>	*
(+/-)3,4-Methylenedioxyamphetami ne (MDMA)	>100,000	Mitragynine	300
Benzphetamine	>100,000	7-Hydroxymitragynine	600
Ephedrine	>100,000	<b>Lysergic acid diethylamide (LSD)</b>	20
l-Ephedrine	>100,000	Lysergic acid diethylamide	20
l-Epinephrine	>100,000	Fentanyl citrate	5
d,l-Epinephrine	>100,000	Haloperidol	200
<b>Amphetamine (AMP500)</b>	*	Paliperidone	1,000
d-Amphetamine	500	Risperidone	5,000
l-Amphetamine	25,000	Phenibut	10,000
d,l-Amphetamine	1,500	Orthoxine	10,000
(+/-) 3,4-methylenedioxyamphetamine (MDA)	2,500	<b>Methylenedioxyamphetami ne (MDMA)</b>	*
Phentermine	1,500	3,4-Methylenedioxyamphetami ne (MDMA)	500
Hydroxyamphetamine	8000	3,4-Methylenedioxyamphetamine (MDA)	3,000
d-Methamphetamine	>100,000	3,4-Methylenedioxyethylampheta mine (MDEA)	300
l-Methamphetamine	>100,000	d-methamphetamine	>100,000
(+/-)3,4-Methylenedioxyethylamphetami ne (MDEA)	>100,000	d-amphetamine	>100,000
(+/-)3,4-Methylenedioxyamphetami ne (MDMA)	>100,000	<b>Methamphetamine (MET300 /mAMP300)</b>	*
Ephedrine	>100,000	D(+)-Methamphetamine	300
β-Phenylethylamine	100,000	D-Amphetamine	10,000
Tyramine	100,000	Chloroquine	8,000
p-Hydroxynorephedrine	100,000	(+/-)-Ephedrine	20,000
Phenylpropanolamine	>100,000	(-)-Methamphetamine	8,000
(±)Phenylpropanolamine	>100,000	(+/-)3,4-Methylenedioxyamphetami ne (MDMA)	-
p-Hydroxyamphetamine	100,000	β-Phenylethylamine	10,000
Benzphetamine	>100,000	Trimethobenzamide	3,000
l-Ephedrine	>100,000	(+/-)3,4-Methylenedioxyethylampheta mine(MDEA)	500
l-Epinephrine	>100,000	d,l-Methamphetamine	1,000
d,l-Epinephrine	>100,000	p-Hydroxymethamphetamine	30,000
<b>Amphetamine (AMP1000)</b>	*	Methylenedioxyamphetamine	500

		(MDA)	
d-Amphetamine	1,000	L-Amphetamine	20,000
d,l-Amphetamine	3,000	D,L-Amphetamine	70,000
l-Amphetamine	50,000	Mephetermine	20,000
(+/-) 3,4-methylenedioxyamphetamine (MDA)	5,000	(1R,2S)-(-)-Ephedrine	>100,000
Phentermine	3,000	L-phenylephrine	>100,000
Hydroxyamphetamine	8000	<b>Methamphetamine (MET500 /mAMP500)</b>	*
d-methamphetamine	>100,000	D(+)-Methamphetamine	500
l-methamphetamine	>100,000	D-Amphetamine	25,000
3,4-Methylenedioxyethylamphetami ne (MDEA)	>100,000	L-Amphetamine	37,500
(+/-)3,4-Methylenedioxyamphetami ne (MDMA)	100,000	Chloroquine	10,000
β-Phenylethylamine	100,000	(+/-)-Ephedrine	25,000
Tyramine	100,000	d,l-Methamphetamine	500
p-Hydroxynorephedrine	100,000	L-Methamphetamine	10,000
Phenylpropanolamine	>100,000	(+/-)3,4-Methylenedioxyethylampheta mine (MDEA)	500
(±)Phenylpropanolamine	>100,000	(+/-)3,4-Methylenedioxyamphetamine (MDA)	500
p-Hydroxyamphetamine	100,000	(+/-)3,4-Methylenedioxyamphetami ne (MDMA)	1,000
Benzphetamine	>100,000	β-Phenylethylamine	25,000
l-Ephedrine	>100,000	Trimethobenzamide	5,000
l-Epinephrine	>100,000	d,l-Amphetamine	75,000
d,l-Epinephrine	>100,000	p-Hydroxymethamphetamine	15,000
Ephedrine	>100,000	Mephentermine	25,000
<b>Barbiturates (BAR)</b>	*	(1R,2S)-(-)-Ephedrine	50,000
Secobarbital	300	l-Phenylephrine	100,000
Amobarbital	10,000	<b>Methamphetamine (MET1000 /mAMP1000)</b>	*
Alphenol	150	D(+)-Methamphetamine	1,000
Aprobarbital	200	D-Amphetamine	>100,000
Butabarbital	75	Chloroquine	50,000
Butathal	100	(+/-)-Ephedrine	50,000
Butalbital	2,500	(-)-Methamphetamine	25,000
Cyclopentobarbital	600	(+/-)3,4-methylenedioxumethampheta mine(MDMA)	4,000
Pentobarbital	2,500	β-Phenylethylamine	50,000
Phenobarbital	10,000	Trimethobenzamide	10,000
<b>Benzodiazepines (BZO100)</b>	*	(+/-)3,4-Methylenedioxyethylampheta mine(MDEA)	1,000
Oxazepam	100	d,l-Methamphetamine	1,000
Alprazolam	75	p-Hydroxymethamphetamine	30,000
α-Hydroxyalprazolam	500	(+/-)3,4-Methylenedioxyamphetamine (MDA)	1,000
Bromazepam	400	L-Amphetamine	75,000
Chlordiazepoxide	500	D,L-Amphetamine	100,000
Clobazam	50	Mephetermine	50,000
Clonazepam	800	(1R,2S)-(-)-Ephedrine	>100,000
Clorazepate dipotassium	75	L-phenylephrine	>100,000
Delorazepam	500	<b>Morphine (MOP100 /OPI100)</b>	*
Desalkylflurazepam	150	Morphine	100
Diazepam	75	Codeine	100
Estazolam	800	Ethyl Morphine	75
Flunitrazepam	1,800	Hydrocodone	3,000
D,L-Lorazepam	>100,000	Hydromorphone	800
Midazolam	4,200	Levorphanol	5,000
Nitrazepam	3,000	6-Monoacetylmorphine	100
Norchlordiazepoxide	75	Morphine 3-β-D-glucuronide	200
Nordiazepam	300	Norcodeine	5,000
Temazepam	150	Normorphine	200
Trazolam	800	Oxycodone	10,000
Demoxepam	1,500	Oxymorphone	10,000
Flurazepam	400	Procaine	100,000
<b>Benzodiazepines (BZO200)</b>	*	Thebaine	2,000
Oxazepam	200	Heroin	300
Alprazolam	150	<b>Morphine (MOP300 /OPI300)</b>	*
α-Hydroxyalprazolam	1,000	Morphine	300
Bromazepam	500	Codeine	300
Chlordiazepoxide	1,000	Ethyl Morphine	100
Clobazam	70	Heroin	300
Clonazepam	800	Hydrocodone	5,000
Clorazepate dipotassium	150	Hydromorphone	1,000
Delorazepam	1,000	Morphine-3-β-d-glucuronide	1,000
Desalkylflurazepam	200	6-Monoacetylmorphine	150
Diazepam	150	Normorphine	300
Estazolam	1,000	Oxycodone	10,000
Flunitrazepam	2,000	Oxymorphone	10,000
D,L-Lorazepam	>100,000	Thebaine	3,000
Midazolam	5,000	Levorphanol	10,000
Nitrazepam	3,000	Norcodeine	6,250
Norchlordiazepoxide	100	Procaine	150,000
Nordiazepam	400	<b>Metadone (MTD200)</b>	*
Temazepam	200	Metadone	200
Triazolam	1,000	Doxylamine	40,000
Demoxepam	1,800	<b>Metadone (MTD300)</b>	*
Flurazepam	450	Metadone	300
<b>Benzodiazepines (BZO300)</b>	*	Doxylamine	50,000
Oxazepam	300	<b>Methaqualone (MQL)</b>	
Alprazolam	200	Methaqualone	300
α-Hydroxyalprazolam	1,500	<b>Opiate (OPI)</b>	*
Bromazepam	500	Morphine	2,000
Chlordiazepoxide	1,500	Codeine	2,000
Clobazam	100	Ethyl Morphine	1,500
Clonazepam	800	Heroin	2,000
Clorazepate dipotassium	200	Hydrocodone	12,500
Delorazepam	1,500	Hydromorphone	3,500
Desalkylflurazepam	400	Levorphanol	75,000
Diazepam	200	6-Monoacetylmorphine	1,500
Estazolam	1,000	Morphine 3-β-d-glucuronide	2,000
Flunitrazepam	2,500	Norcodeine	12,500

D,L-Lorazepam	>100,000	Normorphine	50,000
Midazolam	12,500	Oxycodone	25,000
Nitrazepam	4,000	Oxymorphone	25,000
Norchlordiazepoxide	200	Procaine	150,000
Nordiazepam	500	Thebaine	5,000
Temazepam	250	<b>Oxycodone (OXY)</b>	*
Triazolam	1,200	Oxycodone	100
Demoxepam	2,000	Dihydrocodeine	20,000
Flurazepam	500	Codeine	100,000
<b>Buprenorphine (BUP5)</b>	*	Hydromorphone	100,000
Buprenorphine	5	Morphine	* 100,000
Buprenorphine -3-D-Glucuronide	10	Acetylmorphine	* 100,000
Norbuprenorphine	15	Buprenorphine	* 100,000
Norbuprenorphine 3-D-Glucuronide	100	Ethylmorphine	* 100,000
<b>Buprenorphine (BUP10)</b>	*	Thebaine	>100,000
Buprenorphine	10	Oxymorphone	1,000
Buprenorphine -3-D-Glucuronide	15	<b>Phencyclidine (PCP)</b>	*
Norbuprenorphine	20	Phencyclidine	25
Norbuprenorphine 3-D-Glucuranide	200	4-Hydroxyphencyclidine	12,500
Morphine	>100,000	<b>Pregabalin (PGB)</b>	
Oxymorphone	>100,000	Pregabalin	500
Hydromorphone	>100,000	Vigabatrin	* 100,000
<b>Cocaine (COC100)</b>	*	Gabapentin	* 100,000
Benzoylcegonine	100	Phenibut	100,000
Cocaine	250	<b>Propoxyphene (PPX)</b>	*
Cocaethylene	4,000	d-Propoxyphene	300
Ecgonine	10,000	d-Norpropoxyphene	300
Ecgonine methyl Ester	>100,000	<b>Nortriptyline (TCA)</b>	*
<b>Cocaine (COC150)</b>	*	Nortriptyline	1,000
Benzoylcegonine	150	Nordoxepin	1,000
Cocaine	375	Trimipramine	3,000
Cocaethylene	6,250	Amritriptyline	1,500
Ecgonine	16,000	Promazine	1,500
Ecgonine methyl Ester	>100,000	Desipramine	200
<b>Cocaine (COC300)</b>	*	Imipramine	400
Benzoylcegonine	300	Clomipramine	12,500
Cocaine	750	Doxepin	2,000
Cocaethylene	12,500	Maprotiline	2,000
Ecgonine	32,000	Promethazine	25,000
Ecgonine methyl Ester	>100,000	<b>Cannabinoids (THC15)</b>	
<b>Cotinine (COT)</b>	*	11-nor-Δ9-THC-9-COOH	15
Cotinine	200	11-hydroxy-Δ9-Tetrahydrocannabinol	25,000
<b>EDDP100</b>	*	Δ8-Tetrahydrocannabinol	25,000
2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine	100	Δ9-Tetrahydrocannabinol	25,000
Metadone	100,000	Cannabinol	25,000
EMDP	100,000	Cannabidiol	50,000
<b>EDDP300</b>	*	<b>Cannabinoids (THC25)</b>	*
2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine	300	11-nor-Δ9-THC-9-COOH	25
Metadone	300,000	11-nor-Δ8-THC-9-COOH	15
EMDP	300,000	11-hydroxy-Δ9-Tetrahydrocannabinol	2,500
<b>Ethyl Glucuronide (EtG300)</b>	*	Δ8-Tetrahydrocannabinol	900
Ethyl Glucuronide	300	Δ9-Tetrahydrocannabinol	4,500
<b>Ethyl Glucuronide (EtG500)</b>	*	Cannabinol	16,000
Ethyl Glucuronide	500	Cannabidiol	50,000
<b>Fentanyl (FTY)</b>	*	<b>Cannabinoids (THC40)</b>	*
Norfentanyl	20	11-nor-Δ9-THC-9-COOH	40
Fentanyl	200	11-nor-Δ8-THC-9-COOH	20
<b>Gabapentin (GAB)</b>		11-hydroxy-Δ9-Tetrahydrocannabinol	4,000
Gabapentin	2000	Δ8-Tetrahydrocannabinol	1,100
Pregabalin	90,000	Δ9-Tetrahydrocannabinol	4,800
<b>Vigabatrin</b>	* 100,000	Cannabinol	18,000
<b>Hydromorphone (HMO)</b>	*	Cannabidiol	80,000
Hydromorphone	300	<b>Cannabinoids (THC50)</b>	*
Hydrocodone	100	11-nor-Δ9-THC-9-COOH	50
Codeine	5000	11-nor-Δ8-THC-9-COOH	30
Oxycodone	10,000	11-hydroxy-Δ9-Tetrahydrocannabinol	5,000
Morphine	50000	Δ8-Tetrahydrocannabinol	1,300
Thebaine	90,000	Δ9-Tetrahydrocannabinol	5,000
Norhydromorphone HCl	100000	Cannabinol	20,000
6-Acetylmorphine	>100,000	Cannabidiol	100,000
Buprenorphine	>100,000	<b>Tramadol (TRA100)</b>	*
Hydromorphone-3-beta-D-glucuronide	>100,000	Tramadol	100
Morphine-3-beta-D-glucuronide	>100,000	<b>Tramadol (TRA200)</b>	*
Naloxone hydrochloride	>100,000	Tramadol	200
<b>Synthetic Cannabinoids (K2)</b>	*	<b>Tramadol (TRA1000)</b>	*
JWH-018 Pentanoic Acid	50	Tramadol	1000
JWH-073 Butanoic Acid	50		
JWH-018 N-4-hydroxypentyl	2,000		

#### Effect of Urinary Specific Gravity