

Drug Tests (Strip/Card/Cassette/Cup)

Package Insert for testing of any combination of the following drugs:

APAP/CFYL/COT/CLZP/EDDP/ETG/FEN/GBPT/HMO/KET/K2/K3/K4/LSD/MCAT/MDPV/MEP/MQL/MTHP/TRA/ZOLP/6-MAM/KRA/XYL

Available with Specimen Validity Tests (S.V.T.) for:

Oxidants/PCC, Specific Gravity, pH, Nitrite, Glutaraldehyde and Creatinine

One step, rapid screening tests for the qualitative detection of drug(s) and drug metabolites in human urine.

For forensic use only.

INTENDED USE

Drug Tests (Strip/Card/Cassette/Cup) is a lateral flow chromatographic immunoassay designed to qualitatively detect the presence of drug(s) and/or drug metabolites in human urine at the following cut-off concentrations:

Test Name	Calibrator	Cut-off
APAP/Acetaminophen	Acetaminophen	5000 ng/mL
APAP/Acetaminophen	Acetaminophen	2000 ng/mL
CFYL/Carfentanyl	Carfentanyl	500 ng/mL
COT/Cotinine	Cotinine	200 ng/mL
CLZP/Klonopin	Klonopin	300 ng/mL
EDDP/EDDP	EDDP	300 ng/mL
ETG/Ethyl Glucuronide	Ethyl Glucuronide	1000 ng/mL
ETG/Ethyl Glucuronide	Ethyl Glucuronide	500 ng/mL
ETG/Ethyl Glucuronide	Ethyl Glucuronide	300 ng/mL
FEN/Fentanyl	Fentanyl	300 ng/mL
FEN/Fentanyl	Fentanyl	200 ng/mL
FEN/Fentanyl	Fentanyl	100 ng/mL
FEN/Fentanyl	Fentanyl	50 ng/mL
FEN/Fentanyl	Fentanyl	25 ng/mL
FEN/Fentanyl	Fentanyl	20 ng/mL
FEN/Fentanyl	Fentanyl	10 ng/mL
FEN/Fentanyl	Fentanyl	5 ng/mL
FEN/Fentanyl	Fentanyl	2 ng/mL
FEN/Fentanyl	Fentanyl	1 ng/mL
GBPT/Gabapentin	Gabapentin	2000 ng/mL
GBPT/Gabapentin	Gabapentin	1000 ng/mL
HMO/Hydromorphone	Hydromorphone	300 ng/mL
KET/Ketamine	Ketamine	1000 ng/mL
KET/Ketamine	Ketamine	300 ng/mL
KET/Ketamine	Ketamine	100 ng/mL
K2/K2	JWH-018/JWH-073	50 ng/mL
K2/K2	JWH-018/JWH-073	25 ng/mL
K2/K2	JWH-018/JWH-073	20 ng/mL
K3/AB-PINACA	AB-PINACA	300 ng/mL
K3/AB-PINACA	AB-PINACA	25 ng/mL
K4/UR-144	UR-144 5-Pentanoic acid	10 ng/mL
	Metabolite	
LSD/Lysergic Acid Diethylamide	LSD	10 ng/mL
LSD/Lysergic Acid Diethylamide	LSD	3 ng/mL
LSD/Lysergic Acid Diethylamide	LSD	0.5 ng/mL
MCAT/Methcathinone	S-(+)-MethcathinoneHcl	1000 ng/mL
MDPV/Methylenedioxypvprovalerone	Methylenedioxypvprovalerone	500 ng/mL
MDPV/Methylenedioxypvprovalerone	Methylenedioxypvprovalerone	300 ng/mL
MEP/Mephedrone	Mephedrone	500 ng/mL
MQL/Methqualone	Methqualone	300 ng/mL
MTHP/Methylphenidate	Methylphenidate	300 ng/mL
TRA/Tramadol	Tramadol	300 ng/mL
TRA/Tramadol	Tramadol	200 ng/mL
TRA/Tramadol	Tramadol	100 ng/mL
ZOLP/Zolpidem	Zolpidem	10 ng/mL
6-MAM/6-Monoacetylmorphine	6-Monoacetylmorphine	10 ng/mL
KRA/Kratom	Mitragynine	1000 ng/mL
KRA/Kratom	Mitragynine	500 ng/mL
KRA/Kratom	Mitragynine	300 ng/mL
KRA/Kratom	Mitragynine	250 ng/mL
KRA/Kratom	Mitragynine	200 ng/mL
KRA/Kratom	Mitragynine	100 ng/mL
KRA/Kratom	Mitragynine	25 ng/mL
XYL/Xylazine	Xylazine	1000 ng/mL

Drug Tests (Strip/Card/Cassette/Cup) provides only a preliminary analytical test result. The test is not intended to be used in monitoring the drug levels. A more specific alternate method must be used in order to confirm the test result. Gas Chromatography/Mass Spectrometry (GC/MS) is the preferred confirmatory method. Clinical consideration and professional judgment should be applied to any drug of abuse test results, particularly when preliminary positive results are obtained.

SUMMARY AND EXPLANATION OF THE TEST

Drug Tests (Strip/Card/Cassette/Cup) is an easy, fast, qualitative, visually read competitive binding immunoassay method for screening specific drugs and their metabolites without the need of instrumentation. The method employs a unique mixture of antibodies to selectively detect the elevated levels of specific drugs and their metabolites in urine.

ACETAMINOPHEN / APAP

Acetaminophen is one of the most commonly used drugs, yet it is also an important cause of serious liver injury. Acetaminophen is the generic name of a drug found in many common brand name over-the-counter (OTC) products, such as Tylenol, and Prescription (Rx) products, such as Vicodin and Percocet. Acetaminophen is an important drug, and its effectiveness in relieving pain and fever is widely known. Unlike other commonly used drugs to reduce pain and fever (e.g., nonsteroidal antiinflammatory drugs (NSAIDs), such as aspirin, ibuprofen, and naproxen), at recommended doses acetaminophen does not cause adverse effects, such as stomach discomfort and bleeding, and acetaminophen is considered safe when used according to the directions on its OTC or Rx labeling. However, taking more than the recommended amount can cause liver damage, ranging from abnormalities in liver function blood tests, to acute liver failure, and even death. Many cases of overdose are caused by patients inadvertently taking more than the recommended dose (i.e., 4 grams a day) of a particular product, or by taking more than one product containing acetaminophen (e.g., an OTC product and an Rx drug containing acetaminophen). The mechanism of liver injury is not related to acetaminophen itself, but to the production of a toxic metabolite. The toxic metabolite binds with liver proteins, which cause cellular injury. The ability of the liver to remove this metabolite before it binds to liver protein influences the extent of liver injury.

CARFENTANYL / CFYL

Carfentanyl is an extremely potent opioid analgesic used in veterinary medicine to anesthetize large animals such as elephants and rhinoceroses. Carfentanyl has also been used in humans to image opioid receptors. Effects and side effects of carfentanyl in humans are similar to those of other opioids and include euphoria, relaxation, pain relief, pupil constriction, drowsiness, sedation, slowed heart rate, low blood pressure, lowered body temperature, loss of consciousness, and suppression of breathing. The effects of carfentanyl, including overdose, can be reversed by the opioid antagonists naloxone and naltrexone, though higher doses than usual may be necessary compared to other opioids. Carfentanyl is a structural analogue of the synthetic opioid analgesic fentanyl. It acts as an ultrapotent and highly selective agonist of the μ -opioid receptor.

COTININE / COT

Cotinine is the first-stage metabolite of nicotine, a toxic alkaloid that produces stimulation of the autonomic ganglia and central nervous system when in humans. Nicotine is a drug to which virtually every member of a tobacco-smoking society is exposed whether through direct contact or second-hand inhalation. In addition to tobacco, nicotine is also commercially available as the active ingredient in smoking replacement therapies such as nicotine gum, transdermal patches and nasal sprays. In a 24-hour urine, approximately 5% of a nicotine dose is excreted as unchanged drug with 10% as Cotinine and 35% as hydroxyl cotinine; the concentrations of other metabolites are believed to account for less than 5%. While Cotinine is thought to be an inactive metabolite, it's elimination profile is more stable than that of nicotine which is largely urine pH dependent. As a result, Cotinine is considered a good biological marker for determining nicotine use. The plasma half-life of nicotine is approximately 60 minutes following inhalation or parenteral administration. 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.

KLONOPIN / CLZP

Klonopin (CLZP) is an anti-anxiety, anti-depressant, sedative, hypnotic and antispasm, one of the commonly used psychotropic drugs. Excessive intake of clonazepam can lead to persistent psychosis, severe drowsiness, incoherent speech, slowing heart rate, shortness of breath or difficulty, severe fatigue. Use an overdose of negative effects of clonazepam, in recent years, the anesthesia robbery increased year by year in our country criminal cases, drugs to rob, klonopinuse frequency is higher in the robbery.

EDDP / EDDP

Methadone, a Schedule II controlled substance, is often used in the treatment of opiate addiction and pain management; it also has a high potential for abuse. Methadone is metabolized primarily into two pharmacologically inactive metabolites, EDDP and EMDP. (2-ethylidene-1, 5-

dimethyl-3, 3-diphenylpyrrolidine) represents a better urine marker for monitoring methadone maintenance than testing for un-metabolized methadone alone.

ETHYL GLUCURONIDE / ETG

Ethyl Glucuronide (ETG) is a metabolite of ethyl alcohol which is formed in the body by glucuronidation following exposure to ethanol, such as by drinking alcoholic beverages. It is used as a biomarker to test for ethanol use and to monitor alcohol abstinence in situations where drinking is prohibited, such as in the military, in professional monitoring programs (health professionals, attorneys, airline pilots in recovery from additions), in schools, in liver transplant clinics, or in recovering alcoholic patients. ETG can be measured in urine up to approximately 80 hours after ethanol is ingested. ETG is a more accurate indicator of the recent exposure to alcohol than measuring for the presence of ethanol itself.

FENTANYL / FEN

Fentanyl is an extremely fast-acting synthetic narcotic analgesic, of high potency (approximately 100 to 200 times that of morphine) and short duration of action. Pharmaceutical fentanyl has been available since 1963 as an anaesthetic supplement, and is available as a citrate salt for I.V or I.M injection. Transdermal patches are also available for management of chronic pain or for breakthrough cancer pain. Due to the lipophilicity of the drug, fentanyl rapidly crosses the blood-brain barrier, producing fast and pronounced CNS effect, such as a heightened euphoria and respiratory depression, and possible toxic effects which include muscle rigidity, seizures, coma, and hypotension. Fentanyl also has similar tolerance and physical dependence properties to those of morphine.

GABAPENTIN / GBPT

Gabapentin is a medication which is used to treat partial seizures, neuropathic pain, hot flashes, and restless legs syndrome.It is recommended as one of a number of first-line medications for the treatment of neuropathic pain caused by diabetic neuropathy, postherpetic neuralgia, and central neuropathic pain.

Common side effects of gabapentin include sleepiness and dizziness. Serious side effects include an increased risk of suicide, aggressive behavior, and drug reaction with eosinophilia and systemic symptoms.It is unclear if it is safe during pregnancy or breastfeeding. Lower doses are recommended in those with kidney disease associated with a low glomerular filtration rate.Gabapentin is a gabapentinoid: it has a structure similar to that of the neurotransmitter γ -aminobutyric acid (GABA) and acts by inhibiting certain calcium channels.

The oral bioavailability of gabapentin is approximately 80% at 100 mg but decreases to 60% at 300 mg, 47% at 400 mg, 34% at 800 mg, 33% at 1,200 mg, and 27% at 1,600 mg.

Drugs that increase the transit time of gabapentin in the small intestine can increase its oral bioavailability; when gabapentin was co-administered with oral morphine (which slows intestinal peristalsis), the oral bioavailability of a 600 mg dose of gabapentin increased by 50%. Gabapentin at a low dose of 100 mg has a Tmax (time to peak levels) of approximately 1.7 hours, while the Tmax increases to 3 to 4 hours at higher doses.

Hydromorphone / HMO

Hydromorphone, also known as dihydromorphinone, is a centrally acting pain medication of the opioid class. It is made from morphine. It works by changing the way the brain and nervous system respond to pain. Hydromorphone extended-release tablets are used to relieve severe pain in people who are expected to need pain medication around the clock for a long time and who cannot be treated with other medications. Hydromorphone extended-release tablets should only be used to treat people who are tolerant (used to the effects of the medication) to opioid medications because they have taken this type of medication for at least one week and should not be used to treat mild or moderate pain. Short-term pain, pain after an operation or medical or dental procedure, or pain that can be controlled by medication that is taken as needed.

KETAMINE / KET

Ketamine is a drug used in human and veterinary medicine. Ketamine has a wide range of effects in humans, including analgesia, anesthesia, hallucinations and elevated blood pressure. Ketamine is primarily used for the induction and maintenance of general anesthesia, usually in combination with a sedative. The common way to abuse ketamine is smoking, inhalants, intravenous injection or drink. Ketamine is metabolized mostly into metabolites and only 5% of the prototype. The drug is metabolized quickly in the body, and usually can be detected within 2-3 hours after smoking.

K2 / K2

Synthetic cannabis is a psychoactive herbal and chemical product that, when consumed, mimics the effects of cannabis. It is best known by the brand names K2 and Spice, both of which have largely become genericized trademarks used to refer to any synthetic cannabis product. The studies suggest that synthetic cannabinoid intoxication is associated with acute psychosis, worsening of previously stable psychotic disorders, and also may have the ability to trigger a chronic (long-term) psychotic disorder among vulnerable individuals such as those with a family history of mental illness. As of March 1, 2011, five cannabinoids, JWH -018, JWH-073, CP-47,

JWH-200 and cannabicyclohexanol are now illegal in the US because these substances have the potential to be extremely harmful and, therefore, pose an imminent hazard to the public safety.

AB-PINACA / K3

A potent CB1 and CB2 receptor agonist, AB-PINACA is a member of the aminoalkyl-indazole class of synthetic cannabinoids. AB-PINACA is fully substitutes for Δ⁹-THC in rat discrimination studies, while being 1.5x more potent, it is a compound that was first identified as a component of synthetic cannabis products in Japan in 2012. There have been a number of reported cases of deaths and hospitalizations in relation to this synthetic cannabinoid. AB-PINACA was primarily hydrolyzed to AB-PINACA carboxylic acid and metabolized to carbonyl-AB-PINACA and hydroxypentyl AB-PINACA and AB-PINACA. Thus, the presence of the parent compound in the urine indicates AB-PINACA use.

UR-144 / K4

UR-144 is also known under the names TMCP-018, KM-X1, UR-144, MN-001, and YX-17. UR-144 acts as selective full agonist of the peripheral CB2 receptor in vitro (outside living organism). UR-144 has a low affinity for the CB1 receptor. UR-144 would be a great addition to researchers concentrating on the peripheral CB1 receptor. UR-144 has been detected as an ingredient of synthetic cannabis smoking blends in New Zealand, and subsequently banned from sale as a temporary class drug on 6 April 2012. It has also been encountered in smoking blends and subsequently banned in Russia. A forensic standard of UR-144 is available, and the compound has been posted on the Forendex website of potential drugs of abuse. Drug Test Card yields a positive result when the concentration of UR-144 Pentanoic Acid metabolite in urine exceeds 10ng/mL.

LYSERGIC ACID DIETHYLAMIDE / LSD

Lysergic acid diethylamide (LSD) is a white powder or a clear, colorless liquid. 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 recreationally used as a hallucinogen for its ability to alter human perception and mood. LSD is primarily used by oral administration, but can be inhaled, injected, and transdermally applied. LSD is a non-selective 5-HT agonist, may exert its hallucinogenic effect by interacting with 5-HT 2A receptors as a partial agonist and modulating the NMDA receptor-mediated sensory, perceptual, affective and cognitive processes. LSD mimics 5-HT at 5-HT 1A receptors, producing a marked slowing of the firing rate of serotonergic neurons. LSD has a plasma half-life of 2.5-4 hours. Metabolites of LSD include N-desmethyl-LSD, hydroxy-LSD, 2-oxo-LSD, and 2-oxo-3-hydroxy-LSD. These metabolites are all inactive. LSD use can typically be detected in urine for periods of 2-5 days.

METHCATHINONE / MCAT

Methcathinone is a central nervous stimulant and monoamine alkaloid of the phenethylamine class which has effects similar but not identical to that of cathinone. Clinical use in the United States, methcathinone is listed as a Schedule I drug, for which there is no clinical use. In the Netherlands, methylcathinone is listed as a Level I substance of the Opium Law, for which there is no clinical use.

METHYLENEDIOXYPYROVALERONE / MDPV

Methylenedioxypyrvalerone (MDPV) is a psychoactive recreational drug with stimulant properties which acts as anorepinephrine-dopamine reuptake inhibitor (NDRI). MDPV remained an obscure stimulant until around 2004 when it was reportedly sold as a designer drug. Products labeled as bath salts containing MDPV were previously sold as recreational drugs in gas stations and convenience stores in the United States, similar to the marketing for Spice and K2 as incense. MDPV is illegal to use in United States for any medical purposes as it is a psychotropic drug. One year ban was also put on this drug by Drug enforcement administration (DEA) in October 2011. This drug is also prohibited in many European countries.

MEPHEDRONE / MEP

Mephedrone is highly addictive. The main harm of mephedrone is to stimulate the human heart, cause the blood circulation system and nervous system to malfunction, and may lead to sudden weight loss in a short period of time. Moreover, once addicted, the symptoms are also very obvious. The main manifestations may include excessive anxiety, strong aggressive tendencies, sudden emotional changes, etc.

METHAQUALONE / MQL

Methaqualone is a sedative-hypnotic drug that is similar in effect to barbiturates. The sedative-hypnotic activity was first noted by Indian researchers in the 1950s. Its use peaked in the early 1970s as a hypnotic, for the treatment of insomnia, and as a sedative and muscle relaxant. It has also been used illegally as a recreational drug. In 1965 a Methaqualone/antihistamine combination was sold as the sedative drug Mandrax, by Roussel Laboratories (now part of Sanofi-Aventis). Methaqualone is a depressant 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. Methaqualone peaks in

the bloodstream within several hours, its effects generally lasting four to eight hours. Regular users build up a physical tolerance, requiring larger doses for the same effect. Overdose can lead to nervous system shut down, coma and death.

METHYLPHENIDATE / MTHP

Methylphenidate (Ritalin) is a psychostimulant drug approved for treatment of ADHD or attention-deficit hyperactivity disorder, postural orthostatic tachycardia syndrome and narcolepsy. Methylphenidate primarily acts as a norepinephrine-dopamine reuptake inhibitor. Methylphenidate is most active at modulating levels of dopamine and to a lesser extent norepinephrine. Similar to cocaine, methylphenidate binds to and blocks dopamine transporters and norepinephrine transporters. Methylphenidate has both dopamine transporter and norepinephrine transporter binding affinity, with the dextromethylphenidate enantiomers displaying a prominent affinity for the norepinephrine transporter. Methylphenidate may also exert a neuroprotective action against the neurotoxic effects of Parkinson's disease and methamphetamine abuse. Methylphenidate taken orally has a bioavailability of 11-52% with a duration of action around 1-4 hours for instant release, 3-8 hours for sustained release, and 8-12 hours for extended release (Concerta). The half-life of methylphenidate is 2-3 hours, depending on the individual. The peak plasma time is achieved at about 2 hours.

TRAMADOL / TRA

Tramadol is a centrally acting opioid analgesic, used in treating moderate to severe pain. Tramadol possesses weak agonist actions at the μ-opioid receptor, releases serotonin, and inhibits the reuptake of norepinephrine. Tramadol undergoes hepatic metabolism, being O- and N-demethylated to five different metabolites. Of these, O-desmethyltramadol is the most significant. Approximately 30% of the dose is excreted in the urine as unchanged drug, whereas 60% of the dose is excreted as metabolites, the remainder is excreted either as unidentified or an unextractable metabolites.

ZOLPIDEM / ZOLP

Zolpidem (brand names Ambien, Ambien CR, Intermezzo, Stilnox, Stilnoct, Sublinox, Hypnogen, Lunata, Zonadin, Sanval, Zolsana and Zolfresh) is a prescription medication used for the treatment of insomnia and some brain disorders. It is a short-acting nonbenzodiazepine hypnotic of the imidazopyridine class that potentiates GABA, an inhibitory neurotransmitter, by binding to GABAA receptors at the same location as benzodiazepines. It works quickly, usually within 15 minutes, and has a short half-life of two to three hours. Zolpidem has not adequately demonstrated effectiveness in maintaining sleep, unless delivered in a controlled-release (CR) form. However, it is effective in initiating sleep. Its hypnotic effects are similar to those of the benzodiazepine class of drugs, but it is molecularly distinct from the classical benzodiazepine molecule and is classified as an imidazopyridine. Zolpidem has slight muscle relaxant and anticonvulsant properties, but has not been approved for use in muscle relaxation or seizure prevention. This is because the dosage of drug needed to cause muscle relaxation is 10 times the sedating dose, and the dosage needed for preventing seizures is 20 times the sedating dose; high dosages are more likely to cause unpleasant side effects such as hallucinations and amnesia.

6-MONOACETYLMORPHINE / 6-MAM

6-Monoacetylmorphine (6-MAM) is one of three active metabolites of heroin (diacetylmorphine). 6-MAM occurs as a metabolite of heroin once it has passed first-pass metabolism. 6-MAM and then is metabolized into morphine or excreted in urine. Heroin is rapidly metabolized by esterase enzymes in the brain and has an extremely short half-life. It has also relatively weak affinity to μ-opioid receptors because the 3-hydroxy group, essential for effective binding to the receptor, is masked by the acetyl group. Therefore, heroin acts as a pro-drug, serving as a lipophilic transporter for the systemic delivery of morphine, which actively binds with μ-opioid receptors. 6-MAM already has a free 3-hydroxy group and shares the high lipophilicity of heroin, so it penetrates the brain just as quickly and does not need to be deacetylated at the 6-position in order to be bioactivated; this makes 6-MAM somewhat more potent than heroin.

KRATOM / KRA

Kratom is a plant of Rubiaceae. It is native to Southeast Asia, and its appearance is yellowish brown or reddish brown plant fragments or powder. Its main active components are pilocarpine and 7-hydroxypilocarpine, which have anesthetic effects similar to morphine. It can be drunk after soaking in water or wine, or filled with capsules. The body will feel excited within ten minutes after taking it.

The high concentration of alkaloid extracts extracted from Kratom leaves may be more harmful than unprocessed leaves. If Kratom is mixed with sedatives such as alcohol, it may have an additive effect. The alkaloids contained in Kratom leaves are natural opioids. Long term use will seriously damage the liver, and lead to anorexia, emaciation and mental disorders. They are highly dependent, and will produce symptoms such as irritability, pain, insomnia, etc. when giving up. According to experts, Kratom leaf is similar to opium. Addicts who eat it raw will

feel extremely energetic at the beginning and can do heavy physical work for a long time. But after a period of taking, it will become a morbid state like other drug addiction.

XYLAZINE / XYL

Xylazine, a non-opioid veterinary tranquilizer not approved for human use, has been linked to an increasing number of overdose deaths nationwide in the evolving drug addiction and overdose crisis. Studies show people exposed to xylazine often knowingly or unknowingly used it in combination with other drugs particularly illicit fentanyl. Also known as “tranq” xylazine is a central nervous system depressant that can cause drowsiness and amnesia and slow breathing, heart rate, and blood pressure to dangerously low levels. Taking opioids in combination with xylazine and other central nervous system depressants like alcohol or benzodiazepines increases the risk of life-threatening overdose.

S.V.T. SUMMARY

The strips contain chemically treated reagent pads. 3 to 5 minutes following the activation of the reagent pads by the urine sample, the colors that appear on the pads can be compared with the printed color chart card. The color comparison provides a semi-quantitative screen for any combination of oxidants/pyridiniumchlorochromate (PCC), specific gravity, pH, nitrite, glutaraldehyde and creatinine in human urine which can help to assess the integrity of the urine sample.

WHAT IS ADULTERATION?

Adulteration is the tampering of a urine specimen with the intention of altering the test results. The use of adulterants can cause false negative results in **Drug Tests (Strip/Card/Cassette/Cup)** by either interfering with the screening test and/or destroying the drugs present in the urine. Dilution may also be employed in an attempt to produce false negative drug test results. One of the best ways to test for adulteration or dilution is to determine certain urinary characteristics such as pH, specific gravity and creatinine and to detect the presence of oxidants/PCC, nitrites or glutaraldehyde in urine.

Oxidants / PCC (Pyridiniumchlorochromate) tests for the presence of oxidizing agents such as bleach and hydrogen peroxide. Pyridiniumchlorochromate (sold under the brand name Urine Luck) is a commonly used adulterant. Normal human urine should not contain oxidants of PCC. **Specific gravity** tests for sample dilution. The normal range is from 1.003 to 1.025. Values outside this range may be the result of specimen dilution or adulteration.

pH tests for the presence of acidic or alkaline adulterants in urine. Normal pH levels should be in the range of 4.0 to 9.0. Values outside of this range may indicate the sample has been altered. **Nitrite** tests for commonly used commercial adulterants such as Kleear and Whizzies. They work by oxidizing the major cannabinoid metabolite THC-COOH. Normal urine should contain no trace of nitrite. Positive results generally indicate the presence of an adulterant.

Glutaraldehyde tests for the presence of an aldehyde. Adulterants such as UrinAid and Clear Choice contain glutaraldehyde which may cause false negative results by disrupting the enzyme used in some immunoassay tests. Glutaraldehyde is not normally found in urine; therefore, detection of glutaraldehyde in a urine specimen is generally an indicator of adulteration.

Creatinine is a waste product of creatine; an amino-acid contained in muscle tissue and found in urine. A person may attempt to foil a test by drinking excessive amounts of water or diuretics such as herbal teas to “flush” the system. Creatinine and specific gravity are two ways to check for dilution and flushing, which are the most common mechanisms used in an attempt to circumvent drug testing. Low Creatinine and specific gravity levels may indicate dilute urine. The absence of Creatinine (<5 mg/dL) is indicative of a specimen not consistent with human urine.

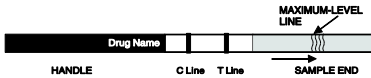
S.V.T. REAGENTS

Adulteration Pad	Reactive indicator	Buffers and non-reactive ingredients
Oxidants / PCC	0.36%	99.64%
Specific Gravity	0.25%	99.75%
pH	0.06%	99.94%
Nitrite	0.07%	99.93%
Glutaraldehyde	0.02%	99.98%
Creatinine	0.04%	99.96%

PRINCIPLE OF TEST

Drug Tests (Strip/Card/Cassette/Cup) is a competitive binding immunoassay in which drugs and drug metabolites in a urine sample compete with immobilized drug conjugate for limited labeled antibody binding sites. When a sufficient amount of urine specimen is applied to the sample pad of the test device, the urine specimen migrates through the test device by capillary action. If the drug or drug metabolite concentration in the specimen is below the cut-off level, the anti-drug antibodies in colloidal gold particles will bind to the drug antigens coated in the test line of the nitrocellulose membrane to form a T line, which indicates a negative result. If the concentration of drug in the urine specimen is above the cut-off level, it will bind with antibodies conjugated with colloidal gold particles, so that no T line will be developed in the test region,

which indicates a positive result.
A **NEGATIVE** specimen produces two distinct red colored bands in both T line and C line.
A **POSITIVE** specimen produces only one distinct red colored band in the C line.



REAGENTS

Drug Tests (Strip/Card/Cassette/Cup) contains membrane strips coated with drug-protein conjugates (purified bovine albumin) on the T zone, goat polyclonal antibody against gold-proteinconjugate at the C zone, and a dye pad which contains colloidal gold particles coated with mouse monoclonal antibodies specific against to Acetaminophen, Carfentanyl, Cotinine, Klonopin, EDDP, EthylGlucuronide, Fentanyl, Gabapentin, Hydromorphone, Ketamine, K2, AB-PINACA, K4, Lysergic Acid Diethylamide, Methcathinone, Methylenedioxypyrovalerone, Mephedrone, Methaqualone, Methylphenidate, Tramadol, Zolpidem, 6-Monoacetylmorphine, Kratom, Xylazine.

MATERIALS PROVIDED

- 1. Test strip/card/cassette/cup
- 2. Product Insert

MATERIALS REQUIRED BUT NOT PROVIDED

- 1. Clock or timer.
- 2. Specimen collection containers.
- 3. External controls.

PRECAUTIONS

- 1. For forensic use only.
- 2. Do not use after the expiration date.
- 3. The test kits should remain in the sealed pouch until use.
- 4. All specimens should be considered potentially hazardous and handle in the same way as an infectious material.
- 5. All used tests should be discarded according to federal, state and local regulation.

STORAGE AND STABILITY

Store test kits in the sealed pouch at 2°C to 30°C. The test kits are stable through the expiration date printed on the sealed pouch. The test kits must remain in the sealed pouch until use. If store at 2°C to 8°C, allow the test kits to reach room temperature(15°C to 28°C) before performing the test. Do not freeze, do not use beyond the expiration date.

SPECIMEN COLLECTION AND STORAGE

Fresh urine specimens should be collected directly into a clean and dry container. Urine collected at any time of the day may be used for testing. Urine specimen exhibiting visible precipitates should be centrifuged, filtered or allowed the precipitates to settle to obtain a clear specimen for testing.

For best results, test a fresh specimen immediately following collection. Storage of specimens should not exceed 2 hours at room temperature or 4 hours refrigerated (2-8°C) prior to using.

TEST PROCEDURE

For Drug Test Strip:

Allow the test strip, urine specimen (if refrigerated), and/or controls to equilibrate to room temperature (15-30°C) prior to testing.

- 1. Remove the test strip from the sealed pouch and dip the end of the strip into the specimen for at least 15 seconds to 20 seconds or until migration occurs. Immerse the strip just below the top line of the wave line on the test strips.
- 2. Place the test strip on a flat dry surface.
- 3. Read the results at 5 to 10 minutes.

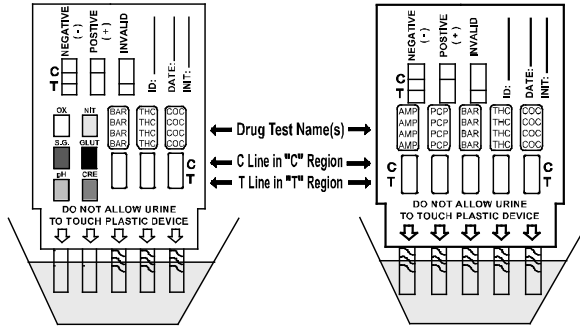


For Drug Test Card:

Allow the test card, urine specimen (if refrigerated), and/or controls to equilibrate to room

temperature (15-30°C) prior to testing.

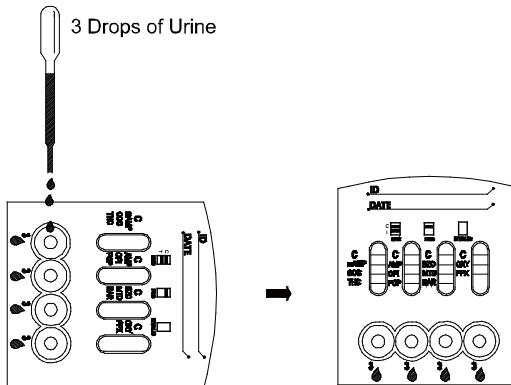
- 1. Removing the test card from the sealed pouch and dip the card into the specimen for at least 15 seconds to 20 seconds or until migration occurs. Immerse the strip(s) of the test card just below the top line of the wave line on the test strips; do not dip the card above the top line.
- 2. Place the test card or the test strip on a flat dry surface.
- 3. Read the adulteration strips between 3 to 5 minutes (when applicable) by comparing the colors in the adulteration pads to the enclosed color chart. If the specimen indicates adulteration, refer to your Drug Free Policy for guidelines on adulterated specimens. We recommended not to interpret the drug test results and suggest you to retest the urine by using another specimen.
- 4. Read the results at 5 to 10 minutes.



For Drug Test Cassette:

Allow the test cassette, urine specimen (if refrigerated), and/or controls to equilibrate to room temperature (15-30°C) prior to testing.

- 1. Bring the pouch to room temperature before opening it. Remove the test cassette from the sealed pouch and use it as soon as possible.
- 2. Place the test cassette on a clean and level surface. Hold the dropper vertically and transfer 3 full drops of urine (approx. 100 µL) to the specimen well (S) of the test cassette, and then start the timer. Avoid trapping air bubbles in the specimen well (S). See the illustration below.
- 3. Wait for the colored line(s) to appear. The result should be read at 5 to 10 minutes. It is important that the background is clear before the result is read.

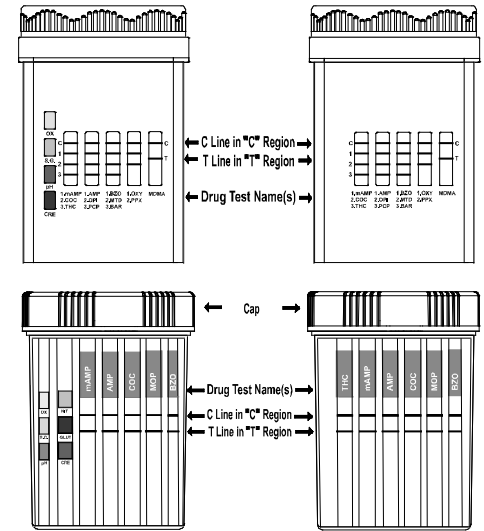


For Drug Test Cup:

Allow the cup, urine specimen (if refrigerated), and/or controls to equilibrate to room temperature (15-30°C) prior to testing.

- 1. Remove the cup from the sealed pouch and use it as soon as possible.
- 2. Collect specimen in the cup and secure the cap tightly.
- 3. If the temperature strip is included with Drug Test Cup, please read urine temperature between 2-4 minutes after voiding to verify the temperature ranges between 90-100°F(33-38°C).
- 4. Place the cup on a flat surface.
- 5. Date and initial the security seal, and place the security seal on the cap.

- 6. Peel off the label on the cup to view the results.
- 7. If adulteration test is included on the test cup, read the adulteration test results between 2 to 5 minutes. See the color chart for interpretation. If the specimen indicates adulteration, we recommend not to interpret the drug test results and either retest the urine or collect another specimen.
- 8. **Read the results at 5 to 10 minutes.** See the illustration below. For detailed operation instructions, please refer to the Procedure Card.



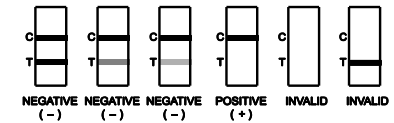
INTERPRETATION OF RESULTS

Positive: One colored line appears in the Control zone (C). No line appears in the Test zone (T). The absence of a line in the test region (T line) indicates a positive result. The positive result indicates that the drug level is above the detectable level.

Note: The samples with positive results should be confirmed with more specific method.

Negative: One colored line appears in the Control zone, and another colored line appears in the Test zone. The negative result indicates the drug or its metabolite level is below the detectable level.

Invalid: No line appears in the Control zone. If no C line or no C line and T line develop within 5 to 10 minutes, the test is invalid. The test should be repeated with a new test device. Insufficient specimen volume or the incorrect procedural techniques are the most likely reasons for invalid result. Review the procedure and repeat the test using a new test strip or device. If the problem persists, discontinue using the current lot and contact your suppliers.



QUALITY CONTROL

The test contains a built-in control feature, the C line. The presence of the C line indicates that the test is performed properly. If a C line does not form, the test is considered invalid. In this case, the testing should be repeated with a new test.

S.V.T. ADULTERATIONS LIMITATIONS

- 1. The adulteration tests included with the product are meant to aid in the determination of abnormal specimens. While comprehensive, these tests are not meant to be an "all-inclusive" representation of possible adulterants.
- 2. Oxidants/PCC: Normal human urine should not contain oxidants or PCC. The presence of high levels of antioxidants in the specimen, such as ascorbic acid, may result in false negative results for the oxidants/PCC pad.
- 3. Specific Gravity: Elevated levels of protein in urine may cause abnormally high specific gravity values.

4. pH tests for the presence of acidic or alkaline adulterants in urine. Normal pH levels should be in the range of 4.0 to 9.0. Values outside of this range may indicate the sample has been altered.
5. Nitrite: Nitrite is not a normal component of human urine. However, nitrite found in urine may indicate urinary tract infections or bacterial infections. Nitrite levels of > 20mg/dL may produce false positive glutaraldehyde results.
6. Glutaraldehyde: is not normally found in urine. However certain metabolic abnormalities such as ketoacidosis (fasting, uncontrolled diabetes or high protein diets) may interfere with the test results.
7. Creatinine: Normal Creatinine levels are between 20 and 100 mg/dL. Under rare conditions, certain kidney diseases may show dilute urine.

LIMITATIONS

1. **Drug Tests (Strip/Card/Cassette/Cup)** provides only a qualitative, preliminary testing result. Amore specific testing method must be used in order to obtain a confirmed testing result. Gas Chromatography/Mass Spectrometry (GC/MS) is the preferred confirmatory method.
2. There is a possibility that technical or procedural errors, as well as other interfering substances in the urine specimen may cause erroneous results.
3. Adulterants such as bleach or other oxidizing agents may produce erroneous results. If suspected, the test should be repeated with a fresh specimen and a new device.
4. The urine specimens with bacterial contamination should not be used for testing, as these contaminations may interfere with the test and cause false results.
5. A positive result does not indicate level or intoxication, administration route or concentration in urine.
6. A negative result may not necessarily indicate drug-free urine. Negative results can be obtained when drug is present but below the cut-off level of test.
7. Test does not distinguish between drugs of abuse and certain medications.

PERFORMANCE CHARACTERISTICS

Sensitivity:

Sensitivity of **Drug Tests (Strip/Card/Cassette/Cup)** was characterized by validating the test performance around the claimed cut-off concentration of each test. The cut-off of each test was determined by the lowest concentration of drug which produces at least 50% positive testing results in total numbers of determinations. The results were summarized as the following:

Drug concentration Cut-off Range	n	APAP 5000		APAP 2000		CFYL 500		COT 200	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	18	2	19	1	20	0	15	5
+25% Cut-off	20	0	20	4	16	0	20	4	16
+50% Cut-off	20	0	20	0	20	0	20	0	20

Drug concentration Cut-off Range	n	CLZP300		EDDP 300		ETG 1000		ETG 500	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	20	0	20	0	20	0	20	0
+25% Cut-off	20	1	19	0	20	0	20	7	13
+50% Cut-off	20	0	20	0	20	0	20	0	20

Drug concentration Cut-off Range	n	ETG 300		FEN 300		FEN 200		FEN 100	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	20	0	20	0	20	0	19	1
+25% Cut-off	20	7	13	0	20	0	20	0	20
+50% Cut-off	20	0	20	0	20	0	20	0	20

Drug concentration Cut-off Range	n	FEN 50		FEN 25		FEN 20		FEN 10	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	20	0	20	0	20	0	20	0
+25% Cut-off	20	0	20	0	20	6	14	0	20
+50% Cut-off	20	0	20	0	20	0	20	0	20

Drug concentration Cut-off Range	n	FEN 5		FEN 2		FEN 1		GBPT 2000	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	20	0	20	0	20	0	20	0
+25% Cut-off	20	0	20	0	20	2	18	5	15
+50% Cut-off	20	0	20	0	20	2	18	0	20

Drug concentration Cut-off Range	n	GBPT 1000		HMO 300		KET 1000		KET 300	
		-	+	-	+	-	+	-	+

0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	20	0	20	0	19	1	20	0
+25% Cut-off	20	0	20	0	20	0	20	0	20
+50% Cut-off	20	0	20	0	20	0	20	0	20

Drug concentration Cut-off Range	n	KET 100		K2 50		K2 25		K2 20	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	18	2	18	2	20	0	17	3
+25% Cut-off	20	0	20	18	2	5	15	3	17
+50% Cut-off	20	0	20	0	20	0	20	1	19

Drug concentration Cut-off Range	n	K3 300		K3 25		K4 10		LSD 10	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	20	0	20	0	20	0	17	3
+25% Cut-off	20	0	20	0	20	0	20	0	20
+50% Cut-off	20	0	20	0	20	0	20	0	20

Drug concentration Cut-off Range	n	LSD 3		LSD 0.5		MCAT 1000		MDPV 500	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	17	3	20	0	20	0	20	0
+25% Cut-off	20	0	20	0	20	0	20	7	13
+50% Cut-off	20	0	20	0	20	0	20	0	20

Drug concentration Cut-off Range	n	MDPV 300		MEP 500		MQL 300		MTHP 300	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	19	0	20	2	20	0	18	2
+25% Cut-off	20	2	18	0	20	7	13	0	20
+50% Cut-off	20	0	20	0	20	0	20	0	20

Drug concentration Cut-off Range	n	TRA 300		TRA 200		TRA 100		ZOLP 10	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	18	2	20	0	20	0	19	1
+25% Cut-off	20	0	20	0	20	0	20	3	17
+50% Cut-off	20	0	20	0	20	0	20	0	20

Drug concentration Cut-off Range	n	6-MAM 10		KRA 1000		KRA 500		KRA 300	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	20	0	20	0	20	0	20	0
+25% Cut-off	20	3	17	0	20	0	20	3	17
+50% Cut-off	20	0	20	0	20	0	20	0	20

Drug concentration Cut-off Range	n	KRA 250		KRA 200		KRA 100		KRA 25	
		-	+	-	+	-	+	-	+
0% Cut-off	20	20	0	20	0	20	0	20	0
-50% Cut-off	20	20	0	20	0	20	0	20	0
-25% Cut-off	20	20	0	20	0	20	0	20	0
+25% Cut-off	20	0	20	0	20	0	20	0	20
+50% Cut-off	20	0	20	0	20	0	20	0	20

Drug concentration Cut-off Range	n	XYL 1000	
		-	+
0% Cut-off	20	0	20
-50% Cut-off	20	0	20
-25% Cut-off	20	0	20
+25% Cut-off	20	20	0
+50% Cut-off	20	20	0

Precision / Reproducibility:

Reproducibility was determined by replicating tests on five different concentrations of each drug in urine specimens: negative, 50% below cut-off, 25% below cut-off, 25% above cut-off and 50% above cut-off. Each drug test was tested four times daily for five consecutive days with a total 20 assays at each concentration. The data are summarized below:

APAP 5000 Precision/Reproducibility Study:

APAP 5000 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
2500	20	20/0	100%

3750	20	17/3	85%
6250	20	0/20	100%
7500	20	0/20	100%

APAP 2000 Precision/Reproducibility Study:

APAP 2000 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
1000	20	20/0	100%
1500	20	19/1	95%
2500	20	4/16	80%
3000	20	0/20	100%

CFYL 500 Precision/Reproducibility Study:

CFYL 500 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
250	20	20/0	100%
375	20	20/0	100%
625	20	0/20	100%
750	20	0/20	100%

COT 200 Precision/Reproducibility Study:

COT 200 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
100	20	20/0	100%
150	20	15/5	75%
250	20	4/16	80%
300	20	0/20	100%

CLZP 300 Precision/Reproducibility Study:

CLZP 300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
150	20	20/0	100%
225	20	20/0	100%
375	20	1/19	95%
450	20	0/20	100%

EDDP 300 Precision/Reproducibility Study:

EDDP 300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
150	20	20/0	100%
225	20	20/0	100%
375	20	0/20	100%
450	20	0/20	100%

ETG 1000 Precision/Reproducibility Study:

ETG 1000 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
500	20	20/0	100%
750	20	20/0	100%
1250	20	0/20	100%
1500	20	0/20	100%

ETG 500 Precision/Reproducibility Study:

ETG 500 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
250	20	20/0	100%
375	20	20/0	100%
625	20	7/13	65%
750	20	0/20	100%

ETG 300 Precision/Reproducibility Study:

ETG 300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
150	20	20/0	100%
225	20	20/0	100%
375	20	7/13	65%
450	20	0/20	100%

FEN 300 Precision/Reproducibility Study:

FEN 300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
150	20	20/0	100%
225	20	20/0	100%
375	20	0/20	100%
450	20	0/20	100%

FEN 200 Precision/Reproducibility Study:

Concentration (ng/mL)	Determinations	#Neg/#Pos	
0	20	20/0	100%
100	20	20/0	100%
150	20	20/0	100%
250	20	0/20	100%
300	20	0/20	100%

FEN 100 Precision/Reproducibility Study:

FEN 100 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
50	20	20/0	100%
75	20	20/0	100%
125	20	4/16	80%
150	20	0/20	100%

FEN 50 Precision/Reproducibility Study:

FEN 50 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
25	20	20/0	100%
37.5	20	20/0	100%
62.5	20	0/20	100%
75	20	0/20	100%

FEN 25 Precision/Reproducibility Study:

FEN 25 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
12.5	20	20/0	100%
18.75	20	20/0	100%
31.25	20	0/20	100%
37.5	20	0/20	100%

FEN 20 Precision/Reproducibility Study:

FEN 20 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
10	20	20/0	100%
15	20	20/0	100%
25	20	8/12	60%
30	20	1/19	95%

FEN 10 Precision/Reproducibility Study:

FEN 10 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
5	20	20/0	100%
7.5	20	20/0	100%
12.5	20	8/12	60%
15	20	1/19	95%

FEN 5 Precision/Reproducibility Study:

FEN 5 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
2.5	20	20/0	100%
3.75	20	20/0	100%
6.25	20	0/20	100%
7.5	20	0/20	100%

FEN 2 Precision/Reproducibility Study:

FEN 2 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
1	20	20/0	100%
1.5	20	20/0	100%
2.5	20	0/20	100%
3	20	0/20	100%

FEN 1 Precision/Reproducibility Study:

FEN 1 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
0.5	20	20/0	100%
0.75	20	20/0	100%
1.25	20	2/18	90%
1.5	20	2/18	90%

GBPT 2000 Precision/Reproducibility Study:

GBPT 2000 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
1000	20	20/0	100%
1500	20	20/0	100%
2500	20	6/14	70%
3000	20	0/20	100%

GBPT 1000 Precision/Reproducibility Study:

GBPT 1000 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
500	20	20/0	100%
750	20	20/0	100%
1250	20	0/20	100%
1500	20	0/20	100%

HMO 300 Precision/Reproducibility Study:

HMO 300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
150	20	20/0	100%
225	20	20/0	100%
375	20	0/20	100%
450	20	0/20	100%

KET 1000 Precision/Reproducibility Study:

KET 1000 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
500	20	20/0	100%
750	20	19/1	95%
1250	20	0/20	100%
1500	20	0/20	100%

KET 300 Precision/Reproducibility Study:

KET300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
150	20	20/0	100%
225	20	20/0	100%
375	20	1/19	95%
450	20	0/20	100%

KET 100 Precision/Reproducibility Study:

KET 100 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
50	20	20/0	100%
75	20	19/1	95%
125	20	0/20	100%
150	20	0/20	100%

K2 50 Precision/Reproducibility Study:

K2 50 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
25	20	20/0	100%
37.5	20	18/2	90%
62.5	20	2/18	90%
75	20	0/20	100%

K2 25 Precision/Reproducibility Study:

K2 25 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
12.5	20	20/0	100%
18.75	20	20/0	100%
31.25	20	5/15	75%
37.5	20	0/20	100%

K2 20 Precision/Reproducibility Study:

K2 20 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
10	20	20/0	100%
15	20	17/3	85%
25	20	3/17	85%
30	20	1/19	95%

K3 300 Precision/Reproducibility Study:

K3 300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
150	20	20/0	100%
225	20	20/0	100%
375	20	0/20	100%
450	20	0/20	100%

K3 25 Precision/Reproducibility Study:

K3 25 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
12.5	20	20/0	100%
18.75	20	20/0	100%

31.25	20	0/20	100%
37.5	20	0/20	100%

K4 10 Precision/Reproducibility Study:

K4 10 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
5	20	20/0	100%
7.5	20	20/0	100%
12.5	20	0/20	100%
15	20	0/20	100%

LSD 10 Precision/Reproducibility Study:

LSD 10 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
5	20	20/0	100%
7.5	20	17/3	85%
12.5	20	0/20	100%
15	20	0/20	100%

LSD 3 Precision/Reproducibility Study:

LSD 3 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
1.5	20	20/0	100%
2.25	20	17/3	85%
3.75	20	0/20	100%
4.5	20	0/20	100%

LSD 0.5 Precision/Reproducibility Study:

LSD 0.5 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
0.25	20	20/0	100%
0.375	20	20/0	100%
0.625	20	0/20	100%
0.75	20	0/20	100%

MCAT 1000 Precision/Reproducibility Study:

MCAT 1000 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
500	20	20/0	100%
750	20	20/0	100%
1250	20	0/20	100%
1500	20	0/20	100%
500	20	20/0	100%

MDPV 500 Precision/Reproducibility Study:

MDPV 500 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
250	20	20/0	100%
375	20	19/1	95%
625	20	1/19	95%
750	20	0/20	100%

MDPV 300 Precision/Reproducibility Study:

MDPV 300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
150	20	20/0	100%
225	20	19/1	95%
375	20	2/18	90%
450	20	0/20	100%

MEP 500 Precision/Reproducibility Study:

MEP 500 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
250	20	20/0	100%
375	20	20/0	100%
625	20	0/20	100%
750	20	0/20	100%

MQL 300 Precision/Reproducibility Study:

MQL 300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
150	20	20/0	100%
225	20	18/2	90%
375	20	1/19	95%
450	20	0/20	100%

MTHP 300 Precision/Reproducibility Study:

MTHP 300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
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0	20	20/0	100%
150	20	20/0	100%
225	20	20/0	100%
375	20	7/13	65%
450	20	0/20	100%

TRA 300 Precision/Reproducibility Study:

TRA 300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
150	20	20/0	100%
225	20	19/1	95%
375	20	0/20	100%
450	20	0/20	100%

TRA 200 Precision/Reproducibility Study:

TRA 200 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
100	20	20/0	100%
150	20	20/0	100%
250	20	0/20	100%
300	20	0/20	100%

TRA 100 Precision/Reproducibility Study:

TRA 100 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
50	20	20/0	100%
75	20	18/2	90%
125	20	0/20	100%
150	20	0/20	100%

ZOLP 10 Precision/Reproducibility Study:

ZOLP 10 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
5	20	20/0	100%
7.5	20	19/1	95%
12.5	20	0/20	100%
15	20	0/20	100%

6-MAM 10 Precision/Reproducibility Study:

6-MAM 10 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
5	20	20/0	100%
7.5	20	20/0	100%
12.5	20	3/17	85%
15	20	0/20	100%

KRA 1000 Precision/Reproducibility Study:

KRA 1000 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
500	20	20/0	100%
750	20	20/0	100%
1250	20	0/20	100%
1500	20	0/20	100%

KRA 500 Precision/Reproducibility Study:

KRA 500 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
250	20	20/0	100%
375	20	20/0	100%
625	20	0/20	100%
750	20	0/20	100%

KRA 300 Precision/Reproducibility Study:

KRA 300 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
150	20	20/0	100%
225	20	20/0	100%
375	20	0/20	100%
450	20	0/20	100%

KRA 250 Precision/Reproducibility Study:

KRA 250 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
125	20	20/0	100%
187.5	20	20/0	100%
312.5	20	0/20	100%
375	20	0/20	100%

KRA 200 Precision/Reproducibility Study:

KRA 200 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
100	20	20/0	100%
150	20	20/0	100%
250	20	0/20	100%
300	20	0/20	100%

KRA 100 Precision/Reproducibility Study:

KRA 100 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
50	20	20/0	100%
75	20	20/0	100%
125	20	0/20	100%
150	20	0/20	100%

KRA 25 Precision/Reproducibility Study:

KRA 25 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
12.5	20	20/0	100%
18.75	20	20/0	100%
31.25	20	0/20	100%
37.5	20	0/20	100%

XYL 1000 Precision/Reproducibility Study:

XYL 1000 Concentration (ng/mL)	Total numbers of Determinations	Results #Neg/#Pos	Precision (%)
0	20	20/0	100%
500	20	20/0	100%
750	20	20/0	100%
1250	20	0/20	100%
1500	20	0/20	100%

The data presented here demonstrates excellent precision/reproducibility of **Drug Tests (Strip/Card/Cassette/Cup)** across multiple concentrations of human urine.

Analytical Specificity:

Cross-reactivity was established by spiking various concentrations of similarly structured drug compounds into drug-free urine/aneegative control. Analyzing various concentration of each compound by using **Drug Tests (Strip/Card/Cassette/Cup)**, the concentration of the drug that produced a response approximately equivalent to the cut-off concentration of the assay was determined. Results of those studies appear in the table(s) below:

Drug Compound	Response equivalent to cutoff in ng/mL
Acetaminophen 5000 (APAP)	
Acetaminophen	5000
Acetaminophen 2000 (APAP)	
Acetaminophen	2000
Carfentanyl 500 (CFYL)	
Carfentanyl	500
Fentanyl	>10000
Cotinine 200 (COT)	
Cotinine	200
Nicotine	6000
Klonopin 300 (CLZP)	
Klonopin	300
α-Hydroxylprazolam	10000
Bromazepam	10000
Clobazam	100000
Clonazepam	300
Diazepam	50000
Estazolam	5000
Flurazepam	5000
Lormetazepam	250
Lorazepam	50
Nordiazepam	10000
Oxazepam	40000
Temazepam	50000
EDDP 300 (EDDP)	
2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine	300
Methodone	25000
Doxylamine	100000
Ethyl Glucuronide 1000 (ETG)	
Ethyl- β -D-Glucuronide	1000
Ethanol	>100,000
Propyl β-D-glucuronide	50000
Butanol	>100,000
Glucuronic Acid	>100,000
Methanol	>100,000
Morphine 3β-glucuronide	>100,000
Morphine 6β-glucuronide	>100,000
Ethyl Glucuronide 500 (ETG)	

Ethyl- β -D-Glucuronide	500
Ethanol	>100,000
Propyl β-D-glucuronide	50000
Butanol	>100,000
Glucuronic Acid	>100,000
Methanol	>100,000
Morphine 3β-glucuronide	>100,000
Morphine 6β-glucuronide	>100,000
Ethyl Glucuronide 300 (ETG)	
Ethyl- β -D-Glucuronide	300
Ethanol	>100,000
Propyl β-D-glucuronide	50000
Butanol	>100,000
Glucuronic Acid	>100,000
Methanol	>100,000
Morphine 3β-glucuronide	>100,000
Morphine 6β-glucuronide	>100,000
Fentanyl 300 (FEN)	
Fentanyl	300
Morphine	>100,000
Hydromorphone	>100,000
Oxycodone	>100,000
Oxymorphone	>100,000
Fentanyl 200 (FEN)	
Fentanyl	200
Morphine	>100,000
Hydromorphone	>100,000
Oxycodone	>100,000
Oxymorphone	>100,000
Fentanyl 100 (FEN)	
Fentanyl	100
NorFentanyl	50,000
Morphine	>100,000
Hydromorphone	>100,000
Oxycodone	>100,000
Oxymorphone	>100,000
Fentanyl 50 (FEN)	
Fentanyl	50
NorFentanyl	50,000
Morphine	>100,000
Hydromorphone	>100,000
Oxycodone	>100,000
Oxymorphone	>100,000
Fentanyl 25 (FEN)	
Fentanyl	25
Morphine	>100,000
Hydromorphone	>100,000
Oxycodone	>100,000
Oxymorphone	>100,000
Fentanyl 20 (FEN)	
Fentanyl	20
Morphine	>100,000
Hydromorphone	>100,000
Oxycodone	>100,000
Oxymorphone	>100,000
Fentanyl 10 (FEN)	
Fentanyl	10
Morphine	>100,000
Hydromorphone	>100,000
Oxycodone	>100,000
Oxymorphone	>100,000
Fentanyl 5 (FEN)	
Fentanyl	5
Morphine	>100,000
Hydromorphone	>100,000
Oxycodone	>100,000
Oxymorphone	>100,000
Fentanyl 2 (FEN)	
Fentanyl	2
Morphine	>100,000
Hydromorphone	>100,000
Oxycodone	>100,000
Oxymorphone	>100,000
Fentanyl 1 (FEN)	
Fentanyl	1
Morphine	>100,000
Hydromorphone	>100,000
Oxycodone	>100,000
Oxymorphone	>100,000
Gabapentin 2000 (GBPT)	
Gabapentin	2000
Pregabalin	100,000
Vigabatrin	>100,000

Gabapentin 1000 (GBPT)	
Gabapentin	1000
Pregabalin	>50,000
Vigabatrin	>100,000
Hydromorphone 300 (HMO)	
Hydromorphone	300
Heroin	4000
Hydrocodone	300
Codeine	5000
Oxymorphone	50
Ketamine 1000 (KET)	
Ketamine	1000
methamphetamine	25,000
Ketamine 300 (KET)	
Ketamine	300
methamphetamine	7500
Ketamine 100 (KET)	
Ketamine	100
methamphetamine	25,00
K2 50 (K2)	
JWH-018 N-(5-hydroxypentyl) metabolite	50
JWH-073 N-(4-hydroxybutyl) metabolite	50
JWH-018 pentanoic acid	50
JWH-073 butanoic acid	50
JWH-018	15,000
JWH-073	15,000
JWH 019 N-(5-hydroxyhexyl) metabolite	100
JWH 081 N-(5-hydroxypentyl) metabolite	3000
JWH 122 N-(5-hydroxypentyl) metabolite	150
JWH 200 5-hydroxyindole metabolite	150
JWH 203 N-(5-hydroxypentyl) metabolite	10000
JWH 210 N-(5-hydroxypentyl) metabolite	1500
JWH 250 N-(5-hydroxypentyl) metabolite	>100,000
JWH 398 N-(5-hydroxypentyl) metabolite	150
AM2201 N-(4-hydroxypentyl) metabolite	100
AM694 N-(5-hydroxypentyl) metabolite	250
PB-22 N-(5-hydroxypentyl) metabolite	>100,000
AKB48 N-(5-hydroxypentyl) metabolite	>100,000
K2 25 (K2)	
JWH-018 N-(5-hydroxypentyl) metabolite	25
JWH-073 N-(4-hydroxybutyl) metabolite	25
JWH-018 pentanoic acid	25
JWH-073 butanoic acid	25
JWH-018	10,000
JWH-073	10,000
JWH 019 N-(5-hydroxyhexyl) metabolite	50
JWH 081 N-(5-hydroxypentyl) metabolite	1500
JWH 122 N-(5-hydroxypentyl) metabolite	75
JWH 200 5-hydroxyindole metabolite	75
JWH 203 N-(5-hydroxypentyl) metabolite	5000
JWH 210 N-(5-hydroxypentyl) metabolite	750
JWH 250 N-(5-hydroxypentyl) metabolite	>100,000
JWH 398 N-(5-hydroxypentyl) metabolite	75
AM2201 N-(4-hydroxypentyl) metabolite	50
AM694 N-(5-hydroxypentyl) metabolite	125
PB-22 N-(5-hydroxypentyl) metabolite	>100,000
AKB48 N-(5-hydroxypentyl) metabolite	>100,000
K2 20 (K2)	
JWH-018 N-(5-hydroxypentyl) metabolite	20
JWH-073 N-(4-hydroxybutyl) metabolite	20
JWH-018 pentanoic acid	20
JWH-073 butanoic acid	20
JWH-018	6,000
JWH-073	6,000
JWH 019 N-(5-hydroxyhexyl) metabolite	40
JWH 081 N-(5-hydroxypentyl) metabolite	1200
JWH 122 N-(5-hydroxypentyl) metabolite	60
JWH 200 5-hydroxyindole metabolite	60
JWH 203 N-(5-hydroxypentyl) metabolite	4000
JWH 210 N-(5-hydroxypentyl) metabolite	600
JWH 250 N-(5-hydroxypentyl) metabolite	>100,000
JWH 398 N-(5-hydroxypentyl) metabolite	60
AM2201 N-(4-hydroxypentyl) metabolite	40
AM694 N-(5-hydroxypentyl) metabolite	100
PB-22 N-(5-hydroxypentyl) metabolite	>100,000
AKB48 N-(5-hydroxypentyl) metabolite	>100,000
AB-PINACA 300 (K3)	
AB-PINACA	300
JWH 073 N-(5-hydroxypentyl) metabolite	>100000
JWH 081 N-(5-hydroxypentyl) metabolite	>100000
JWH 200 5-hydroxyindole metabolite	>100000
JWH 203 N-(5-hydroxypentyl) metabolite	>100000
JWH 398 N-(5-hydroxypentyl) metabolite	>100000

AM 694 N-(5-hydroxypentyl) metabolite	>100000
AKB 48 N-(5-hydroxypentyl) metabolite	>100000
AB-FUBINACA	500
AB-PINACA 5-Pentanoic acid metabolite	50
AB-PINACA 4-Hydroxypentyl metabolite	100
AB-PINACA 5-Hydroxypentyl metabolite	50
MDMB-CHMINACA	>50000
AB-PINACA 25 (K3)	
AB-PINACA	25
JWH 073 N-(5-hydroxypentyl) metabolite	>100000
JWH 081 N-(5-hydroxypentyl) metabolite	>100000
JWH 200 5-hydroxyindole metabolite	>100000
JWH 203 N-(5-hydroxypentyl) metabolite	>100000
JWH 398 N-(5-hydroxypentyl) metabolite	>100000
AM 694 N-(5-hydroxypentyl) metabolite	>100000
AKB 48 N-(5-hydroxypentyl) metabolite	>100000
AB-FUBINACA	500
AB-PINACA 5-Pentanoic acid metabolite	25
AB-PINACA 4-Hydroxypentyl metabolite	25
AB-PINACA 5-Hydroxypentyl metabolite	25
MDMB-CHMINACA	>50000
UR-144 (K4)	
UR-144 5-Pentanoic acid metabolite/K4	10
UR-144	>500000
UR-144 5-Hydroxypentyl metabolite	>500000
XLR-11	>500000
XLR-11 4-Hydroxypentyl metabolite	>500000
Lysergic Acid Diethylamide 10 (LSD)	
LSD	10
Fentanyl	15
Lysergic Acid Diethylamide 3 (LSD)	
LSD	3
Fentanyl	3.75
Lysergic Acid Diethylamide 0.5 (LSD)	
LSD	0.5
Fentanyl	1
Methcathinone 1000 (MCAT)	
Sc(-)-MethcathinoneHcl	1000
(±)-3-Fluoromethcathinone	>100000
S(+)-Methamphetamine	25000
R(+)-MethcathinoneHcl	20000
Methylenedioxypyrovalerone 500 (MDPV)	
Methylenedioxypyrovalerone	500
alpha-FVP	75,000
Mephedrone	75,000
Meproamate	> 100,000
D-Amphetamine	100000
+Methamphetamine	100000
(+/-)3,4-Methylenedioxymethamphetamine (MDMA)	10000
Methylenedioxypyrovalerone 300 (MDPV)	
Methylenedioxypyrovalerone	300
alpha-PVP	75,000
Mephedrone	75,000
Meproamate	> 100,000
D-Amphetamine	100000
+Methamphetamine	100000
(+/-)3,4-Methylenedioxymethamphetamine (MDMA)	10000
Mephedrone 500 (MEP)	
Mephedrone	500
Methaqualone 300 (MQL)	
Methaqualone	300
Phenytoin	40000
Primidone	20000
Theophylline	40000
Methylphenidate 300 (MTHP)	
Methylphenidate	300
Tramadol 300 (TRA)	
Tramadol	300
(+/-) Chlorpheniramine	>100,000
Diphenhydramine	>100,000
Pheniramine	>100,000
Tramadol 200 (TRA)	
Tramadol	200
(+/-) Chlorpheniramine	>100,000
Diphenhydramine	>100,000
Pheniramine	>100,000
Tramadol 100 (TRA)	
Tramadol	100
(+/-) Chlorpheniramine	>100,000
Diphenhydramine	>100,000
Pheniramine	>100,000
Zolpidem 10 (ZOLP)	
Zolpidem	10

Zolpidem Phenyl-4-carboxylic acid	10
D-Amphetamine	100000
+Methamphetamine	100000
(+/-)3,4-Methylenedioxymethamphetamine (MDMA)	10000
6-Monoacetylmorphine 10 (6-MAM)	
6-MAM	10
Heroin	150
Morphine	>100,000
Codeine	>100,000
Oxycodone	>100,000
Hydrocodone	>100,000
Hydromorphone	>100,000
Kratom 1000 (KRA)	
Mitragynine	1000
7-hydroxymitragynine	8000
Kratom 500 (KRA)	
Mitragynine	500
7-hydroxymitragynine	8000
Kratom 300 (KRA)	
Mitragynine	300
7-hydroxymitragynine	8000
Kratom 250 (KRA)	
Mitragynine	250
7-hydroxymitragynine	8000
Kratom 200 (KRA)	
Mitragynine	200
7-hydroxymitragynine	8000
Kratom 100 (KRA)	
Mitragynine	100
7-hydroxymitragynine	8000
Kratom 25 (KRA)	
Mitragynine	25
7-hydroxymitragynine	8000
Xylazine 1000 (XYL)	
Xylazine	1000
4-Hydroxy Xylazine	20000

INTERFERING COMPOUNDS

The following compounds in both drug-free urine and drug positive urines show no cross-reactivity when tested with **Drug Tests (Strip/Card/Cassette/Cup)** at a concentration of 100 µg/mL.

Common Substances:

Dextromethorphan	(+/-)-Epinephrine	Ranitidine
Ampicillin	(+)-Naproxen	Oxalic Acid
Chloroquine	Ethanol	Procaine
Diphenhydramine	Bilirubin	Niacinamide
Benzocaine	GuaiacolGlyceryl Ether	Phenothiazine
Aspirin	1-Phenylephrine	Riboflavin
(+)-Chlorpheniramine	Tyramine	Hemoglobin
Ascorbic Acid	Erythromycin	Acetone
Albumin	Theophylline	Ketamine
Creatine	4-Dimethylaminoantipyrine	Caffeine
Sodium Chloride	Penicillin-G	β -Phenylethylamine
Atropine	Ibuprofen	Dopamine
Sulindac	Quinidine	Lidocaine
Furosemide	Glucose	

Biological Materials:

Albumin	Vitamin(L-Ascorbic Acid)
Bilirubin	Uric Acid
Creatine	Urine pH 4.0-9.0
Hemoglobin	Urine Specific Gravity 1.003-1.025g/mL
Glucose	

(There is a possibility that other substances and/or factors not listed above may interfere with the test and cause false results.)

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