



# 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 immunochemical assay for qualitative and simultaneous detection of Amphetamine, Sebacarbital, Buprenorphine, Oxazepam, Cocaine, 2-ethylendine-1,5-dimethyl-3,3-diphenylpyrrolidine (EDDP), Ethyl Glucuronide, Fentanyl, Synthetic Cannabinoids, Methyleneoxyamphetamines, Methamphetamine, Morphine, Methamphetamine, Oxycodone, Phencyclidine, Propoxyphene, Nortriptyline, Cannabinoids, Tramadol, Ketamine, and Alcohol in human urine with below cutoff concentrations and approximate detection time:

Table with 5 columns: Drug (Identifier), Calibrator, Cut-off level, Minimum detection time, Maximum detection time. Lists various drugs like Amphetamine, Oxazepam, Buprenorphine, Cocaine, Fentanyl, etc.

### HOW TO COLLECT URINE?

- 1. Urinate 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.

### TEST LIMITATIONS

- 1. 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-Monooacetyl morphine (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-monooacetyl morphine (hereinafter abbreviated as 6-MAM) and the molecular formula is C17H19NO4. 6-MAM is metabolized 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.

#### 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.

#### Sebacarbital (BAR)

Sebacarbital is a class of central nervous system depressants. They have a wide range of half-life of 2 to 40 hours and can be detected in the urine for 1 to 10 days after use. Phenobarbital is a long acting barbiturate derivative that has been used as a daytime sedative and very extensively as an anticonvulsant.

#### Methyleneoxyamphetamines (MDMA)

Methyleneoxyamphetamines (MDMA) 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-9-tetrahydrocannabinol-9-carboxylic acid with a half-life of 24 hours. They can be detected for 1 to 5 days after use.

#### 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.

#### Cannabinoids (THC)

Cannabinoids (THC) 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-9-tetrahydrocannabinol-9-carboxylic acid with a half-life of 24 hours. They can be detected for 1 to 5 days after use.

#### Oxazepam (BZO)

Oxazepam (BZO) is 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.

#### 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.

#### Morphine (MOP/OP)

The opiates such as heroin, morphine, and codeine are derived from the resin of opium poppy. The principal metabolites of opiate are morphine, morphine-3-glucuronide morphine and codeine with a half-life of about 3 hours. Heroin is quickly metabolized to morphine. Thus, morphine and morphine glucuronide might be found in the urine of a person who has taken only heroin.

#### 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.

#### Alcohol (ETOH)

Alcohol (ETOH) 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 methadol. The kidneys are a major route of methadone excretion. Methadone has a biological half-life of 15 to 60 hours.

#### 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 methadol. 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

- 2. One (1) Package Inset
- 5 Automation Color Comparison Charts (If equipped)

### MATERIAL REQUIRED BUT NOT PROVIDED

- 1. Urine collection cup
- Timer or clock

### STORAGE AND STABILITY

Keep 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 a drug. This is because each drug is cleared by the body at different rates. Please refer to 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?

- 1. Urinate 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.

### TEST LIMITATIONS

- 1. 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-Monooacetyl morphine (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-monooacetyl morphine (hereinafter abbreviated as 6-MAM) and the molecular formula is C17H19NO4. 6-MAM is metabolized 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.

#### 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.

#### Sebacarbital (BAR)

Sebacarbital is a class of central nervous system depressants. They have a wide range of half-life of 2 to 40 hours and can be detected in the urine for 1 to 10 days after use. Phenobarbital is a long acting barbiturate derivative that has been used as a daytime sedative and very extensively as an anticonvulsant.

#### Methyleneoxyamphetamines (MDMA)

Methyleneoxyamphetamines (MDMA) 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-9-tetrahydrocannabinol-9-carboxylic acid with a half-life of 24 hours. They can be detected for 1 to 5 days after use.

#### 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.

#### Cannabinoids (THC)

Cannabinoids (THC) 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-9-tetrahydrocannabinol-9-carboxylic acid with a half-life of 24 hours. They can be detected for 1 to 5 days after use.

#### Oxazepam (BZO)

Oxazepam (BZO) is 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.

#### 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.

#### Morphine (MOP/OP)

The opiates such as heroin, morphine, and codeine are derived from the resin of opium poppy. The principal metabolites of opiate are morphine, morphine-3-glucuronide morphine and codeine with a half-life of about 3 hours. Heroin is quickly metabolized to morphine. Thus, morphine and morphine glucuronide might be found in the urine of a person who has taken only heroin.

#### 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.

#### Alcohol (ETOH)

Alcohol (ETOH) 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 methadol. The kidneys are a major route of methadone excretion. Methadone has a biological half-life of 15 to 60 hours.

#### 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 methadol. 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

#### EDDP

### Approximate Alcohol Concentration



0.0 mg/100 mL (0.0%) 40 mg/100 mL (0.04%) 80 mg/100 mL (0.08%) 200 mg/100 mL (0.2%)

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 reactions. Certain foods and medicines, diet plan drugs and nutritional supplements may cause the false positive test results.

### 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

- 1. 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-Monooacetyl morphine (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-monooacetyl morphine (hereinafter abbreviated as 6-MAM) and the molecular formula is C17H19NO4. 6-MAM is metabolized 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.

#### 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.

#### Sebacarbital (BAR)

Sebacarbital is a class of central nervous system depressants. They have a wide range of half-life of 2 to 40 hours and can be detected in the urine for 1 to 10 days after use. Phenobarbital is a long acting barbiturate derivative that has been used as a daytime sedative and very extensively as an anticonvulsant.

#### Methyleneoxyamphetamines (MDMA)

Methyleneoxyamphetamines (MDMA) 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-9-tetrahydrocannabinol-9-carboxylic acid with a half-life of 24 hours. They can be detected for 1 to 5 days after use.

#### 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.

#### Cannabinoids (THC)

Cannabinoids (THC) 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-9-tetrahydrocannabinol-9-carboxylic acid with a half-life of 24 hours. They can be detected for 1 to 5 days after use.

#### Oxazepam (BZO)

Oxazepam (BZO) is 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.

#### 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.

#### Morphine (MOP/OP)

The opiates such as heroin, morphine, and codeine are derived from the resin of opium poppy. The principal metabolites of opiate are morphine, morphine-3-glucuronide morphine and codeine with a half-life of about 3 hours. Heroin is quickly metabolized to morphine. Thus, morphine and morphine glucuronide might be found in the urine of a person who has taken only heroin.

#### 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.

#### Alcohol (ETOH)

Alcohol (ETOH) 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 methadol. The kidneys are a major route of methadone excretion. Methadone has a biological half-life of 15 to 60 hours.

#### 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 methadol. 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

#### EDDP

EDDP (2-ethylendine-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 in urine is more beneficial than the detection of methadone because methadone is rapidly excreted 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 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  $\mu$ -opioid receptors. Historically it has been used to treat breakthrough pain and is commonly used as a pain reliever in combination with non-anesthetic in combination with a benzodiazepine. Fentanyl is frequently given intrathecal 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 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), gait instability, and tremor. Serious side effects may include an increased risk of suicide, aggressive behavior, and drug reaction with esoinaphthalene and systemic symptoms.

#### Hydroxyzine (HMO)

Hydroxyzine, also known as dihydrochlorophene or dihydrochlorophene, is a semi-synthetic strong antihistamine. 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 stupeficial. The principal metabolites are non-ketamine. Smoking, mainlining, snuffing, and dissolving into drink or alcohol are the primary method of use. Ketamine is commonly used in combination with amn, marijuana, and alcohol. Therefore, pregabalin abuse can be determined 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. 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-HTagonist, may exert its hallucinogenic effect by interacting with 5-HT2A receptors as a partial agonist and modulating the NMDA receptors, producing a marked feeling of derealization. LSD can cause rate of sensory, feeling, 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.

#### Methyleneoxyamphetamines (MDMA)

Methyleneoxyamphetamines (ecstasy) is a designer drug first synthesized in 1944 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 is a potent CNS depressant. The pattern of psychosis which may appear at half-life of about 15 hours and which (Nichols and Benbenfelder, 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 psychotic delirium. The pattern of psychosis which may appear at half-life of about 15 hours and which (Nichols and Benbenfelder, 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.

#### Morphine (MOP/OP)

The opiates such as heroin, morphine, and codeine are derived from the resin of opium poppy. The principal metabolites of opiate are morphine, morphine-3-glucuronide morphine and codeine with a half-life of about 3 hours. Heroin is quickly metabolized to morphine. Thus, morphine and morphine glucuronide might be found in the urine of a person who has taken only heroin.

#### 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.

#### Alcohol (ETOH)

Alcohol (ETOH) 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 methadol. The kidneys are a major route of methadone excretion. Methadone has a biological half-life of 15 to 60 hours.

#### 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 methadol. 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

#### EDDP

EDDP (2-ethylendine-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 in urine is more beneficial than the detection of methadone because methadone is rapidly excreted 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

TRA (200)	Viewer A	+	0	0	2	19	21	100% (84.5% - 100%)
	Viewer B	-	10	20	8	0	0	95% (75% - 100%)
	Viewer C	+	10	20	8	19	21	100% (84.5% - 100%)
	Viewer D	-	10	20	8	19	21	95% (75% - 100%)
	Viewer E	+	0	0	1	19	21	100% (84.5% - 100%)
	Viewer F	-	10	20	8	0	0	97.5% (82% - 100%)
	Viewer G	+	0	0	2	19	21	100% (84.5% - 100%)
	Viewer H	-	10	20	8	1	0	95% (75% - 100%)
	Viewer I	+	0	0	1	20	20	97.5% (84.5% - 100%)
	Viewer J	-	10	20	9	1	0	97.5% (75% - 100%)
	Viewer K	+	0	0	1	18	20	95% (84.5% - 100%)
	Viewer L	-	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 - 50%, cutoff - 25%, cutoff - 25%, cutoff - 50%, cutoff + 75% and the cutoff + 100%. All concentrations were confirmed with All-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						
			Lot 1		Lot 2		Lot 3		
			Negative	Positive	Negative	Positive	Negative	Positive	
6-MAM	2.5	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	5	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	7.5	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	10	50	47/3	48/2	47/3	47/3	47/3	47/3	47/3
	12.5	50	25/25	22/28	24/26	24/26	24/26	24/26	24/26
	15	50	4/66	5/65	6/64	6/64	6/64	6/64	6/64
	17.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	20	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	22.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	25	50	5/45	5/45	4/46	4/46	4/46	4/46	4/46
AMP (300)	7.5	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	15	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	17.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	20	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	22.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	25	50	5/45	5/45	4/46	4/46	4/46	4/46	4/46
	27.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	30	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	32.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	35	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
AMP (500)	42.5	50	6/64	7/63	6/64	6/64	6/64	6/64	6/64
	45	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	47.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	50	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	52.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	55	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	57.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	60	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	62.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	65	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
AMP (1000)	70	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	75	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	80	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	85	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	90	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	95	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	100	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	105	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	110	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	115	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
BAR	2000	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	0	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	7.5	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	15	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	22.5	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	30	50	5/65	5/65	6/64	6/64	6/64	6/64	6/64
	37.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	45	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	52.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	60	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
BZO (100)	25	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	50	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	75	50	44/4	44/4	47/3	47/3	47/3	47/3	47/3
	100	50	4/66	4/66	4/66	4/66	4/66	4/66	4/66
	125	50	3/67	3/67	2/68	2/68	2/68	2/68	2/68
	150	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	175	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	200	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	225	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	250	50	4/66	4/66	4/66	4/66	4/66	4/66	4/66
BZO (200)	50	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	100	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	150	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	200	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	250	50	4/66	4/66	4/66	4/66	4/66	4/66	4/66
	300	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	350	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	400	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	450	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	500	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
BZO (300)	75	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	125	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	175	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	225	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	275	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	325	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	375	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	425	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	475	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	525	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
BUP (5)	600	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	1.25	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	2.5	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	3.75	50	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	5.0	50	5/65	5/65	6/64	6/64	6/64	6/64	6/64
	6.25	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	7.5	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	8.75	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	10	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
	11.25	50	0/50	0/50	0/50	0/50	0/50	0/50	0/50

COC (100)	15.0	50	0/50	0/50	0/50	0/50
	17.5	50	0/50	0/50	0/50	0/50
	20.0	50	0/50	0/50	0/50	0/50
	22.5	50	50/0	50/0	50/0	50/0
	25	50	100%	100%	100%	100%
	27.5	50	50/0	50/0	50/0	50/0
	30	50	50/0	50/0	50/0	50/0
	32.5	50	50/0	50/0	50/0	50/0
	35	50	50/0	50/0	50/0	50/0
	37.5	50	50/0	50/0	50/0	50/0
COC (150)	42.5	50	0/50	0/50	0/50	0/50
	45	50	0/50	0/50	0/50	0/50
	47.5	50	0/50	0/50	0/50	0/50
	50	50	7/63	6/64	7/63	7/63
	52.5	50	0/50	0/50	0/50	0/50
	55	50	0/50	0/50	0/50	0/50
	57.5	50	0/50	0/50	0/50	0/50
	60	50	0/50	0/50	0/50	0/50
	62.5	50	0/50	0/50	0/50	0/50
	65	50	0/50	0/50	0/50	0/50
COC (300)	70	50	0/50	0/50	0/50	0/50
	75	50	0/50	0/50	0/50	0/50
	80	50	0/50	0/50	0/50	0/50
	85	50	0/50	0/50	0/50	0/50
	90	50	0/50	0/50	0/50	0/50
	95	50	0/50	0/50	0/50	0/50
	100	50	0/50	0/50	0/50	0/50
	105	50	0/50	0/50	0/50	0/50
	110	50	0/50	0/50	0/50	0/50
	115	50	0/50	0/50	0/50	0/50
COT (200)	120	50	0/50	0/50	0/50	0/50
	125	50	0/50	0/50	0/50	0/50
	130	50	0/50	0/50	0/50	0/50
	135	50	0/50	0/50	0/50	0/50
	140	50	0/5			