

One Step Multi-Drug Screen Test Card with Integrated E-Z Split Key™ Cup

Package Insert for Multi Drug Screen Test Cards with the integrated cup

This Instruction Sheet is for testing of any combination of Amphetamine, Barbiturates, Benzodiazepines, Cocaine, Marijuana, Methadone, Methamphetamine, Methylenedioxymethamphetamine, Morphine, Phencyclidine and Tricyclic Antidepressants.

A rapid, one step screening test for the simultaneous, qualitative detection of multiple drugs and drug metabolites in human urine.

For healthcare professionals including professionals at point of care sites.

For in vitro diagnostic use only.

| INTENDED USE | | |
|---|---|--------------------|
| The One Step Multi-Drug Screen Test Card with the integrated cup is a lateral flow chromatographic immunoassay for the qualitative detection of multiple drugs and drug metabolites in urine at the following cut-off concentrations: | | |
| Test | Calibrator | Cut-off |
| Amphetamine (AMP) | D-Amphetamine | 1,000 ng/mL |
| Barbiturates (BAR) | Secobarbital | 300 ng/mL |
| Benzodiazepines (BZO) | Oxazepam | 300 ng/mL |
| Cocaine (COC) | Benzoylecgonine | 300 ng/mL |
| Marijuana (THC) | 11-nor-Δ⁹-THC-9 COOH | 50 ng/MI |
| Methadone (MTD) | Methadone | 300 ng/mL |
| Methamphetamine (mAMP) | D-Methamphetamine | 1,000 ng/mL |
| Methylenedioxymethamphetamine (MDMA) | D,L Methylenedioxymethamphetamine | 500 ng/mL |
| Morphine (MOP 300 or OPI 300) | Morphine | 300 ng/mL |
| Opiates (OPI 2000) | Morphine | 2,000 ng/mL |
| Phencyclidine (PCP) | Phencyclidine | 25 ng/mL |
| Tricyclic (TCA) | Nortriptyline | 1,000 ng/mL |

The configurations of the One Step Multi-Drug Screen Test Card with Integrated Cup come with any combination of the above listed drug analytes. This assay provides only a preliminary analytical test result. A more specific alternate chemical method must be used in order to obtain a confirmed analytical 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 result, particularly when preliminary positive results are used.

| SUMMARY |
|--|
| The One Step Drug Screen Test Card is a rapid urine screening test that can be performed without the use of an instrument. The test utilizes a monoclonal antibody to selectively detect elevated levels of specific drugs in urine. |

AMPHETAMINE (AMP)

Amphetamine is a Schedule II controlled substance available by prescription (Dexedrine®) and is also available on the illicit market. Amphetamines are a class of potent sympathomimetic agents with therapeutic applications. They are chemically related to the human body's natural catecholamines: epinephrine and norepinephrine. Acute higher doses lead to enhanced stimulation of the central nervous system and induce euphoria, alertness, reduced appetite, and a sense of increased energy and power. Cardiovascular responses to Amphetamines include increased blood pressure and cardiac arrhythmias. More acute responses produce anxiety, paranoia, hallucinations, and psychotic behavior. The effects of Amphetamines generally last 2-4 hours following use, and the drug has a half-life of 4-24 hours in the body. About 30% of Amphetamines are excreted in the urine in unchanged form, with the remainder as hydroxylated and deaminated derivatives.

The One Step Drug Screen Test Card yields a positive result when Amphetamines in urine exceed 1,000 ng/mL.

BARBITURATES (BAR)

Barbiturates are central nervous system depressants. They are used therapeutically as sedatives, hypnotics, and anticonvulsants. Barbiturates are almost always taken orally as capsules or tablets. The effects resemble those of intoxication with alcohol. Chronic use of barbiturates leads to tolerance and physical dependence.

Short acting Barbiturates taken at 400 mg/day for 2-3 months produces a clinically significant degree of physical dependence. Withdrawal symptoms experienced during periods of drug abstinence can be severe enough to cause death.

Only a small amount (less than 5%) of most Barbiturates are excreted unaltered in the urine.

The approximate detection time limits for Barbiturates are:

| | | |
|----------------------------------|------------------|---------------------|
| Short acting (e.g. Secobarbital) | 100 mg PO (oral) | 4.5 days |
| Long acting (e.g. Phenobarbital) | 400 mg PO (oral) | 7 days ¹ |

The One Step Drug Screen Test Card yields a positive result when the Barbiturates in urine exceeds 300 ng/mL.

BENZODIAZEPINES (BZO)

Benzodiazepines are medications that are frequently prescribed for the symptomatic treatment of anxiety and sleep disorders. They produce their effects via specific receptors involving a neurochemical called gamma aminobutyric acid (GABA). Because they are safer and more effective, Benzodiazepines have replaced barbiturates in the treatment of both anxiety and insomnia. Benzodiazepines are also used as sedatives before some surgical and medical procedures, and for the treatment of seizure disorders and alcohol withdrawal.

Risk of physical dependence increases if Benzodiazepines are taken regularly (e.g., daily) for more than a few months, especially at higher than normal doses. Stopping abruptly can bring on such symptoms as trouble sleeping, gastrointestinal upset, feeling unwell, loss of appetite, sweating, trembling, weakness, anxiety and changes in perception.

Only trace amounts (less than 1%) of most Benzodiazepines are excreted unaltered in the urine; most of the concentration in urine is conjugated drug. The detection period for the Benzodiazepines in the urine is 3-7 days.

The One Step Drug Screen Test Card yields a positive result when the Benzodiazepines in urine exceeds 300 ng/mL.

COCAINE (COC)

Cocaine is a potent central nervous system (CNS) stimulant and a local anesthetic. Initially, it brings about extreme energy and restlessness while gradually resulting in tremors, over-sensitivity and spasms. In large amounts, cocaine causes fever, unresponsiveness, and difficulty in breathing and unconsciousness.

Cocaine is often self-administered by nasal inhalation, intravenous injection and free-base smoking. It is excreted in the urine in a short time primarily as Benzoylecgonine^{1,2}. Benzoylecgonine, a major metabolite of cocaine, has a longer biological half-life (5-8 hours) than cocaine (0.5-1.5 hours), and can generally be detected for 24-48 hours after cocaine exposure².

The One Step Drug Screen Test Card yields a positive result when the cocaine metabolite in urine exceeds 300 ng/mL. This is the suggested screening cut-off for positive specimens set by the Substance Abuse and Mental Health Services Administration (SAMHSA, USA).

MARIJUANA (THC)

THC (Δ⁹-tetrahydrocannabinol) is the primary active ingredient in cannabinoids (marijuana). When smoked or orally administered, it produces euphoric effects. Users have impaired short term memory and slowed learning. They may also experience transient episodes of confusion and anxiety. Long term relatively heavy use may be associated with behavioral disorders. The peak effect of smoking marijuana occurs in 20-30 minutes and the duration is 90-120 minutes after one cigarette. Elevated levels of urinary metabolites are found within hours of exposure and remain detectable for 3-10 days after smoking. The main metabolite excreted in the urine is 11-nor-Δ⁹-tetrahydrocannabinol-9-carboxylic acid (Δ⁹-THC-COOH).

The One Step Drug Screen Test Card yields a positive result when the concentration of marijuana in urine exceeds 50 ng/mL. This is the suggested screening cut-off for positive specimens set by the Substance Abuse and Mental Health Services Administration (SAMHSA, USA). ³

METHADONE (MTD)

Methadone is a narcotic pain reliever for medium to severe pain. It is also used in the treatment of heroin (opiate dependence: Vicodin, Percocet, Morphine, etc.) addiction. Oral Methadone is very different than IV Methadone. Oral Methadone is partially stored in the liver for later use. IV Methadone acts more like heroin. In most states you must go to a pain clinic or a Methadone maintenance clinic to be prescribed Methadone.

Methadone is a long acting pain reliever producing effects that last from twelve to forty-eight hours. Ideally, Methadone frees the client from the pressures of obtaining illegal heroin, from the dangers of injection, and from the emotional roller coaster that most opiates produce. Methadone, if taken for long periods and at large doses, can lead to a very long withdrawal period. The withdrawals from Methadone are more prolonged and troublesome than those provoked by heroin cessation, yet the substitution and phased removal of methadone is an acceptable method of detoxification for patients and therapists.¹ The MTD One Step Methadone Test Card yields a positive result when the Methadone in urine exceeds 300 ng/mL.

METHAMPHETAMINE (mAMP)

Methamphetamine is an addictive stimulant drug that strongly activates certain systems in the brain. Methamphetamine is closely related chemically to amphetamine, but the central nervous system effects of Methamphetamine are greater. Methamphetamine is made in illegal laboratories and has a high potential for abuse and dependence. The drug can be taken orally, injected, or inhaled. Acute higher doses lead to enhanced stimulation of the central nervous system and induce euphoria, alertness, reduced appetite, and a sense of increased energy and power. Cardiovascular responses to Methamphetamine include increased blood pressure and cardiac arrhythmias. More acute responses

produce anxiety, paranoia, hallucinations, psychotic behavior, and eventually, depression and exhaustion. The effects of Methamphetamine generally last 2-4 hours and the drug has a half-life of 9-24 hours in the body. Methamphetamine is excreted in the urine primarily as amphetamine and oxidized and deaminated derivatives. However, 10-20% of Methamphetamine is excreted unchanged. Thus, the presence of the parent compound in the urine indicates Methamphetamine use. Methamphetamine is generally detectable in the urine for 3-5 days, depending on urine pH level.

The One Step Drug Screen Test Card yields a positive result when the Methamphetamine in urine exceeds 1,000 ng/mL.

METHYLENEDIOXYMETHAMPHETAMINE (MDMA)

Methylenedioxymethamphetamine (ecstasy) is a designer drug first synthesized in 1914 by a German drug company for the treatment of obesity.⁸ Those who take the drug frequently report adverse effects, such as increased muscle tension and sweating. MDMA is not clearly a stimulant, although it has, in common with amphetamine drugs, a capacity to increase blood pressure and heart rate. MDMA does produce some perceptual changes in the form of increased sensitivity to light, difficulty in focusing, and blurred vision in some users. Its mechanism of action is thought to be via release of the neurotransmitter serotonin. MDMA may also release dopamine, although the general opinion is that this is a secondary effect of the drug (Nichols and Oberlander, 1990). The most pervasive effect of MDMA, occurring in virtually all people who took a reasonable dose of the drug, was to produce a clenching of the jaws. Methylenedioxymethamphetamine Test Card yields a positive result when the Methylenedioxymethamphetamine in urine exceeds 500 ng/mL.

OPIATE (MOP 300 or OPI 300)

Opiate refers to any drug that is derived from the opium poppy, including the natural products, morphine and codeine, and the semi-synthetic drugs such as heroin. Opioid is more general, referring to any drug that acts on the opioid receptor.

Opioid analgesics comprise a large group of substances which control pain by depressing the central nervous system. Large doses of morphine can produce higher tolerance levels, physiological dependency in users, and may lead to substance abuse. Morphine is excreted unmetabolized, and is also the major metabolic product of codeine and heroin. Morphine is detectable in the urine for several days after an opiate dose¹.

The One Step Drug Screen Test Card yields a positive result when the concentration of opiate exceeds the 300 ng/mL cut-off level.

OPIATE (2000)

Opiate refers to any drug that is derived from the opium poppy, including the natural products, morphine and codeine, and the semi-synthetic drugs such as heroin. Opioid is more general, referring to any drug that acts on the opioid receptor.

Opioid analgesics comprise a large group of substances which control pain by depressing the central nervous system. Large doses of morphine can produce higher tolerance levels, physiological dependency in users, and may lead to substance abuse. Morphine is excreted unmetabolized, and is also the major metabolic product of codeine and heroin. Morphine is detectable in the urine for several days after an opiate dose.⁴

The One Step Drug Screen Test Card yields a positive result when the morphine in urine exceeds 2,000 ng/mL. This is the suggested screening cut-off for positive specimens set by the Substance Abuse and Mental Health Services Administration (SAMHSA, USA).

PHENCYCLIDINE (PCP)

Phencyclidine, also known as PCP or Angel Dust, is a hallucinogen that was first marketed as a surgical anesthetic in the 1950's. It was removed from the market because patients receiving it became delirious and experienced hallucinations.

Phencyclidine is used in powder, capsule, and tablet form. The powder is either snorted or smoked after mixing it with marijuana or vegetable matter. Phencyclidine is most commonly administered by inhalation but can be used intravenously, intra-nasally, and orally. After low doses, the user thinks and acts swiftly and experiences mood swings from euphoria to depression. Self-injurious behavior is one of the devastating effects of Phencyclidine.

PCP can be found in urine within 4 to 6 hours after use and will remain in urine for 7 to 14 days, depending on factors such as metabolic rate, user's age, weight, activity, and diet.⁵ Phencyclidine is excreted in the urine as an unchanged drug (4% to 19%) and conjugated metabolites (25% to 30%).⁶

The One Step Drug Screen Test Card yields a positive result when the phencyclidine metabolite in urine exceeds 25 ng/mL. This is the suggested screening cut-off for positive specimens set by the Substance Abuse and Mental Health Services Administration (SAMHSA, USA).

TRICYCLIC ANTIDEPRESSANT (TCA)

TCA (Tricyclic Antidepressants) are commonly used for the treatment of depressive disorders. TCA overdoses can result in profound central nervous system depression, cardiotoxicity and anticholinergic effects. TCA overdose is the most common cause of death from prescription drugs. TCAs are taken orally or sometimes by injection. TCAs are metabolized in the liver. Both TCAs and their metabolites are excreted in urine mostly in the form of metabolites for up to ten days. The One Step Drug Screen Test Card yields a positive result when the Tricyclic Antidepressant in urine exceeds 1,000 ng/mL..

| PRINCIPLE |
|---|
| The One Step Multi-Drug Screen Test Card with the integrated cup is an immunoassay based on the |

principle of competitive binding. Drugs which may be present in the urine specimen compete against their respective drug conjugate for binding sites on their specific antibody.

During testing, a urine specimen migrates upward by capillary action. A drug, if present in the urine specimen below its cut-off concentration, will not saturate the binding sites of its specific antibody. The antibody will then react with the drug-protein conjugate and a visible colored line will show up in the test line region of the specific drug strip. The presence of drug above the cut-off concentration will saturate all the binding sites of the antibody. Therefore, the colored line will not form in the test line region.

A drug-positive urine specimen will not generate a colored line in the specific test line region of the strip because of drug competition, while a drug-negative urine specimen will generate a line in the test line region because of the absence of drug competition.

To serve as a procedural control, a colored line will always appear at the control line region, indicating that proper volume of specimen has been added and membrane wicking has occurred.

REAGENTS

The test contains a membrane strip coated with drug-protein conjugates (purified bovine albumin) on the test line, a goat polyclonal antibody against gold-protein conjugate at the control line, and a dye pad which contains colloidal gold particles coated with mouse monoclonal antibody specific to Amphetamine, Cocaine, Methamphetamine, Methylenedioxymethamphetamine, Morphine, THC, Phencyclidine, Benzodiazepine, Methadone, Barbiturate or Tricyclic antidepressant.

PRECAUTIONS

- For healthcare professionals including professionals at point of care sites.
- For *in vitro* diagnostic use only. Do not use after the expiration date.
- The test card should remain in the sealed pouch until use.
- All specimens should be considered potentially hazardous and handled in the same manner as an infectious agent.
- The used test card should be discarded according to federal, state and local regulations.

STORAGE AND STABILITY

Store as packaged in the sealed pouch at 2-30°C. The test strip is stable through the expiration date printed on the sealed pouch. The test strips must remain in the sealed pouch until use. DO NOT FREEZE. Do not use beyond the expiration date.

SPECIMEN COLLECTION AND PREPARATION

Urine Assay

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

Specimen Storage

Urine specimens may be stored at 2-8°C for up to 48 hours prior to testing. For prolonged storage, specimens may be frozen and stored below -20°C. Frozen specimens should be thawed and mixed well before testing.

MATERIALS

Materials Provided

- Integrated E-Z Split Key™ Cup with multi-drug card
- Key
- Security seal label
- Package insert

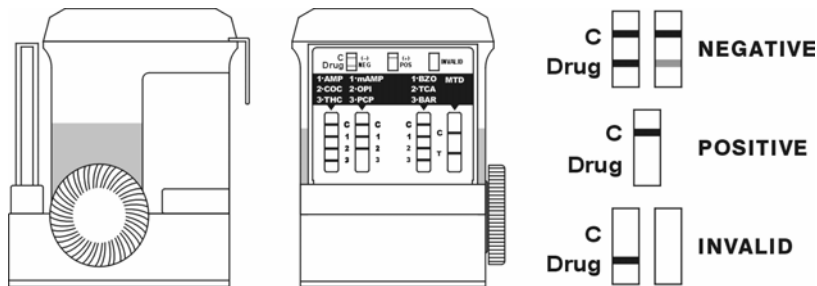
Materials Required But Not Provided

- Timer
- External controls

DIRECTIONS FOR USE

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

- Bring the pouch to room temperature before opening it. Remove the cup from the sealed pouch and use it as soon as possible.
- Donor provides specimen and secures the cap by pressing down on all three corners.
- Technician checks cap for tight seal. Technician dates and initials the security seal and attaches the security seal over the cup cap.
- On a flat surface, technician pushes key to a fully closed position.
- Peel off the label on the multi-drug test card to view results. The test is read in the reaction well.
- Start the timer and wait for the red lines to appear. The results should be read at 5 minutes. Do not interpret results after 10 minutes. See the illustration below. For detailed operation instructions, please refer to the Procedure Card.



INTERPRETATION OF RESULTS

(Please refer to the illustration above)

NEGATIVE:* Two lines appear. One red line should be in the control region (C), and another apparent red or pink line adjacent should be in the test region (Drug/T). This negative result indicates that the drug concentration is below the detectable level.

***NOTE:** The shade of red in the test line region (Drug/T) will vary, but it should be considered negative whenever there is even a faint pink line.

POSITIVE: One red line appears in the control region (C). No line appears in the test region (Drug/T). This positive result indicates that the drug concentration is above the detectable level.

INVALID: Control line fails to appear. Insufficient specimen volume or incorrect procedural techniques are the most likely reasons for control line failure. Review the procedure and repeat the test using a new test panel. If the problem persists, discontinue using the lot immediately and contact your local distributor.

QUALITY CONTROL

A procedural control is included in the test. A red line appearing in the control region (C) is considered an internal procedural control. It confirms sufficient specimen volume, adequate membrane wicking and correct procedural technique.

Control standards are not supplied with this kit. However, it is recommended that positive and negative controls be tested as good laboratory practice to confirm the test procedure and to verify proper test performance.

LIMITATIONS

- The One Step Multi Drug Screen Test Card with the integrated cup provides only a qualitative, preliminary analytical result. A secondary analytical method must be used to obtain a confirmed result. Gas chromatography/mass spectrometry (GC/MS) is the preferred confirmatory method.^{3,4,7}
- There is a possibility that technical or procedural errors, as well as other interfering substances in the urine specimen may cause erroneous results.
- Adulterants, such as bleach and/or alum, in urine specimens may produce erroneous results regardless of the analytical method used. If adulteration is suspected, the test should be repeated with another urine specimen.
- A Positive result does not indicate level or intoxication, administration route or concentration in urine.
- 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 the test.
- Test does not distinguish between drugs of abuse and certain medications.
- A positive test result may be obtained from certain foods or food supplements.

PERFORMANCE CHARACTERISTICS

Accuracy

A side-by-side comparison was conducted using the One Step Single Drug Test Card and commercially available drug rapid tests. Testing was performed on approximately 300 specimens per drug type previously collected from subjects presenting for Drug Screen Testing. Presumptive positive results were confirmed by GC/MS. The following compounds were quantified by GC/MS and contributed to the total amount of drugs found in presumptive positive urine samples tested.

| Test | Compounds Contributed to the Totals of GC/MS |
|------|--|
| AMP | Amphetamine |
| BAR | Secobarbital, Butalbital, Phenobarbital, Pentobarbital |
| BZO | Oxazepam, Nordiazepam, a-OH-Alprazolam, Desalkylflurazepam |
| COC | Benzoyllecgonine |
| THC | 11-nor 9-carboxy-delta-9-tetrahydrocannabinol |
| MTD | Methadone |
| mAMP | Methamphetamine |
| MDMA | D,L Methylenedioxymethamphetamine, Methylenedioxyamphetamine |
| OPI | Morphine, Codeine |

| | |
|-----|---|
| PCP | Phencyclidine |
| TCA | Amitriptyline, Desipramine, Doxepin, Desmethyldoxepin, Nortriptyline, |

The following results are tabulated from these clinical studies:

| %Agreement with Commercial Kit | | | | | | |
|--------------------------------|------|------|-----|------|------|------|
| | AMP | BAR | BZO | COC | THC | MTD |
| Positive Agreement | 97% | >99% | 90% | 95% | 98% | 99% |
| Negative Agreement | 100% | >99% | 97% | >99% | 100% | >99% |
| Total Results | 98% | 99% | 94% | 98% | 99% | >99% |

| | mAMP | MDMA | MOP | OPI | PCP | TCA* |
|--------------------|------|------|------|------|------|------|
| Positive Agreement | 98% | 100% | 100% | >99% | 98% | 95% |
| Negative Agreement | 100% | 99% | 100% | >99% | 100% | >99% |
| Total Results | 99% | 99% | 100% | >99% | 99% | 99% |

| %Agreement with GC/MS | | | | | | |
|-----------------------|-----|------|-----|------|-----|------|
| | AMP | BAR | BZO | COC | THC | MTD |
| Positive Agreement | 97% | >99% | 96% | 96% | 97% | 99% |
| Negative Agreement | 95% | >99% | 96% | >90% | 88% | >94% |
| Total Results | 96% | 99% | 96% | 93% | 91% | >96% |

| | mAMP | MDMA | MOP | OPI | PCP | TCA* |
|--------------------|------|------|------|------|------|------|
| Positive Agreement | 99% | 96% | 100% | >99% | 100% | >99% |
| Negative Agreement | 94% | 98% | 94% | >90% | 97% | 89% |
| Total Results | 96% | 97% | 97% | >95% | 98% | 91% |

Forty (40) clinical samples for each drug were run using each of The One Step Single Drug Test Strip by an untrained operator at a Professional Point of Care site. Based on GC/MS data, the operator obtained statistically similar Positive Agreement, Negative Agreement and Overall Agreement rates as trained laboratory personnel.

*Note: TCA was based on HPLC data.

Precision

A study was conducted at three physician offices by untrained operators using three different lots of product to demonstrate the within run, between run and between operator precision. An identical panel of coded specimens, containing drugs at the concentration of $\pm 50\%$ and $\pm 25\%$ cut-off level, was labeled, blinded and tested at each site. The results are given below:

AMPHETAMINE (AMP)

| Amphetamine Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|---------------------------|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 500 | 15 | 15 | 0 | 15 | 0 | 14 | 1 |
| 750 | 15 | 13 | 2 | 11 | 4 | 11 | 4 |
| 1,250 | 15 | 6 | 9 | 4 | 11 | 4 | 11 |
| 1,500 | 15 | 2 | 13 | 1 | 14 | 1 | 14 |

COCAINE (COC)

| Benzoyllecgonine Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|--------------------------------|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 14* | 0 | 15 | 0 | 15 | 0 |
| 150 | 15 | 14 | 1 | 15 | 0 | 14 | 1 |
| 225 | 15 | 4 | 11 | 5 | 10 | 8 | 7 |
| 375 | 15 | 0 | 15 | 0 | 15 | 0 | 15 |
| 450 | 15 | 0 | 15 | 0 | 15 | 1 | 14 |

*Note: One invalid result was obtained

BARBITURATES (BAR)

| Secobarbital Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|----------------------------|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 150 | 15 | 13 | 2 | 15 | 0 | 15 | 0 |
| 225 | 15 | 5 | 10 | 7 | 8 | 10 | 5 |
| 375 | 15 | 2 | 13 | 5 | 10 | 5 | 10 |
| 450 | 15 | 0 | 15 | 1 | 14 | 1 | 14 |

BENZODIAZEPINES (BZO)

| Oxazepam Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|------------------------|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 150 | 15 | 14 | 1 | 14 | 1 | 15 | 0 |
| 225 | 15 | 11 | 4 | 14 | 1 | 14 | 1 |
| 375 | 15 | 0 | 15 | 1 | 14 | 3 | 12 |
| 450 | 15 | 0 | 15 | 0 | 15 | 0 | 15 |

MARIJUANA (THC)

| 11-nor- Δ^9 -THC-9-COOH Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|--|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 25 | 15 | 15 | 0 | 15 | 0 | 14 | 1 |
| 37.5 | 15 | 9 | 6 | 14 | 1 | 9 | 6 |
| 62.5 | 15 | 2 | 13 | 0 | 15 | 0 | 15 |
| 75 | 15 | 0 | 15 | 0 | 15 | 0 | 15 |

METHADONE (MTD)

| Methadone Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|-------------------------|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 150 | 15 | 12 | 3 | 15 | 0 | 15 | 0 |
| 225 | 15 | 8 | 7 | 14 | 1 | 15 | 0 |
| 375 | 15 | 0 | 15 | 0 | 15 | 1 | 14 |
| 450 | 15 | 1 | 14 | 0 | 15 | 0 | 15 |

METHAMPHETAMINE (mAMP)

| Methamphetamine Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|-------------------------------|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 500 | 15 | 15 | 0 | 14 | 1 | 13 | 2 |
| 750 | 15 | 11 | 4 | 10 | 5 | 10 | 5 |
| 1,250 | 15 | 8 | 7 | 4 | 11 | 6 | 9 |
| 1,500 | 15 | 1 | 14 | 1 | 14 | 0 | 15 |

METHYLENEDIOXYMETHAMPHETAMINE (MDMA)

| Methylenedioxymethamphetamine Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|---|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 250 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 375 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 625 | 15 | 6 | 9 | 4 | 11 | 7 | 8 |
| 750 | 15 | 0 | 15 | 0 | 15 | 0 | 15 |

OPIATE 300 (MOP 300 OR OPI 300)

| Morphine Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|------------------------|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 150 | 15 | 13 | 2 | 13 | 2 | 15 | 0 |
| 225 | 15 | 3 | 12 | 7 | 8 | 10 | 5 |
| 375 | 15 | 0 | 15 | 1 | 14 | 0 | 15 |
| 450 | 15 | 0 | 15 | 0 | 15 | 0 | 15 |

OPIATES (OPI 2000)

| Morphine Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|------------------------|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 1,000 | 15 | 15 | 0 | 15 | 0 | 14 | 1 |
| 1,500 | 15 | 13 | 2 | 11 | 4 | 7 | 8 |
| 2,500 | 15 | 4 | 11 | 1 | 14 | 2 | 13 |
| 3,000 | 15 | 0 | 15 | 0 | 15 | 2 | 13 |

PHENCYCLIDINE (PCP)

| Phencyclidine Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|-----------------------------|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 12.5 | 15 | 15 | 0 | 14 | 1 | 14 | 1 |
| 18.75 | 15 | 11 | 4 | 13 | 2 | 10 | 5 |
| 31.25 | 15 | 8 | 7 | 5 | 10 | 1 | 14 |
| 37.5 | 15 | 4 | 11 | 0 | 15 | 0 | 15 |

TRICYCLIC ANTIDEPRESSANT (TCA)

| Nortriptyline Conc. (ng/mL) | n per site | Site A | | Site B | | Site C | |
|-----------------------------|------------|--------|----|--------|----|--------|----|
| | | - | + | - | + | - | + |
| 0 | 15 | 15 | 0 | 15 | 0 | 15 | 0 |
| 500 | 15 | 15 | 0 | 14 | 0 | 15 | 0 |
| 750 | 15 | 14 | 1 | 11 | 4 | 14 | 1 |
| 1,250 | 15 | 8 | 7 | 2 | 13 | 6 | 9 |
| 1,500 | 15 | 1 | 14 | 0 | 15 | 1 | 14 |

Analytical Sensitivity

A drug-free urine pool was spiked with drugs at concentrations listed. The results are summarized below.

| Drug Concentration | n | AMP | | BAR | | BZO | | COC | |
|---------------------|----|-----|----|-----|----|-----|----|-----|----|
| | | - | + | - | + | - | + | - | + |
| 0% Cut-off | 30 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 0 |
| -50% Cut-off | 30 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 0 |
| -25% Cut-off | 30 | 22 | 8 | 27 | 3 | 26 | 4 | 30 | 0 |
| Cut-off | 30 | 12 | 18 | 22 | 8 | 12 | 18 | 4 | 26 |
| +25% Cut-off | 30 | 2 | 28 | 7 | 23 | 3 | 27 | 0 | 30 |
| +50% Cut-off | 30 | 0 | 30 | 2 | 28 | 0 | 30 | 0 | 30 |

| Drug Concentration | n | THC | | MTD | | mAMP | | MDMA | |
|---------------------|----|-----|----|-----|----|------|----|------|----|
| | | - | + | - | + | - | + | - | + |
| 0% Cut-off | 30 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 0 |
| -50% Cut-off | 30 | 30 | 0 | 29 | 1 | 30 | 0 | 30 | 0 |
| -25% Cut-off | 30 | 12 | 18 | 24 | 6 | 30 | 0 | 26 | 4 |
| Cut-off | 30 | 1 | 29 | 21 | 9 | 18 | 12 | 17 | 13 |
| +25% Cut-off | 30 | 1 | 29 | 2 | 28 | 1 | 29 | 4 | 26 |
| +50% Cut-off | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 |

| Drug Concentration | OPI | PCP | TCA |
|--------------------|-----|-----|-----|
|--------------------|-----|-----|-----|

| Cut-off Range | n | - | + | - | + | - | + |
|---------------------|----|-------------------|----|----|----|----|----|
| | | 0% Cut-off | 30 | 30 | 0 | 30 | 0 |
| -50% Cut-off | 30 | 30 | 0 | 30 | 0 | 30 | 0 |
| -25% Cut-off | 30 | 30 | 0 | 19 | 11 | 22 | 8 |
| Cut-off | 30 | 13 | 17 | 16 | 14 | 12 | 18 |
| +25% Cut-off | 30 | 4 | 26 | 6 | 24 | 7 | 23 |
| +50% Cut-off | 30 | 0 | 30 | 0 | 30 | 0 | 30 |

Analytical Specificity

The following table lists the concentration of compounds (ng/mL) that are detected positive in urine by One Step Drug Screen Test Card at 5 minutes.

| AMPHETAMINE | ng/mL |
|-----------------------------------|--------|
| D-Amphetamine | 1,000 |
| D,L-Amphetamine sulfate | 3,000 |
| L-Amphetamine | 50,000 |
| D,L 3,4-Methylenedioxyamphetamine | 2,000 |
| Phentermine | 3,000 |
| BARBITURATES | |
| Secobarbital | 300 |
| Amobarbital | 300 |
| Alphenol | 150 |
| Aprobarbital | 200 |
| Butabarbital | 75 |
| Butalbital | 2,500 |
| Butethal | 100 |
| Cyclopentobarbital | 600 |
| Pentobarbital | 300 |
| Phenobarbital | 100 |
| BENZODIAZEPINES | |
| Oxazepam | 300 |
| Alprazolam | 196 |
| α -Hydroxyalprazolam | 1,262 |
| Bromazepam | 1,562 |
| Chlordiazepoxide | 1,562 |
| Chlordiazepoxide HCl | 781 |
| Clobazam | 98 |
| Clonazepam | 781 |
| Clorazepate dipotassium | 195 |
| Delorazepam | 1,562 |
| Desalkylflurazepam | 390 |
| Diazepam | 195 |
| Estazolam | 2,500 |
| Flunitrazepam | 390 |
| D,L Lorazepam | 1,562 |
| RS-Lorazepam glucuronide | 156 |
| Midazolam | 12,500 |
| Nitrazepam | 98 |
| Norchlordiazepoxide | 195 |
| Nordiazepam | 390 |
| Temazepam | 98 |
| Triazolam | 2,500 |
| COCAINE | |
| Benzoylcegonine | 300 |
| | ng/mL |

| | |
|--|---------|
| Cocaine HCl | 780 |
| Cocaethylene | 12,500 |
| Ecgonine HCl | 32,000 |
| MARIJUANA (THC) | |
| 11-nor- Δ^9 -THC-9 COOH | 50 |
| Cannabinol | 20,000 |
| 11-nor- Δ^8 -THC-9 COOH | 30 |
| Δ^8 -THC | 15,000 |
| Δ^9 -THC | 15,000 |
| METHADONE | |
| Methadone | 300 |
| Doxylamine | 50,000 |
| METHAMPHETAMINE | |
| D-Methamphetamine | 1,000 |
| ρ -Hydroxymethamphetamine | 30,000 |
| L-Methamphetamine | 8,000 |
| D,L 3,4-Methylenedioxyamphetamine | 2,000 |
| Mephentermine | 50,000 |
| METHYLENEDIOXYMETHAMPHETAMINE (MDMA) | |
| D,L-3,4-Methylenedioxyamphetamine HCl (MDMA) | 500 |
| 3,4-Methylenedioxyamphetamine HCl (MDA) | 3,000 |
| 3,4-Methylenedioxyethyl-amphetamine (MDE) | 300 |
| OPIATE 300 (MOP) | |
| Morphine | 300 |
| Codeine | 300 |
| Ethylmorphine | 6,250 |
| Hydrocodone | 50,000 |
| Hydromorphone | 3,125 |
| Levophanol | 1500 |
| 6-Monoacetylmorphine | 400 |
| Morphine 3- β -D-glucuronide | 1,000 |
| Norcodeine | 6,250 |
| Normorphone | 100,000 |
| Oxycodone | 30,000 |
| Oxymorphone | 100,000 |
| Procaine | 15,000 |
| Thebaine | 6,250 |
| OPIATES (2000) | |
| Morphine | 2,000 |
| Codeine | 2,000 |
| Ethylmorphine | 5,000 |
| Hydrocodone | 12,500 |
| Hydromorphone | 5,000 |
| Levophanol | 75,000 |
| 6-Monoacetylmorphine | 5,000 |
| Morphine 3- β -D-glucuronide | 2,000 |
| Norcodeine | 12,500 |
| Normorphone | 50,000 |
| Oxycodone | 25,000 |
| Oxymorphone | 25,000 |
| Procaine | 150,000 |
| Thebaine | 100,000 |
| PCP | |
| Phencyclidine | 25 |
| 4-Hydroxyphencyclidine | 12,500 |
| TCA | |
| Notriptyline | 1,000 |
| Nordoxepine | 1,000 |
| Trimipramine | 3,000 |
| Amitriptyline | 1,500 |
| Promazine | 1,500 |

| | |
|--------------|--------|
| Desipramine | 200 |
| Imipramine | 400 |
| Clomipramine | 12,500 |
| Doxepin | 2,000 |
| Maprotiline | 2,000 |
| Promethazine | 25,000 |

Effect of Urinary Specific Gravity

Fifteen (15) urine samples of normal, high, and low specific gravity ranges (1.000-1.037) were spiked with drugs at 50% below and 50% above cut-off levels respectively. The One Step Drug Screen Test Card was tested in duplicate using fifteen drug-free urine and spiked urine samples. The results demonstrate that varying ranges of urinary specific gravity does not affect the test results.

Effect of the Urinary pH

The pH of an aliquoted negative urine pool was adjusted to a pH range of 5 to 9 in 1 pH unit increments and spiked with drugs at 50% below and 50% above cut-off levels. The spiked, pH-adjusted urine was tested with One Step Drug Screen Test Card. The results demonstrate that varying ranges of pH does not interfere with the performance of the test.

Cross-Reactivity

A study was conducted to determine the cross-reactivity of the test with compounds in either drug-free urine or drug positive urine containing Cocaine, Barbiturates, Benzodiazepine, Amphetamine, Methamphetamine, Marijuana, Methadone, Methylenedioxyamphetamine, Opiate, Phencyclidine or Tricyclic antidepressant. The following compounds show no cross-reactivity when tested with One Step Drug Screen Test Card at a concentration of 100 μ g/mL.

Non Cross-Reacting Compounds

| | |
|------------------------|---|
| Acetaminophen | Doxylamine |
| Acetophenetidin | Hydrochlorothiazide |
| N-Acetylprocainamide | Hydrocortisone |
| Acetylsalicylic acid | O-Hydroxyhippuric acid |
| Aminopyrine | p-Hydroxyamphetamine |
| Amitriptyline | 3-Hydroxytyramine |
| Amoxicillin | Ibuprofen |
| Ampicillin | Imipramine |
| L-Ascorbic acid | Iproniazid |
| Apomorphine | D,L – Isoproterenol |
| Aspartame | Isoxsuprine |
| Atropine | Ketamine |
| Benzilic acid | Ketoprofen |
| Benzoic acid | Labetalol |
| Benzphetamine | Loperamide |
| Bilirubin | Maprotiline |
| D,L – Brompheniramine | Meperidine |
| Caffeine | Meprobamate |
| Cannabidiol | Methoxyphenamine |
| Chloralhydrate | Methyphenidate |
| | Nalidixic acid |
| Chloramphenicol | Naloxone |
| Chlorothiazide | Naltrexone |
| D,L – Chlorpheniramine | Naproxen |
| Chlorpromazine | Niacinamide |
| Chlorquine | Nifedipine |
| Cholesterol | Norethindrone |
| Clomipramine | D-Norpropoxyphene |
| Clonidine | Noscapine |
| Cortisone | DL-Octopamine |
| L Cotinine | Oxalic acid |
| Creatinine | Oxolinic acid |
| Deoxycorticosterone | Oxymetazoline |
| Dextromethorphan | Papaverine |
| Diclofenac | Penicillin-G |
| Diflunisal | Pentazocine hydrochloride |
| Digoxin | Perphenazine |
| Diphenhydramine | Phenelzine |
| Ecgonine methylester | |
| L - Ψ -Ephedrine | Trans-2-phenylcyclo-propylamine hydrochloride |

| | |
|---|---------------------------|
| β -Estradiol | L-Phenylephrine |
| Estrone-3-sulfate | β -Phenylethylamine |
| Ethyl-p-aminobenzoate | Phenylpropanolamine |
| [1R,2S] (-) Ephedrine | Prednisolone |
| (L) – Epinephrine | Prednisone |
| Erythromycin | Promazine |
| Fenoprofen | Promethazine |
| Furosemide | DL-Propranolol |
| Gentisic acid | D-Propoxyphene |
| Hemoglobin | D-Pseudoephedrine |
| Hydralazine | Quinacrine |
| Quinine | Quinidine |
| Ranitidine | DL-Tyrosine |
| Salicylic acid | Tolbutamide |
| Serotonin | Triamterene |
| Sulfamethazine | Trifluoperazine |
| Sulindac | Trimethoprim |
| Tetracycline | Trimipramine |
| Tetrahydrocortisone, 3-acetate | Tryptamine |
| Tetrahydrocortisone 3-(β -D-glucuronide) | DL-Tryptophan |
| Tetrahydrozoline | Tyramine |
| Thiamine | Uric acid |
| Thiordazine | Verapamil |
| | Zomepirac |

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