

First SignTM



---One-Step Drug of Abuse Test For professional in vitro diagnostic use only

ENGLISH

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

Amphetamine, Barbiturates, Benzodiazepines, Cocaine, Marijuana, Methamphetamine, Methylendioxyamphetamines, Morphine 300, Opiate 2000, Phencyclidine.

Intended use:

First SignTM Drug of Abuse Test is an easy to use one-step immunoassay intended for use in the qualitative analysis for multiple drugs of abuse and its metabolites in human urine. It should not be used without proper supervision and is not intended for sale to the general public. The test provides only preliminary screening test results; a more specific alternate chemical method must be used in order to confirm the analytical result. Gas chromatography / Mass spectrometry (GC/MS) is the preferred confirmatory method (1). Clinical considerations and professional judgment should be applied to any drug of abuse analysis, particularly when positive results are indicated (2,3).

Summary and explanation of the test:

First SignTM Drug of Abuse Test is an easy, fast, and visually read screening method without the need for instrumentation. The test system employs unique polyclonal antibodies to selectively identify multiple drugs of abuse in human urine samples with a high degree of sensitivity. First SignTM Drug of Abuse Test is a lateral flow chromatographic immunoassay for qualitative detection of following drugs.

Test	Cut off level (ng/ml)
Amphetamine(AMP)	1,000
Barbiturates(BAR)	300
Benzodiazepines(BZO)	300
Cocaine(COC)	300
Marijuana(THC)	50
Methamphetamine(METH)	1,000
Methylenedioxyamphetamines(MDMA)	500
Morphine(MOR) 300	300
Opiate(OP) 2000	2,000
Phencyclidine(PCP)	25

If performed under conditions that provide sufficient sensitivity, HPLC, GC and GC/MS are generally acceptable alternate methods of confirmation of the First SignTM Drug of Abuse Test (2-4). While confirmation techniques other than GC/MS may be adequate for some drugs of abuse, GC/MS is generally accepted as a rigorous confirmation technique for all drugs, since it provides the best level of confidence in the results.

Principle:

The First SignTM Drug of Abuse Test is a one-step membrane immuno-chromatographic test (6) based on antigen/antibody complexation and is used for the analysis of Drug of Abuse Test and its metabolite present in the test sample. The assay is based on the competition between the drug or drug metabolite in the sample and a drug conjugate immobilized on a porous membrane support for limited antibody sites on the colored microspheres. Test urine is delivered into a sample site located at one end of the porous membrane. When the drug is present in the urine test sample, the drug or drug metabolite competes for the limited antibody sites on the microspheres. When an adequate amount of drug is present attachment of the colored microspheres to the probe site on the membrane. Therefore, a positive urine sample will inhibit the formation of a precipitin line at the probe area. A reference or control line with a secondary antibody reaction is added to the membrane test to indicate that the test is viable. This control line should always be present before making any test interpretation. Normally, a negative urine sample will produce two colored lines (the formation of a visible precipitin at the test zone in addition to the control line), and a positive urine sample will show only one line (the control line).

REAGENTS:

One Drug of Abuse Test device per foil pouch

Ingredients:

Test device is consist of colloidal gold coated with mouse anti Drug antibody, Coat anti mouse antibody, drug -BSA conjugate,

WARNING:

For In Vitro Diagnostic Use Only

Avoid cross-contamination of urine samples by using a new urine specimen cup and dropper for each urine sample.

Do not use if pouch is damaged and torn.

Do not use the assay beyond the expiration date as indicated on the pouch.

Read direction for use carefully before performing. Pay attention to the position of the C and T line.

Do not touch the membrane located within the windows.

Open sealed pouch containing the test immediately prior to use. Prolonged exposure to ambient humidity will cause product deterioration.

Do not reuse the test device. Discard it in the dustbin after single use.
Urine specimens and all materials coming in contact with them should be handled and disposed of as if infectious and transmitting infection. Avoid contact with skin.

Storage and Stability:

Store test at 4-30°C (room temperature). The test is stable until the date imprinted on the pouch label.

Materials provided:

Each First SignTM Drug of Abuse Test is individually sealed in a foil pouch.

Materials provided:

1. One First SignTM Morphine Test cassette

2. Desiccant

3. Urine dropper

Materials required but not provided

Specimen collection container

Timer

ASSAY PROCEDURE:

1. SPECIMEN collection and HANDLING:

The First SignTM Drug of Abuse Test is formulated for use with urine specimens. Fresh Urine specimens should be collected, which do not require any special pretreatment, such that testing may be performed as soon as possible, preferably during the same day as specimen collection. The sample should be free from gross debris. Samples taking out from a refrigerated storage must be allowed to warm up to room temperature before testing. Allow at least 30 minutes when the sample was first taken out from a refrigerated storage at 2-8 degree, give longer time if the sample needs to be thawed out first from frozen storage.

2. Test procedure:

Bring the pouch to room temperature before opening it. Remove the test device from the foil pouch

Remove the cap to expose the absorbent tip

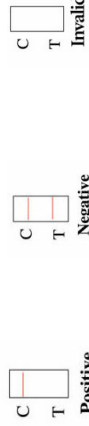
Hold the dipcard by the thumb grip with the exposed absorbent tip pointing downward. Immerse the test at least 15 seconds in the urine. Do not pass the arrows on the dipcard when immersing the test, see illustration below.

Lay the test device down on a flat surface with the windows on top while you wait for the test result. Read the result in one to five minutes

DO NOT INTERPRET RESULT AFTER 10 MINUTES.

Discard the test device after single use in an appropriate place.

3. Interpretation of the results



Positive: One pink-rose band appears in the control zone and no band appears in the test zone. A positive result indicates the drug concentration in the urine specimen exceeds the designed cut-off for that specific drug.

Negative: Two pink-rose color bands appear, one in the control region and one in the test region. A positive result indicates the drug concentration in the urine specimen below the designed cut-off level for that specific drug.

Invalid: If there are no distinct color bands visible in both the test zone and the control zone or if there is a visible band in the test zone but not in the control zone, then the test is invalid. In this instance, retesting of the specimen is recommended.

QUALITY CONTROL:

Build in Quality Control Features:

After dispensing the specimen, these colored bands migrate along membrane at the leading edge of the dye conjugate and are "removed" from the test device completely.

A pink-rose 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.

Limitations of the procedure:

First SignTM Drug of Abuse Test 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.
A positive result indicates presence of the drug or its metabolites but does not indicate level of intoxication, administration route or concentration in urine.

There is the possibility that other substances and/or factors not listed (e.g. technical or procedural errors) may interfere with the test and cause erroneous result. See SPECIFICITY.

A Negative result may not 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.

Urine samples should not exhibit a strong positive test for protein since either heavy proteinuria or hematuria may adversely affect the performance of the test.

PERFORMANCE CHARACTERISTICS:

ACCURACY:

A side-by-side comparison was conducted using the First Sign™ Drug of Abuse Test and another commercially available Acon's Multi-Drug rapid test. All were conducted on clinic site by using the GC/MS to confirm 120 samples among 60 normal urine samples and 60 positive specimens.

%Agreement with commercial kit

Specimen	AMP	BAR	BZO	COC	THC	METH	MDMA	MOR 300	OPI 2000	PCP
Positive	98%	>99%	98%	98%	98%	98%	98%	98%	98%	98%
Negative	100%	98%	100%	100%	100%	100%	100%	100%	100%	100%
Total	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%

%Agreement with GC/MS

Specimen	AMP	BAR	BZO	COC	THC	METH	MDMA	MOR 300	OPI 2000	PCP
Positive	95%	>96%	95%	95%	95%	95%	95%	95%	95%	95%
Negative	>99%	>98%	>99%	>99%	>99%	>99%	>99%	>99%	>99%	>99%
Total	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%	97.5%

ANALYTICAL SENSITIVITY & DIAGNOSTIC SENSITIVITY:

First Sign™ Drug of Abuse Test is a rapid test used in qualitative analysis for the abuse drug or its metabolites, at the level as cut-off or above in human urine. The analytical sensitivity and diagnostic sensitivity are summarized below.

Drug Conc (Cut-off range)	n	AMP	BAR	BZO	COC	THC	MDMA	MOR300	OPI2000	PCP
0% Cut-off	10	0	0	0	0	0	0	0	0	0
-50% Cut-off	10	0	0	0	0	0	0	0	0	0
-25% Cut-off	10	0	0	0	0	0	0	0	0	0
Cut-off	10	0	0	0	0	0	0	0	0	0
+25% Cut-off	10	0	0	0	0	0	0	0	0	0
+50% Cut-off	10	0	0	0	0	0	0	0	0	0

Drug Conc (Cut-off range)	n	METH	MDMA	MOR300	OPI2000	PCP
0% Cut-off	10	0	0	0	0	0
-50% Cut-off	10	0	0	0	0	0
-25% Cut-off	10	0	0	0	0	0
Cut-off	10	0	0	0	0	0
+25% Cut-off	10	0	0	0	0	0
+50% Cut-off	10	0	0	0	0	0

SPECIFICITY:

The following table lists compound are detected in urine by the First Sign™ Drug of Abuse Test within 5 minutes. Urine samples with pH between 4.5 to 8.0 showed no interference in either negative or positive test results.

Table 1: Cross-reactive substance (compound detected):

AMPHETAMINE	1000ng/ml	METHYLENEDIOXYMETHAMPHETAMINE	500ng/ml
D-amphetamine	5mcg/ml	MDMA	MORPHINE 300
DL-Amphetamine	1000ng/ml	Codeine	300ng/ml
(+)-methamphetamine	100ug/ml	Hydromorphone	300ng/ml
MDMA	100ug/ml	Oxycodone	100mcg/ml
Tyramine	100ug/ml	Morphine Sulfate	300ng/ml
BARBITURATES		Morphine-3-b-D-glucuronide	500ng/ml
Alphenol	150ng/ml	Methadone	500 ng/ml
Amobarbital	300ng/ml	Nalorphine	100mcg/ml
Apobarbital	200ng/ml	Heroin	300ng/ml
Butabarbital	75ng/ml	Ethylmorphine	300ng/ml
Butalbital	2,500ng/ml	Naloxone	100mcg/ml
Butethal	100ng/ml	Meperidine	30mcg/ml
Cyclopentobarbital	600ng/ml	Fentanyl	100mcg/ml
Pentobarbital	300ng/ml	Thebaine	10mcg/ml
Secobarbital	300ng/ml		
BENZODIAZEPINES			
a-Hydroxylprazolam	1,280ng/ml		
Alprazolam	200ng/ml		
Bromazepam	1,560ng/ml		

Chlorazepoxide	1,565ng/ml		
Chlorazepoxide HCl	780ng/ml	METHAMPHETAMINE	
Clobazam	100ng/ml	D-amphetamine	1000ng/ml
Clonazepam	785ng/ml	(+)-methamphetamine	1000ng/ml
Clorazepate Dipotassium	195ng/ml	MDA	100mcg/ml
Delorazepam	1,560ng/ml	MDMA	5mcg/ml
Desalkylflurazepam	390ng/ml	Tyramine	100mcg/ml
Diazepam	195ng/ml	OPIATE 2000	
Estazolam	2,500ng/ml	Codeine	2,000ng/ml
Flunitrazepam	385ng/ml	Hydromorphone	5,000ng/ml
(±) Lorazepam	1,560ng/ml	Oxycodone	negative at 100,000ng/ml
RS-Lorazepam glucuronide	160ng/ml	Morphine Sulfate	2,000ng/ml
Midazolam	12,500ng/ml	Morphine-3-b-D-glucuronide	2,000ng/ml
Nitrazepam	95ng/ml	Morphine-6-b-D-glucuronide	2,000ng/ml
Norchlorazepoxide	200ng/ml	Methadone	negative at 100,000ng/ml
Nordiazepam	390ng/ml	Nalorphine	negative at 100,000ng/ml
Oxazepam	300ng/ml	Heroin	2,000ng/ml
Temazepam	100ng/ml	Ethylmorphine	5,000ng/ml
Triazolam	2,500ng/ml	Meperidine	5,000,000ng/ml
COCAINE		PHENCYCLIDINE	
Cocaine	10ng/ml	D-amphetamine	1000ng/ml
Benzoylcocaine	300ng/ml	(+)-Phencyclidine	1000ng/ml
MARIJUANA		MDA	100mcg/ml
11-nor-Δ ⁹ -Tetrahydrocannabinol	50 mcg/ml	MDMA	5mcg/ml
-9-carboxylic acid			
11-nor-Δ ⁸ -Tetrahydrocannabinol	50 mcg/ml	Tyramine	100mcg/ml
-9-carboxylic acid			
Δ ⁸ -Tetrahydrocannabinol	7.5 mcg/ml		
Δ ⁹ -Tetrahydrocannabinol	10 mcg/ml		
Cannabidiol	50 mcg/ml		
Cannabidiol	100 mcg/ml		

Table 1: Compounds that do not interfere with the First Sign™ Drug of Abuse Test at concentration of 100ug/ml:

acetaldehyde	creatine	ofloxacin
acetaminophen	desipramine	oxalic acid
acetazolamide	dextromethorphan	prednisone
acetone	digoxin	prochlorperazine
albumin	diphenhydramine	promethazine
ammonium	dipyridamole	pseudoephedrine
amphotericin B	doxycycline	quinidine
ampicillin	erythromycin	ranitidine
amriptyline	estrone	riboflavin
apomorphine	ethanol	salicylic acid
ascorbic acid	ethylene glycol	sodium chloride
beclomethasone	epinephrine	sulfamethoxazole
benzocaine	ferrous sulfate	sulindac
benzoic acid	furosemide	tetracycline
bilirubin	glucose	theophylline
bupirone	haloperidol	thiamine
caffeine	hemoglobin	thioridazine
carbamazepine	hydrocortisone	tobutamide
cefactor	hydroxycarbamide	trazodone
chloramphenicol	hydroxyzine	trimethoprim
chloridiazepoxide	ibuprofen	urea
chloroquine	indomethacin	uric acid
chlorothiazide	lidocaine	
chlorpheniramine	lisinopril	
chlorpromazine	loperamide	
chlorpropamide	LSD	
cholesterol	metronidazole	
clindamycin	niacinamide	
clonidine	nicotine	
clozapine	nifedipine	
colchicine	nifurafantin	
cortisone	norriptyline	

