



ADVANCED QUALITY™ ONE STEP Barbiturates (BAR) TEST

(Urine)

FOR *IN VITRO* DIAGNOSTIC USE ONLY

INTENDED USE

THE ADVANCED QUALITY™ ONE STEP BARBITURATES TEST IS A RAPID, IMMUNOCHROMATOGRAPHIC ASSAY FOR THE DETECTION OF BARBITURATES IN HUMAN URINE. THE TEST IS USED TO SCREEN URINE FOR THE PRESENCE OF BARBITURATES AT A CUTOFF CONCENTRATION OF 300NG/ML. THE TEST IS INTENDED FOR USE BY HEALTHCARE PROFESSIONALS ONLY.

This test 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 spectrophotometry (GC/MS) is the preferred confirmatory method. Clinical considerations and professional judgment should be applied to any drug of abuse test result, particularly when preliminary positive results are indicated.

SUMMARY AND EXPLANATION OF THE TEST

Barbiturates are a group of prescription drugs which are frequently abused. Acute higher doses induces exhilaration, sedation and respiratory depression. More acute responses produce respiratory collapse and coma. Barbiturates are excreted in the urine in unchanged forms, hydroxylated derivatives, carboxylated derivatives, and glucuronide conjugates. The presence of Barbiturates in the urine indicates Barbiturates use in the past 24 to 48 hours. Urinary concentrations are dependent on the time of sample collection and frequency of drug use.

The Advanced Quality One Step Barbiturates Test detects Barbiturates in urine at an average cutoff concentration of 300 ng/ml and greater as recommended by SAMSHA(NIDA).

The test is a qualitative, visual screening immunoassay. The method employs unique antibodies to selectively identify the drug in the test urine with a high degree of sensitivity and specificity.

PRINCIPLE OF THE PROCEDURE

The test device consists of a chromatographic absorbent device in which the drug or drug metabolites in the sample compete with a drug conjugate immobilized on a porous membrane support for the limited antibody sites. As the test sample flows up through the absorbent device, the labeled antibody-dye conjugate binds to the free drug in the specimen forming an antibody:antigen complex. This complex competes with immobilized antigen conjugate in the positive reaction zone and will not produce a magenta color band when the drug is above the detection level suggested for the immunoassay method. Unbound dye conjugate binds to the reagent in the negative control zone, producing a magenta color band, demonstrating that the reagents and device are functioning correctly.

A **negative** specimen produces two (2) distinct color bands, one in the test area and one in the control region.

A **positive** specimen produces only one (1) color band in the control region.

REAGENTS AND MATERIALS SUPPLIED

FOR STRIP TEST

1. Test strips individually foil pouched with a desiccant
2. Urine cups
3. Package insert

FOR CARD TEST

1. Test cards individually foil pouched with a desiccant
2. Plastic dropper

3. Package insert

MATERIALS REQUIRED BUT NOT PROVIDED

1. Urine collection containers (for card test)
2. Clock or Timer
3. Positive and negative urine controls available from commercial distributors.

WARNINGS AND PRECAUTIONS

1. For *in vitro* diagnostic use only.
2. Avoid cross contamination of urine samples by using a new urine specimen cup for each sample.
3. Do not use the kit beyond the expiration date printed on the outside of the foil pouch.
4. Do not open the foil pouch until urine specimen is collected and ready to be tested.
5. Urine specimens may be infectious. Handle and dispose of all used specimens and devices in an approved biohazard container.

STORAGE AND STABILITY

The test device can be stored under refrigeration and at room temperature (2 - 30° C) and will be stable until the expiration date. **Do not** open foil pouch until ready to test.

SAMPLE COLLECTION AND PREPARATION

10 ml of urine must be collected in a clean, dry, plastic or glass container, that does not contain preservative. Some plastics may adsorb drugs. If not tested immediately, urine specimens may be stored refrigerated at 2-8°C for up to 7 days and then frozen(-20° C or colder) prior to assaying. Refrigerated or frozen samples must be warmed to room temperature and gently mixed before testing. Urine samples exhibiting visible precipitates or turbidity should be centrifuged or allowed to settle so a clear aliquot may be sampled for this assay. Collection of samples may require mandatory procedures and custody and control records. Poppy seed ingestion has been associated with positive test results in some samples.

ASSAY PROCEDURES

FOR STRIP TEST:

1. Bring all materials and specimens to room temperature.
2. Remove test strip from the sealed foil pouch.
3. Dip the test strip into the urine sample with the arrows pointing toward the specimen.
4. The urine level should reach the maximum line marked on the strip, but must not exceed the maximum line.
5. Hold the strip in the urine until a reddish color appears at the lower edge of the test membrane (approximately 10 seconds).
6. Withdraw the strip and place it face up on a clean, dry surface.
7. Read the result between 3 - 8 minutes after adding the sample.

FOR CARD TEST:

1. Bring all materials and specimens to room temperature.
2. Remove test card from the sealed foil pouch.
3. Place the test card on a flat dry surface.
4. Using the provided plastic dropper, dispense 3 drops of urine sample to the sample well of the test card. Start timing.
5. Read result between 3 - 8 minutes after adding the sample.

READING THE TEST RESULTS

Read test results between 3 - 8 minutes.

Do not interpret results after 8 minutes.

NEGATIVE Two (2) pink/purple bands form. In addition to the control band, a pink/purple band also appears in the test region.

Note: This immunoassay is a screening test. A negative result indicates the drug level is below the detection sensitivity. It is important to understand that concentrations of the drug below cut off may cause a faint "ghost line" to form in the test region. This "ghost line" should be considered a negative result.

POSITIVE One (1) pink/purple band appears in the control region. No band is found in the test region. This is an indication that the drug level is above the detection sensitivity level.

INVALID If there is no pink/purple band in the control area of the strip, the test result is invalid. Retest the sample using a new device.

Clinical consideration and professional judgment should be applied to any drug of abuse test result, particularly when preliminary results are positive. Positive results should be confirmed by an alternate method such as GC/MS.

QUALITY CONTROL

1. Each test device has a control band to indicate that the sample volume and migration is adequate, and that the colloidal gold is dissolving as expected. An invalid result must be repeated using a new test device.
2. Positive and negative, drug free urine controls can be used to validate reagent performance and establish test reliability. Commercial drug urine controls are available, but not provided with this test. NIDA recommended guidelines for drugs of abuse screening indicate controls should contain the drug at a level at least 20% above the NIDA cutoff value. If control values do not fall within the established limits, assay results are invalid.

EXPECTED RESULTS

The Advanced Quality Barbiturates Test identifies Barbiturates in human urine at a cutoff concentration of 300ng/mL. The concentration of the drug can not be determined using this test. The test is intended to screen urine to separate a negative result from a presumptive positive result. All positive results must be confirmed using an alternate method, preferably GC/MS.

PERFORMANCE CHARACTERISTICS

Sensitivity

The Advanced Quality One Step Barbiturates Test detects the following group of the barbiturates, in human urine.

Amobarbital	300 ng/ml
Alphenol	150 ng/ml
Aprobarbital	37.5 ng/ml
Barbital	300 ng/ml
Butabarbital	300 ng/ml
Butalbital	75 ng/ml
Phenobarbital	300 ng/ml
Phentobarbital	300 ng/ml
Secobarbital	5 ng/ml
5,5'-diphenylhydantoin	300 ng/ml

Specificity and Interference

The following compounds gave negative results at concentrations of 100 ng/ml (unless otherwise noted):

acetamidophenol	imipramine
acetylsalicylic acid	isoproterenol
amikacin	ketamine
amitriptyline	lidocaine
d,l-amphetamine	methadone
arterenol	methamphetamine
aspartame	morphine
atropine	naloxone
sulfate	neomycin
benzoylecgonine	niacinamide
caffeine	11-nor-8-THC-9-COOH (10 ng/ml)
camphor	11-nor-9-THC-COOH (10 ng/ml)

chloroquine	oxazepam
chlorpheniramine	perphenazine
cocaine	phencyclidine
cortisone	phenylethylamine-a
deoxyepinephrine	phenylpropanolamine
dextromethorphan	promethazine
digitoxin	pseudoephedrine
digoxin	rantidine
epinephrine (±)	salicylic acid
ephedrine	tetracycline
gentisic acid	tetrahydrozoline
glucose	theophylline
histamine	thioridazine
guaiaicol glyceryl ether	trifluoperazine
homatropine	

LIMITATIONS OF THE TEST

1. This product is designed to be used for the detection of Barbiturates in human urine only.
2. Although the Advanced Quality One Step Barbiturates Test is very accurate in detecting Barbiturates in urine, there is a possibility of false results due to the presence of interfering substances.
3. The test is a qualitative screening assay and is not suggested for determining the quantitative Barbiturates level of urine.
4. Adulterants, such as bleach or other strong oxidizing agents, when added to urine specimens, may produce erroneous test results regardless of the analysis method used. If adulteration is suspected, obtain another urine specimen.
5. There is the possibility that other substances and/or factors not listed may interfere with the test and cause false results, e.g. technical or procedural errors.
6. A positive result indicates the presence of Barbiturates in urine. This result does not indicate the level of intoxication nor is it intended to monitor drug levels.
7. Results should be confirmed using an alternate method. GC/MS is the preferred confirmatory method.

BIBLIOGRAPHY

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3. R.C.Baselt, Disposition of Toxic Drugs and Chemicals in Man, 2nd ed., 1982, p. 488