274 mm x 218mm

CE Insight | BAR

Rapid Competitive Immunochromatographic Assay for the detection of Barbiturates in human urine

DEVICE

DEVICE

INTENDED USE

INSIGHT-BAR is a rapid, qualitative, immunochromatographic assay for the detection of barbiturates in human urine. This test is used to screen the barbiturates intoxication. For healthcare professional use only.

SUMMARY

Barbiturates such as pentobarbitals and phenobarbitals, are central nervous system (CNS) depressants, these were used as anxiolytics, hypnotics and anti convulsion agents. Barbiturates may be taken intravenously or even orally. The use of barbiturates produce a wide spectrum of effects; like slowing of speech, fatigue and anesthesia. Abuse of barbiturates can lead to mental disorder, impaired motor coordination, respiratory failure, coma and even death. Chronic use of barbiturates can lead to physical dependence, the most commonly abused barbiturates are amobarbital, pentobarbital and secobarbital. Short - acting barbiturates like secobarbital have a half life of 29 to 34 hours and will generally be excreted in urine as metabolites, while long acting barbitals like phenobarbital have a half - life of 24 to 140 hours and will primarily appear unchanged.
INSIGHT-BAR detects the presence of barbiturates in human urine specimens, qualitatively, at concentrations as low as 300 ng/ml.

PRINCIPLE

INSIGHT-BAR is based on the principle of agglutination of antibodies/ antisera with respective antigen in a competitive immuno-chromatography format along with use of nano gold particles as agglutination. The conjugate pad is impregnated with two components - Agglutinating sera for Barbiturate conjugated to colloidal gold and rabbit globulin conjugated to colloidal gold. As the test specimen flows through the membrane assembly of the device, the Agglutinating sera for Barbiturate - colloidal gold conjugate complexes with the Barbiturate present in the test specimen and travels on the membrane due to capillary action along with the rabbit globulin-colloidal gold conjugate. This complex moves further on the membrane to the test region (T) where it is not immobilized by Barbiturate conjugated to BSA coated on the membrane, therefore forming no band. The absence of this band in the test region (T) indicates a positive result.
In absence of Barbiturate in the test specimen, the Agglutinating sera for Barbiturate-colloidal gold conjugate and along with rabbit globulin-colloidal gold conjugate moves further on the membrane to the test region (T) where it is immobilized by the Barbiturate conjugated to BSA coated on the membrane, forming a pink coloured band indicating a negative result.
The rabbit globulin colloidal gold conjugate and unbound complex if any move further on the membrane and are subsequently immobilized by the Agglutinating sera for rabbit globulin coated on the membrane at the control region (C) forming a pink coloured band. This control band acts as a procedural control and serves to validate the test results

REAGENTS AND MATERIALS SUPPLIED

A. Each INSIGHT-BAR kit contains individual pouches each containing a
   1. DEVICE : Membrane test assembly impregnated with colloidal gold conjugated to the Agglutinating sera for Barbiturate and rabbit globulin, Barbiturate conjugated to BSA and Agglutinating sera for rabbit globulin at the respective regions.
   2. PIPETTE : Sample applicator.
   3. Desiccant pouch.

B. Package insert.

REF	10806010	10806050
Σ	10	50

OPTIONAL MATERIAL REQUIRED

Variable volume precision micropipettes, stopwatch.

STORAGE AND STABILITY

The sealed pouches in the test kit and the kit components may be stored between 4 - 30°C till the duration of the shelf life as indicated on the pouch/carton. DO NOT FREEZE.

NOTE

1. For in vitro diagnostic and professional use only. NOT FOR MEDICINAL USE.
2. Do not use beyond expiry date.
3. Read the instructions carefully before performing the test.

4. Handle all specimen as if potentially infectious.
5. Follow standard biosafety guidelines for handling and disposal of potentially infectious material.
6. If desiccant colour at the point of opening the pouch has turned from blue to pink or colourless, another test device must be run.
7. Contact with the contents of desiccant pouch containing, among other substances, cobalt chloride (CAS# 7646-79-9) should be kept to a minimum. Inhalation / swallowing may cause harm.

SPECIMEN COLLECTION AND PREPARATION

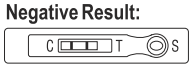
1. INSIGHT-BAR uses human urine as specimen.
2. No special preparation of the patient is necessary prior to specimen collection by approved techniques.
3. A clean dry plastic or glass container may be used for specimen collection.
4. Though fresh specimen is preferable, in case of delay in testing, it may be stored at 2-8°C for maximum up to 24 hours.
5. Refrigerated specimens must be brought to room temperature prior to testing.
6. Repeated freezing and thawing of the specimen should be avoided.
7. Specimen containing precipitates or particulate matter must be centrifuged and the clear supernatant only used for testing.

TESTING PROCEDURE

1. Bring the kit components of INSIGHT-BAR device to room temperature before testing.
2. Open a foil pouch by tearing along the "notch".
3. Remove the testing device and the sample applicator.
4. Check the colour of the desiccant pouch. It should be blue. If the desiccant has turned colourless or pink, discard the test device and use another device. *Once opened, the device must be used immediately.*
5. Label the device with specimen identity.
6. Place the testing device on a flat horizontal surface.
7. Holding the sample applicator vertically, carefully dispense exactly two drops of the test specimen into the specimen port (S). Alternatively, using a micropipette, carefully dispense exactly 50 µl of test specimen into the specimen port (S).
8. Start the stopwatch. Read the results at the end of 5 minutes. Do not interpret the results beyond 8 minutes.

INTERPRETATION OF RESULTS

Negative Result:

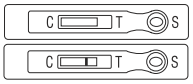


Two pink coloured bands appear at the control region (C) and test region (T). This indicates absence of barbiturates in the specimen.

Positive Result:

One pink coloured band appears at the control region © This indicates that the specimen contains detectable amount of barbiturates.

Invalid Result:



The test result is invalid if no band appears either at the control region (C) or test region (T). In such cases, verify the test procedure and repeat the test with a INSIGHT-BAR device.

Important: A very faint line on the test region indicates that the barbiturates in the sample is near the cut-off level for the test. These samples should be re-tested or confirmed with a more specific method before a positive determination is made.

REMARKS

(1) The deliberate slow reaction kinetics of INSIGHT BAR is designed to maximize and enhance reaction time between sample capture and tracer elements to improve test sensitivity. (2) Most positive results develop within 5 minutes. However, certain samples may take a longer time to flow. Therefore, negatives should be confirmed only at 8 minutes. Do not interpret the results beyond 8 minutes. (3) As with all diagnostic tests, a definitive clinical diagnosis should not be based on the result of a single test, but should only be made by the physician after all clinical and laboratory findings have been evaluated. (4) The assay is designed for use with human urine only. (5) A preliminary positive result indicates only the presence of barbiturates and does not indicate or measure intoxication. (6) There is a possibility that technical/or procedural errors as well as other substances or factors not listed may interfere with the test and cause false results. See specificity section that will produce positive results, or that do not interfere with the test performance. (7) If adulteration is suspected, the test should be repeated with a new sample. (8) Certain over the counter or prescription medications (or certain foods) may cause false results. (9) The length of time following drug use for which a positive result may occur is dependent upon several factors, including the frequency and amount of drug, metabolic rate, excretion rate, drug half life, the user's age, weight, activity and diet. (10) **This assay provides only a preliminary analytical test result. A more specific alternative chemical method must be used in order to obtain a confirmed analytical result. Gas**

chromatography/ mass spectrometry (GC/MS) has been established as the preferred confirmatory method by the Substance Abuse Mental Health Services Administration (SAMHSA). Clinical consideration and professional judgment should be applied to any drug of abuse test result, particularly when preliminary positive results are indicated.

PERFORMANCE CHARACTERISTICS

1. **Sensitivity** : INSIGHT-BAR detects barbiturates at concentrations equal to or greater than 300 ng/ml.
2. **Specificity** : Interference of substances that may be present in urine specimens, as well as effect of sample pH and specific gravity was also studied.
   a. Cross-reactivity of non barbiturate related compounds at concentrations much higher than normally found in the urine of people using or abusing them were tested using assay devices.
   b. No cross-reactivity was detected with the substances listed in table I. Table II lists barbiturate related substances and concentrations that produced results approximately equivalent to the cut-off level for barbiturates.

Table I: The following compounds were found not to cross-react when tested at concentrations up to 100µg/ml.

Acetaminophen	Benzoylecgonine
Acetone	Bilirubin
Albumin	(+) - Bromopheniramine
Amitrityline	Caffeine
D - Amphetamines	Chloroquine
L - Amphetamines	(+/-) - Chlorpheniramine
Ampicillin	Chlorpromazine
Aspartame	Cocaine
Aspirin	Codeine
Atropine	Creatine
Benzocaine	(-)-Desoxyephedrine
Dextromethorphan	Natoxone
Diazepam	Naltrexone
4 - Dimethylaminoantipyrine	(+/-) - Naproxen
Dopamine	(+/-) - Norphedrine
Doxylamine	Notriptyline
Ecgonine	Oxalic Acid
Ecgonine methyl ester	Oxazepam
(+/-) Epinephrine	Oxycodone
(+)- Epinephrine	Penicillin - G
Erythromycin	Pentermine
Ethanol	Phencyclidine
Furosemide	Pheniramine
Glucose	Phenothiazine
Guaiacol Glyceryl Ether	L - Phenylephrine
Hemoglobin	α- Phenylethylamine
Hydrocodone	Procaine
Hydromorphone	Promethazine
Imipramine	d- Propoxyphene
(+/-) - Isoproterenol	Quinidine
Lidocaine	Ranitidine
Meperidine	Sodium Chloride
Methadone	Sulindac
Methamphetamine	Thioridazine
Methaqualone	Trifluoperazine
(1R,2S)-(-)-N-Methyl - Ephedrine	Trimethobenzamide
Methylphenidate	Tyramine

Morphine	Vitamin C
11 nor Δ 9 tetrahydrocannabinol 9 -carboxylic acid	

Table II:
Concentration of barbiturate related compounds showing a positive response approximately equivalent to the barbiturate cut-off set for the test.

Compound	Concentration (ng/ml)
Allobarbital	1000
Alphenal	300
Amobarbital	1000
Aprobarbital	300
Barbital	300
Butabarbital	300
Butalbital	2000
Butethal	300
Pentobarbital	300
Phenobarbital	300
Secobarbital	300

WARRANTY
This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

BIBLIOGRAPHY
(1). www. drug detection. net/drug. html (2). Klabunde R.E., Cardiovascular Pharmacology Concepts; Beta Adrenoceptor Antagonists (Beta Blockers), Sympathomimetics, 2006. (3). Wu. AH, Onigbhinde TA, Wong SS, Johnson KG, Evaluation of full scanning GC/ion trap MS of NIDA drugs of abuse urine testing in urine. J. Anal. Toxicol. 1992, May, Jun; 16(3) pgs 202-206. (4). Drugs and Human Performance, FACT SHEETS Cannabis, Amphetamines. (5). Kreek M.J. and Hartmann N. Chronic use of opiods and anti psychotic drugs, side effects , effects of endogenous opiods and toxicity; Annals New York academy of Science pgs 151-172. (6). Drugs of Abuse, Drug Enforcement Administration (DEA) Barbiturates pg 52, Benzodiazepines pg 53, Cocaine pg 45. (7) Data on file: Tulip Diagnostics (P) Ltd.

SYMBOL KEYS

Temperature Limitation	Consult Instructions for use	Date of Manufacture	Do not reuse
Manufacturer	IVD — *In vitro* Diagnostic Medical Device	This side up	PS — Production site
Use by	REF — Catalogue Number	DEVICE — Device	EC REP — Authorised Representative in the European Community
Σ — Contains sufficient for <n> tests	LOT — Batch Number / Lot Number	PIPETTE — Disposable Plastic Sample Applicator	

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PS

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