Rapid Drugs (Benzodiazepine) Screening Test Kit

The Rapid Drugs (Benzodiazepines) Screening Test Kit is a rapid chromatographic immunoassay for the qualitative detection of Benzodiazepines (BZO) in human Urine specimens.

For *In-Vitro Diagnostic* Use only

ORDER INFORMATION

Pack Size	REF
01 Test	PBZO 01
05 Tests	PBZO 05
10 Tests	PBZO 10
25 Tests	PBZO 25
50 Tests	PBZO 50

CLINICAL SIGNIFICANCE

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 test is most often used to screen for drug use. It's often required by the court system and some workplaces.

PRINCIPLE

The Rapid Drugs (Benzodiazepines) Screening Test Kit (Urine) detects Benzodiazepines through visual interpretation of color development on the strip. The assay relies on the competition for binding antibody**.** Drug conjugates are immobilized on the test region of the membrane. During testing, the specimen reacts with antibodies conjugated to colored gold nano particles. The mixture then migrates through the membrane by capillary action, and interacts with reagents on the membrane. If there are insufficient drug molecules in the specimen, the antibody-colored particle conjugate will bind to the drug conjugates, forming a colored band at the test region of the membrane. Therefore, a colored band appears in the test region when the urine is negative for the drug. If drug molecules are present in the urine above the cut-off concentration of the test, they compete with the immobilized drug conjugate on the test region for limited antibody binding sites. This will prevent attachment of the antibody-colored particle conjugate to the test region. Therefore, the absence of a colored band at the test region indicates a positive result. The appearance of a colored band at the control region serves as a procedural control, indicating that the proper volume of specimen has been added and membrane wicking has occurred**.**

KIT COMPONENTS

• Test Cassettes • Droppers • Package Insert

MATERIALS REQUIRED BUT NOT PROVIDED

• Specimen Collection Containers • Timer

PRECAUTIONS

1. For professional *in vitro* diagnostic use only. Do not use after the expiration date.
2. Wear protective gloves while handling specimens wash thoroughly afterwards.
3. The device is sensitive to humidity as well as heat. Therefore, take out the device from seal pouch before test.
4. Do not mix reagents from different lot.
5. Dispose all the samples and kits properly as per the instruction after test in accordance in GLP.
6. Follow the testing procedure exactly as mention in the insert.

STORAGE AND STABILITY

1. The kit can be stored at room temperature or refrigerated (2-30°C). The test device must remain in the sealed pouch until use. DO NOT FREEZE.
2. Do not use beyond the expiration date.
3. Do not use the test kit, if the pouch is damaged or seal is broken.

SPECIMEN COLLECTION & PREPARATION

- The Rapid Drugs (Benzodiazepines) Screening Test is intended for use with human urine specimens only.
- Urine collected at any time of the day may be used.
- Urine specimens must be collected in clean, dry containers.
- Turbid specimens should be centrifuged, filtered, or allowed to settle and only the clear supernatant should be used for testing.
- Perform testing immediately after specimen collection.
- Do not leave specimens at room temperature for prolonged periods. Urine specimens may be stored at 2-8°C for up to 2 days. For long term storage, specimens should be kept below -20°C.
- Bring specimens to room temperature prior to testing. Frozen specimens must be completely thawed and mixed well prior to testing. Avoid repeated freezing and thawing of specimens.
- If specimens are to be shipped, pack them in compliance with all applicable regulations for transportation of etiological agents**.** Whole Blood and Venipuncture Whole Blood can be used.

DIRECTIONS FOR USE

Allow the test device, specimen and/or buffer to equilibrate at room temperature (15-30°C) before testing.

1. Bring the pouch to room temperature before opening it. Remove the test cassette from the sealed pouch and use it within 1 hour.
2. Place the cassette on a clean and level surface.
3. Hold the dropper vertically and transfer 2 drops of Urine (approximately 50 µL)
4. Wait for the colored line(s) to appear. Read results at 5 minutes. **Note**: Do not interpret the result after 10 minutes.

INTERPRETATION OF RESULTS

Positive Result	
Negative Result	

1) Positive
The control line is the only visible line on the test device. This is indicative of presence of BZO above 300 ng/ml
2) Negative
The control line and Test line is visible line on the test device. This no BZO detected or BZO below 300 ng/ml
3) Invalid
The control line fails to appear. Insufficient specimen volume or incorrect procedural techniques are the likeliest reasons for control line failure. Repeat the test using a new test device.

Quality Control

Internal procedural controls are included in the test individually. A colored line appearing in control line region (C) is the internal procedural control. It confirms sufficient specimen volume and correct procedural technique. Control standards are not supplied with this kit; however, it is recommended that positive and negative controls be tested as a good laboratory practice to confirm the test procedure and to verify proper test performance.

Limitations of the Test

1.The Rapid Drugs (Benzodiazepines) Screening Test is for professional in vitro diagnostic use, and should be only used for the qualitative detection of Benzodiazepines.
2. This assay provides a preliminary analytical test result only. 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 National Institute on Drug Abuse (NIDA). Clinical consideration and professional judgment should be applied to any test result, particularly when preliminary positive results are indicated.
3. There is a possibility that technical or procedural errors as well as other substances and factors may interfere with the test and cause false results

Performance characteristics
Cutt off Value
The Rapid Drugs (Benzodiazepines) Screening Test Kit can detect BZO as low as 300ng/ml.

Diagnostic Performance
A total of 140 normal human urine specimens were collected from human subjects and 4 positive control samples tested by Rapid Drugs (Benzodiazepines) Screening Test Kit. These specimens were confirmed by commercially available kit. Comparison for all subjects is showed in the following table.

Commercial BZO Rapid Test Results	Benzodiazepines Rapid Test		Total
	Positive	Negative	
Positive	4	0	4
Negative	2	138	140
Total	08	138	146

Relative sensitivity: 100%, Relative Specificity: 98.0%, Overall agreement: 98.57%

Precision
Between-run precision has been determined by 3 independent assays on the same 2 specimens: Three different lots of the BZO Rapid Test have been tested over a 3-days period using negative and positive specimens. The specimens were correctly identified >99% of the time

Specificity and cross-reactivity
The following substances were tested and confirmed did not interfere with Rapid Drugs (Benzodiazepines) Screening Test at the listed concentrations.

Substances	Concentration
Glucose	2000 mg/dl
Human Albumin	2000 mg/dl
Human hemoglobin	10 mg/dl
Urea	4000 mg/dl
Uric acid	10 mg/d

To evaluate the analog cross-reactivity of the devices, the target drug, drug metabolites and the same class compounds that may cross-react with the target drugs are tested by Benzodiazepines screening rapid test.
All the compounds are added to drug-free urine at three different concentration levels. The final results are as following table. It displays the limits of detection for the specified drugs or their analog. Below these levels, the analog drugs show no cross-reactivity to target drugs.

Drugs	Concentration (ng/ml)
Oxazepam	300
Alprazolam	200
-Hydroxyalprazolam	1,500
Bromazepam	1,500

BIBLIOGRAPHY

1. Baselt RC. Disposition of Toxic Drugs and Chemicals in Man. 2nd ed. Davis: Biomedical Publications; 1982.
2. 2. Hawks RL, Chiang CN, eds. Urine Testing for Drugs of Abuse. Rockville: Department of Health and Human Services, National Institute on Drug Abuse; 1986.
3. 3. Substance Abuse and Mental Health Services Administration. Mandatory Guidelines for Federal Workplace Drug Testing Programs. 53

GLOSSARY OF SYMBOL

	Consult Instruction for Use
	Catalog Number
	Store between
	Manufacturer
	Keep away from sunlight



India office
BIOBOON BIOTECH INDIA LLP
207. Regent Square
2nd floor, Above D'mart shopping mall
Adajan
Surat-395009
Email : info@bioboonbiotech.com

USA Address:-BIOBOON BIOTECH
LLC 1526 West 3rd Street, Plainfield,
NJ, 07063 USA
Email : mahipal@bioboonbiotech.com