

The MHS Rapid Drug Test

THE DEVICE

The MHS Rapid Drug Test is a rapid, one-step screening analysis for the simultaneous, qualitative detection of multiple drugs and drug metabolites in human urine. Its progressive design eliminates contact with urine enabling a hygienic process.

PRINCIPLE

The MHS Rapid Drug Test 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.

The analysis 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 coloured 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 coloured line will not form in the test line region. A drug-positive urine specimen will not generate a coloured 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 coloured line will always appear at the control line region, indicating that proper volume of specimen has been added and membrane wicking has occurred.

INTENDED USE

The MHS Rapid Drug Test is intended for healthcare professionals (including professionals at point of care sites), and for in-vitro diagnostic use. It is a lateral flow chromatographic immunoassay for the qualitative detection of multiple drugs and drug metabolites in urine at the following cut-off concentrations:

Table 1. Detected drugs, metabolites and Cut-off levels

Test	Cut-off
Amphetamine (AMP)	1,000 ng/ml
Barbiturates (BAR)	300 ng/ml
Benzodiazepines (BZO)	300 ng/ml
Cocaine (COC)	300 ng/ml
Marijuana (THC)	50 ng/ml
Methadone (MTD)	300 ng/ml
Methamphetamine (mAMP)	1,000 ng/ml
Methylenedioxymethamphetamine (MDMA)	500 ng/ml
Morphine (MOP 300 or OPI 300)	300 ng/ml
Opiates (OPI 2000)	2,000 ng/ml
Phencyclidine (PCP)	25 ng/ml
Tricyclic Antidepressants (TCA)	1,000 ng/ml

The configuration of the MHS Rapid Drug Test comes with drug analytes. This assay provides a preliminary analytical test result therefore a more specific alternate chemical method must be used in order to obtain a confirmed analytical result. Gas Chromatography / Mass spectrometry (GC/MS) analysis is the confirmatory method

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used. Clinical consideration and professional judgment should be applied to any drug of abuse test result, particularly when preliminary positive results are used.

REAGENTS

The test contains a membrane strip coated with drug-protein conjugates on the test line, a polyclonal antibody against gold-protein conjugate at the control line, and a dye pad which contains colloidal gold particles coated with monoclonal antibody specific to Amphetamine, Barbiturate, Benzodiazepine, Cannabis, Cocaine, Ecstasy, Heroin/Morphine, Methadone, Methamphetamine, Phencyclidine, and Tricyclic Antidepressants.

CONCLUSION

It can be concluded that the MHS Rapid Drug Test has relatively high sensitivity, specificity and accuracy. It is convenient and can be stored at room temperature. No special instrument is needed to interpret test result. The background of the test is clear and interpretation of test result is very easy. The test has been determined to be safe and effective. It is well suited for rapid testing and screen testing for drug abuse purposes.

CUSTOMER SATISFACTION

MHS type rapid drug test devices are used both in the UK and internationally. They are used by the Police in Norway, Sweden and Germany for roadside testing, and they are supplied to Danish prisons for mandatory drug testing. They have gained wide applause as being the screen of choice by many UK business sectors including aviation, construction, manufacturing & fabrications, engineering, commerce & finance, probation & rehabilitation, education, MOD, ports & ferries, oil, gas & petrochemicals, and many more. A screen positive performed under MHS chain of custody sample collection has never been court challenged. The MHS Rapid Drug Test is an accurate and reliable primary screening tool; proven up to 99.8% accurate compared with GC/MS laboratory methods.

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