

Medi-Test Adulteration Stick

Test strips for rapid determination of creatinine, nitrite, glutaraldehyde, pH-value, density and oxidants in urine

Application:

Medi-Test Adulteration Stick is a rapid test to determine dilution or manipulation of urine samples. The test strip can be used as an initial test prior to drug screening. Here, through the evaluation of creatinine levels and density, possible dilution of the sample can be determined. The pH-value allows one to determine acid or leachate content. The presence of urine manipulation substances based on nitrite, glutaraldehyde or oxidants can be proven through the use of the adulteration stick.

Only for use by qualified personnel.

Instructions for use:

Use only fresh, uncentrifuged urine samples and mix well. Remove only the required number of test sticks from the package and close immediately following removal. Do not touch the test fields of the stick with the fingers. Submerge the test stick for approximately one second. Wipe the edge of the stick on the cup or paper towel to remove excess urine and to avoid overlapping of the individual test fields. Reaction colour can be compared with the colour scale after 60 seconds (glutaraldehyde after 5 seconds). Colour changes that take place after more than 2 minutes are of no significance.

Principle:

Creatinine: Test to determine dilution of a urine sample. The test field contains a creatinine indicator, which reacts in an alkaline medium to form a brown colour complex.

Nitrite: Test to determine the addition of nitrite. The test paper contains an amine and a coupling component. Through diazotization, followed by coupling, a red azo-dye results.

Glutaraldehyde: Test to determine the addition of glutaraldehyde. This reacts in an alkaline medium with nitroprussidnatrium to a violet colour complex.

pH: Test to determine the addition of acid and leachate. The test paper contains a mix indicator which shows a clear colour reaction from from pH 2 to pH 10 (from red through orange to green).

Density: Determination of the dilution of a urine sample. The test involves the ionic concentration of the urine. In the case of falling ionic concentration, a colour from yellow (high density) to green, to blue green (low density), results.

Oxidants: Test to determine the addition of oxidation substances. When oxidants (chlorine, hydrogen peroxide, pyridiniumchlorochromate, etc.) are present, the test paper changes to turquoise or light to dark blue.

Evaluation – Sources of Error:

Creatinine: Creatinine originates from creatine phosphate in the organism. It is proportional to the muscle mass of the individual and is excreted through the kidneys in near constant amounts. In accordance with the DOT – Guidelines ¹⁾, a urine sample containing less than 20 mg/dl creatinine is considered diluted and thereby manipulated.

Nitrite: Traces of nitrite in urine can be due to urinary tract infections or the influence of bacteria. High concentration of nitrite is, however, abnormal and indicates the addition of such ^{2), 3)}.

Glutaraldehyde: Glutaraldehyde does not normally occur in urine. Traces of such in a urine sample, could indicate manipulation ³⁾. A false-positive colour reaction of the test field is possible if ketone is present in the urine sample. This can occur if the individual suffers from a metabolic abnormality. In cases of hunger or extreme diets, ketone could show up in the urine sample. In these cases, the ketone test field shows an obvious violet colour after 30–60 seconds.

pH: The pH-value of fresh urine from healthy individuals lies between pH 5 and 6. pH-values of 3 or less, and of 10 or more, indicate manipulation.

Density: The normal value for adults with average nutrition and liquid intake lies approximately between 1.015 and 1.025. In accordance with the DOT – Guidelines ¹⁾, urine is considered diluted when in addition to a creatinine content of less than 20 mg/dl, the density is less than 1,003.

Oxidants: Oxidants, such as bleaching agents, are not normally found in urine. The presence of such substances in a urine sample is an indication that the sample has been manipulated ³⁾.

Quality Control:

Each laboratory should develop its own methods of quality control and evaluation criteria for examination. The function of test sticks should be checked regularly with positive and negative control samples (eg. after opening a new supply).

References:

Medi-Test Adulteration Stick is suitable only for proof of urine sample manipulation. The test stick **may not be used for purposes of medical diagnosis.**

The effects of medication or other metabolites on the test result is not known in all cases.

Use only hygienic containers for the collection of urine samples.

Protect the test strips from sunlight and moisture. Store the container in a cool and dry place (store not over +30 °C). Proper storage ensures that the test sticks do not expire before the expiry date printed on the package.

The lid of the test stick container contains a non-poisonous drying agent. Should it be swallowed, drink plenty of water.

Disposal: Dispose of the used test sticks following the valid security precautions.

Package units: Tubes of 50 dipsticks

Date of change: 08/2014

Literature:

1) U.S. Dept. of Transportation, Procedures for Transportation Workspace Drug and Alcohol Testing Programs, Federal Register, 2004 Nov.; 69 (216) 64865

2) U.S. Dept. of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Substances Abuse Prevention, Division of Workspace Programs, Program Document #35, Guidance for Reporting Specimen Validity Test Results, Sept. 28, 1998.

3) L. Kadehjian, Urine Specimen Adulteration: Attempts to thwart drug testing, Substance Abuse Specialties, Inc., Vol. II, No 1, 2001.

Product data and ordering information

Type	Urine dipstick
Presentation	tube of 50 strips
Parameters	Kreatinin, Nitrite, Glutaraldehyde, pH, Specific Gravity and Oxidisers
Reference (pack of 50)	93019
FDA 510(k)	K991927, Complexity: Waived