



Methylmercury Ions (CH₃Hg⁺) Rapid Test Strips (Water) (DTS806L)

This product is for research use only and is not intended for diagnostic use.

PRODUCT INFORMATION

Size 50T

Intended Use

This kit is intended for rapid test of Methylmercury ions(CH₃Hg⁺) in water.

General Description

Mercury is a silvery room-temperature heavy metal and a chemical element. Mercury is found in natural ores deposits and manufactured devices such as barometers, thermometers, dry-cell batteries, switches, fluorescent light bulbs, and other various electronics. Different forms of mercury have different toxicity, in which inorganic mercury and elemental mercury generally do not accumulate in the body, while organic mercury tends to accumulate in the body. Long-term exposure to high concentrations of mercury vapor can cause lung damage and even death. Inorganic mercury is irritating to the skin, and chronic inorganic mercury poisoning mainly manifests as symptoms of kidney damage such as proteinuria and hematuria. Inorganic mercury in water can be converted into methylmercury through methylation reaction under the action of vitamins. Methylmercury is the most toxic form of mercury, has strong neurotoxicity, and can pass through the placental barrier, causing fetal brain damage and developmental damage. This form is rarely present in drinking water but is a very common contaminant in the tissues of fish and causes damage to the nervous system as well as teratogenesis. Both the CAC and the EU stipulate that the maximum limit of methylmercury in carnivorous fish is 1 mg/kg, and other fishes must not exceed 0.5 mg/kg.

Principles of Testing

This test strip is based on the principle of immunochromatographic competition. The anti-CH₃Hg⁺-MNA-BSA monoclonal antibody-colloidal gold complex is coated on a colloidal gold binding pad to bind CH₃Hg⁺ in the sample. The synthetic CH₃Hg⁺-MNA-BSA detection antigen was coated on the surface of the nitrocellulose film as the detection line (T line), and the goat anti-mouse IgG antibody was coated on the nitrocellulose film as the quality control line (C line). After 3 to 5 minutes, the test results are displayed visually according to the color.

Reagents And Materials Provided

1. Methylmercury ions test strips, 50 strips/bottle
2. Instruction, 1 pcs

Materials Required But Not Supplied

1. Pipette (20-200 μL , 100-1000 μL , 1-10 mL)
2. Consumables: gun tip, disposable gloves, centrifuge tube

Storage

The test strips and microwells should be stored in a cool and dry place at 2-8 °C, avoiding freezing.

Assay Procedure

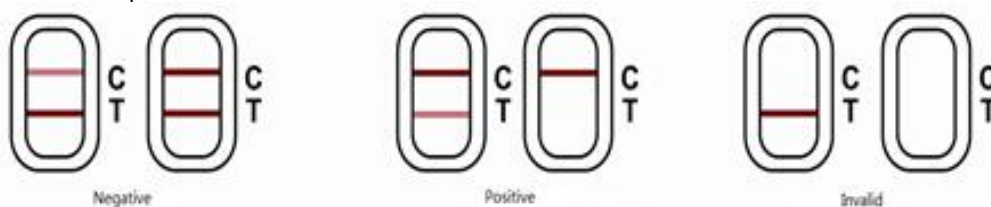
1. Take the test card from the original package, and use within 1 hour.
2. Vertically drop 100 μL of prepared sample solution into the sample well.
3. Start the timer as the added solution flows, react for 10 min, and determine the result according to "Interpretation of Results".

Interpretation Of Results

Negative (-): Color of Test Line (Line T) is deeper than Control Line (Line C) or the same color, indicating that the content of methylmercury ions in sample is lower than the LOD of the kit.

Positive (+): No color shows in Test line (Line T) or Color of Test Line (Line T) is lighter than Control Line (Line C) indicating that the methylmercury ions in sample is higher than the LOD of the kit.

Invalid: No color shows in Control Line (Line C), indicating the operation is incorrect or the test kit is out of date. In this case, please read the instruction again carefully, and repeat the assay with a new test strip.



Detection Limit

The minimum detection limit of test strips for methylmercury ions is 50 ppb.

Precautions

1. Please use the test strip within the validity period, and restore the test strip and samples to room temperature before use.
2. Rice and brown rice samples can share the same curve, that is, brown rice samples can also be tested with rice curves.
3. Shake all solutions before use. Reagent C will precipitate, but the results will not be affected.
4. Reagent A has weak volatility. It is recommended to wear a mask or operate in a ventilated kitchen.
5. When the sample is shaken, when removing 1.8ml of supernatant, occasionally particles may block the pipette tip, which can be blown out and re-absorbed.
6. Occasionally, the sample is emulsified due to excessively fine particles, etc., resulting in insufficient liquid extraction of the supernatant. In the "Method 2", after the first step is shaken for 5 minutes, it can be left to stand for 10 minutes and then centrifuged, or the centrifuge time can be increased to 8 -10min.
7. Do not touch the white film surface in the center of the test strip during the test. Discard it if you accidentally touch it.
8. Do not mix consumables such as pipette tips and centrifuge tubes to avoid cross-contamination.
9. The sample should be thoroughly mixed with the reagents in the microwells to avoid foaming.

10. After the second incubation, be sure to remove the sample pad at the lower end of the test strip and read the result within 1min, because the color depth of the test strip will change after drying, affecting the final result.
 11. The results must be read using the accompanying reader and sample card slot.
 12. Immediately close the reagent container cap after the reagent is removed from the reagent container. If you can't use 8 microwells at a time, you can cover the remaining microwells with a microwell cap, and immediately put it back in a reagent bucket containing a desiccant and keep it sealed. Carefully open the microwell cover to ensure that all reagents remain in the microwell.
 13. If a positive result is found, the test result needs to be confirmed by legal confirmation method.
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