Total Aflatoxin (AFT) FQ Test Kit

Technical Manual

(GICA)

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1 Principle and Application

The test kit is used for the quantitative detection of Total Aflatoxin (AFT) in the samples such as grains, animal feeds and edible oil.

The kit is developed using a competitive fluorescence immunochromatography assay. After adding the sample solution to the sample well of the test card, the Aflatoxin in the solution binds to the fluorescent microsphere-labeled antibodies, thereby preventing these antibodies from binding to the Aflatoxin conjugate on the cellulose membrane. The quantitative test results are obtained through the fluorescence strip reader.

2 Technique Data

Detection limit: 2 ppb (ppb=μg/Kg)

Detection range: 2-200 ppb (ppb=μg/Kg)

3 Kit Content

Package specification	20T/Kit
Test device	20
AFT Reconstitution Buffer	30mL×1
Instruction	1

4 Materials Required but Not Supplied

Equipment: grinder (for crushing solid samples), vortex mixer (for shake and mix), centrifuge, timer, thermostatic incubator, and balance with a division value of 0.01 g.

Micropipettes: single-channel (20-200μL and 100-1000μL).

Reagents:

For grain and feed treatment: Ethanol

For edible oil treatment: Methanol, n-hexane.

Compatible fluorescence strip reader: FD400H, FD600H.

5 Sample Pre-treatment

Please note that the labware must be clean. Use disposable pipette tips to avoid contamination of interference results.

5.1 Solution preparation before sample pre-treatment

Solution 1 for grain and feed sample use only:

50% Ethanol solution, (Ethanol /Deionized water= 1: 1).

Solution 2 for edible oil sample use only:

70% Methanol solution, (Methanol /Deionized water= 7: 3)

5.2 Sample pretreatment step:

5.2.1 Grain, feed treatment.

(1)Crush the sample thoroughly using a grinder and pass it through a 20-mesh sieve.

(2)Weigh 2 g of ground sample into a 50 mL centrifuge tube. Add 10 mL of 50% Ethanol solution (Solution 1) and vortex at 2500 rpm for 3 minutes to get the mixed liquid. Centrifuge at room temperature at 4000 rpm for 5 minutes, and collect the supernatant for later use.

(Note: If using a mini centrifuge, take 500μL of the mixed liquid from the centrifuge tube and transfer it into a 1.5 mL centrifuge tube. Centrifuge at 4000 rpm for 5 minutes to obtain the supernatant. Alternatively, take 5 mL of the mixed liquid and filter it through filter paper, and collect the filtrate.)

(3)Transfer 100μL of the supernatant into a 1.5 mL container, then add 400μL of AFT Reconstitution Buffer and mix by shaking. The resulting mixture is the sample solution.

5.2.2 Edible oil treatment.

(1) Weigh 2g of the sample into a 50mL centrifuge tube, add 10mL of 70% Methanol solution (Solution 2), and then add 8mL of n-hexane. Mix thoroughly on a vortex mixer at 2500 rpm for 3 minutes, and centrifuge at room temperature at 4000 rpm for 5 minutes.

(2)Remove the upper layer of liquid, transfer 100 μL of the lower layer into a 1.5 mL centrifuge tube, add 400 μL of AFT Reconstitution Buffer, and mix thoroughly. The resulting solution is the sample solution.

6 Test Steps

(1)Turn on the thermostatic incubator and set the temperature to 37°C.

(2)Turn on the fluorescence strip reader, click “Sample Test,” and scan the QR code on the test kit. If the “Item” and “Lot No. / SN(Serial No.)” displayed on the device screen match the test kit label, the QR code has been scanned successfully.

(3)Tear the foil pouch, take out of the test card and mark properly. Place the test card in the thermostatic

incubator.

(4)Pipette 60μL of sample solution and add it vertically and slowly into the sample hole (“S”). Close the incubator lid and incubate at 37°C for 10 minutes.

(5)Insert the test card into the fluorescence strip reader, click “Start Test,” and the result will be automatically displayed on the screen.

7 Notice

7.1 Don’t use the expired or damaged products.

7.2 When the test card is taken out of the refrigerator, it should be restored to the room temperature and then opened. The opened test card should be used as soon as possible to avoid failure after being affected by moisture.

7.3 Avoid touching the white nitrocellulose membrane in the middle of the detection card.

7.4 The sample solution to be examined needs to be clear and free of turbid particles. Otherwise, it is prone to lead to blockage, non-obvious color development and other abnormalities, affecting the determination of the experimental results.

7.5 The batch number selected on the fluorescence strip reader must correspond with the product QR code; reagents from different batches should not be mixed.

8 Storage Conditions

The kit shall be stored at 2°C to 30°C (35.6°F to 86°F) in dry environment.

Shelf life: 12 months. The date of manufacture is presented in the label of the box.