Deoxynivalenol (DON) FQ Test Kit

Technical Manual

(GICA)

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1 Principle and Application

The test kit is used for the quantitative detection of Deoxynivalenol(DON) in the samples such as grains, animal feeds.

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

2 Technique Data

Detection limit: 100 ppb (ppb=μg/Kg)

Detection range: 100-10000 ppb (ppb=μg/Kg)

3 Kit Content

Package specification	20T/Kit
Test device	20
DON 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, thermostatic incubator, and balance with a division value of 0.01 g.

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

Reagents: Ethanol.

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:

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

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 DON Reconstitution Buffer and mix by shaking. The resulting mixture is the sample solution.

6 Test Steps

Please read the instructions carefully before testing, and bring both the test card and the sample to room temperature (20–30°C).

(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

(1)Don’t use the expired or damaged products.

(2)The test card is a single-use product. Do not reuse.

(3)Droppers must not be used interchangeably to

prevent cross-contamination.

(4)The test cards, reagents, and QR codes from different batches shall not be mixed for use.

(5)Use the test card as soon as possible after opening the aluminum foil pouch to avoid moisture damage and invalid results.

(6)Avoid touching the white nitrocellulose membrane in the middle of the test card.

(7)The sample solution to be examined needs to be clear and free of turbid particles.

(8)Solid and liquid waste generated after using this product should be properly disposed of in a harmless manner.

(9)This product is intended for preliminary screening only. The final result shall be subject to the official arbitration method of the respective item.

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.