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Multipurpose Aflatoxin B1 Rapid Test Strip

Product Number: RPT0022

Shipping and Storage

1. Storage: 2–30℃, cool, dry, away from light; Do not freeze.
2. Shelf life: 12 months.

Component

Component	RPT0022
Aflatoxin B1 Test Cards	20T/Kit
Extraction reagent	1 bottle
15mL centrifuge tubes	2

Description

Aflatoxins are toxic metabolites produced by toxigenic strains of Aspergillus flavus and Aspergillus parasiticus. The four major types are B1, B2, G1, and G2. Aflatoxins possess strong acute toxicity, significant chronic toxicity, and high carcinogenicity. They mainly contaminate grains, oils and their products, with peanuts, cottonseeds, corn and their products being the most severely contaminated, followed by rice, wheat, barley, sorghum, sesame, etc. The national standard GB 2761 National Food Safety Standard – Limits of Mycotoxins in Foods specifies the maximum residue limits for aflatoxin B1 in food.

Principle

The Aflatoxin B1 Rapid Test Card is based on the principle of competitive inhibition immunochromatography. Aflatoxin B1 in the sample binds to colloidal gold-labeled specific monoclonal antibodies, inhibiting the binding of antibodies to aflatoxin B1-BSA conjugate on the Test Line (T line) of the NC membrane, resulting in color change of the T line. Qualitative detection of aflatoxin B1 residues in samples is achieved by comparing the color intensity of the T line and the Control Line (C line).

Application

This product is suitable for rapid detection of aflatoxin B1 in edible oils, grains, and feed.

Limit of Detection

1. Corn oil, peanut oil: 20μg/kg (ppb)
2. Other vegetable oils: 10μg/kg (ppb)
3. Grains, beans, nuts: 5μg/kg (ppb)
4. Feed: 10μg/kg (ppb)

Detection Time

Less than 30 min for 6 samples.

Auxiliary Equipment

Grinder, pipette, timer, balance, centrifuge, vortex mixer, centrifuge tubes, etc.

Specimen collection

1. Edible Oils:

1.1. Accurately weigh 0.2 g ± 0.01g (corn oil / peanut oil) or 0.4g ± 0.01g (other vegetable oils) into a 15mL centrifuge tube.

1.2. Add exactly 4mL extraction reagent, cap tightly, shake vigorously for 3 min (120 times/min), centrifuge at 4000 rpm for 3

min. The liquid forms two layers: the upper layer is the oil layer, the lower layer is the test solution.

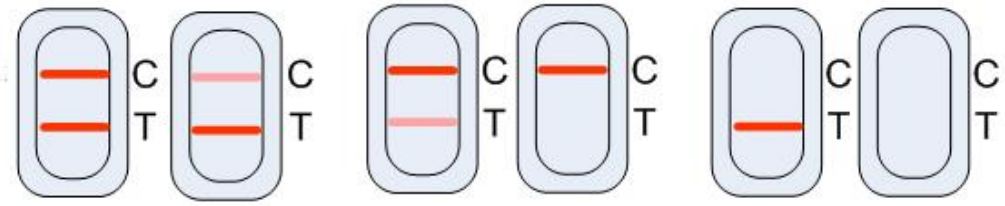
2. **Grains, Beans, Nuts:(Rice, wheat, corn, sorghum, soybean, peanut, sunflower seed, nuts, etc.)**
   2.1. Take ≥5g representative sample, grind (pass 20-mesh sieve), weigh 1g ± 0.1g into a 15mL centrifuge tube.
   2.2. Add exactly 4mL extraction reagent, cap tightly, shake vigorously for 3 min (120 times/min), centrifuge at 4000 rpm for 3 min. The supernatant is the test solution.
3. **Feed:(Livestock and poultry feed, corn germ meal, soybean meal, DDGS, sprayed corn bran, peanut meal, etc.)**
   3.1. Take ≥5g representative sample, grind (pass 20-mesh sieve), weigh 1g ± 0.1g into a 15mL centrifuge tube.
   3.2. Add exactly 6mL extraction reagent, cap tightly, shake vigorously for 3 min (120 times/min), centrifuge at 4000 rpm for 3 min. The supernatant is the test solution.

Protocol

1. Equilibrate test cards and prepared samples to room temperature before use. Do not open the foil pouch until ready.
2. Tear open the foil pouch, take out the test card, and mark the sample or standard number.
3. Use the provided dropper to slowly add 100 μL (about 3 drops) of test solution into the sample well (S). Start timing. Use a new dropper and card for each sample.
4. Read results at 5–8 min after sample addition; results outside this window are invalid.

Result analysis

1. **Visual Interpretation:**
   1.1. Negative (–): T line is darker than or equal in color to C line → AFB1 below LOD or not present.
   1.2. Positive (+): T line is lighter than C line, or T line does not appear → AFB1 above LOD. The lighter the T line, the higher the concentration.
   1.3. Invalid: No C line appears → improper operation or expired/damaged card. Retest with a new card.



Negative (–) Positive (+) Invalid

2. **Instrumental Interpretation:**
   2.1. Refer to the operation manual of the corresponding instrument for details.

Note

1. Use test cards once within the validity period. Avoid direct sunlight and fan blowing during testing.
2. Ensure test cards and sample solutions are equilibrated to 20–30 °C before testing for accurate results.
3. Do not touch the white membrane in the test window. Do not reuse droppers to avoid cross-contamination.
4. Tap water, distilled water, or deionized water cannot be used as negative controls.
5. Clean tools used for cutting samples before each test to prevent cross-contamination.
6. If no liquid migration occurs within 30 seconds after adding sample, add 1 more drop of test solution.
7. This product is for qualitative screening only. For confirmation, use national standard methods.
8. This product does not contain carcinogenic, highly toxic, flammable, explosive, or strongly corrosive reagents.
9. Wear lab coat, mask, and gloves during testing.
10. After use, rinse glass and plastic reagent bottles with tap water, sort and place in designated recycling bags, and dispose according to waste management regulations.