Tetracycline Rapid Detection Kit

Cat. No. KITG-049 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	This product is manufactured based on the principle of competitive inhibition colloidal gold immunochromatography, used for the detection of tetracyclines in fish/shrimp tissue and water samples. After the sample solution is dropped into the gold-labeled microwell, the tetracyclines in the sample solution bind to the gold-labeled antibody, thereby preventing the gold-labeled antibody from binding to the tetracycline conjugate on the cellulose membrane.
Description	This Tetracycline Rapid Detection Kit is designed for the rapid detection of tetracyclines in fish/shrimp tissue and water samples using competitive inhibition colloidal gold immunochromatography. The kit utilizes a colloidal gold immunochromatographic test card with a gold-labeled microwell. The assay is based on the competitive binding principle where tetracyclines in the sample compete with the tetracycline conjugate on the cellulose membrane for binding to the gold-labeled antibody. The kit provides a quick, on-site screening method for tetracycline residues with a sensitivity of 1 ppb (ng/mL). Results are available within 5-8 minutes.
Form	Colloidal gold immunochromatographic test card (with gold-labeled microwell)
Applications	Detection of tetracyclines in fish tissue samples; Detection of tetracyclines in shrimp tissue samples; Detection of tetracyclines in water samples; On-site screening for tetracycline residues in aquaculture products; Food safety monitoring for tetracycline antibiotics
Notes	Expired products or products with damaged aluminum foil bags must not be used.

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	When removing the test card from the refrigerator, allow it to return to room temperature before opening; opened test cards should be used as soon as possible to avoid failure due to moisture absorption. Do not touch the white membrane surface in the center of the test card. Liquid droppers must not be mixed to avoid cross-contamination. The sample solution to be tested must be clear, free of turbid particles, and free of bacterial contamination; otherwise, it may easily cause blocking, unclear color development, and other abnormal phenomena, thereby affecting the judgment of experimental results. Before sample processing, experimental utensils must be clean and disposable pipette tips must be used to avoid contamination that may interfere with experimental results. Results read after 30 minutes are invalid. Store the kit in a dry environment at 2-30°C. For research use only.
Storage	Store the kit in a dry environment at 2-30°C. The product is valid for 1 year.
Shipping	Shipped at ambient temperature
Reaction conditions	Detection method: Competitive inhibition colloidal gold immunochromatography Assay time: 5-8 minutes (results read after 30 minutes are invalid) Reaction temperature: Room temperature Sample types: Fish/shrimp tissue; Water samples
Unit definition	Sensitivity: Tetracyclines (dominant): 1 ppb (ng/mL) Tetracyclines (recessive): 1 ppb (ng/mL)
Usage	Kit Components: Test card (with gold-labeled microwell): 20 pieces (20T/box) or 10 pieces (10T/box) Extraction Reagent 1: 1 bottle Reagent 1: 1 bottle Oxidizing Agent: 1 bottle MG Reconstitution Solution: 1 bottle Instruction Manual: 1 copy Materials Required but Not Supplied: Instruments: Homogenizer, nitrogen blow-drying apparatus, oscillator, centrifuge, graduated pipette, balance (sensitivity 0.01 g) Micropipettes: Single-channel 20 μL-200 μL, 100 μL-1000 μL Reagents: Acetonitrile Sample Preparation: Before sample processing, experimental utensils must be clean

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and disposable pipette tips must be used to avoid contamination that may interfere with experimental results. Water Sample: 1) Mix 60 µL of the water sample to be tested with 60 µL of reconstitution solution, and set aside for use. Fish/Shrimp Tissue: (It is recommended that shrimp be thoroughly cleaned after removing the head and shell, and fish be scaled and sampled from the dorsal part with less fat; samples should be stored refrigerated away from light.) 1) Take a certain amount of chopped defatted tissue sample and homogenize with a homogenizer (or cut into pieces with scissors); 2) Weigh 4 g ± 0.1 g of the homogenate into a matching 15 mL centrifuge tube; 3) Add 2 mL of Reagent 1 solution to the above centrifuge tube, shake vigorously for 2 min, then add 150 µL of Extraction Reagent 1 solution and 4 mL of acetonitrile solution, tighten the cap and shake vigorously for 2 min, then centrifuge at 4000 rpm for 5 min at room temperature; 4) At this point, the tissue sample homogenate is at the bottom of the centrifuge tube. Transfer 2 mL of the supernatant to a 5 mL centrifuge tube, add 100 µL of oxidizing agent, mix gently by parallel shaking for 30 seconds, and dry at 65°C using a nitrogen evaporator or hair dryer. 5) Add 0.3 mL of MG reconstitution solution to the dried centrifuge tube, repeatedly pipette for 1 min to fully reconstitute the solid residues at the bottom and on the inner wall of the centrifuge tube, and draw 120 µL (approximately 4-5 drops) of the solution; this solution is the test solution. Assay Protocol: 1. Tear open the aluminum foil pouch of the test card, remove the reagent plate, and place it on a flat, clean surface. 2. Add 120 µL (5-6 drops) of the prepared sample solution to be tested into the gold-labeled microwell, wait for 2 minutes for reaction, then use a dropper to pipette until the purple-red substance in the well is completely dissolved, wait for another 2 minutes, then draw 90 µL (4-5 drops) of the solution from the well and drop it into the sample loading hole; start timing after sample loading. 3. Allow the result to be judged after placing at room temperature for 5-8 minutes; results read after 30 minutes are invalid. Data Analysis: Negative (-): In the detection window, the control line (C) shows a purple-red line, and the test line (T) color is consistent with or darker than the control line, indicating that the tetracycline residue concentration in the sample is below 1

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	ppb or no tetracycline residue is present. Positive (+): In the detection window, the control line (C) shows a purple-red line, and the test line (T) shows no color or is lighter than the control line (Note: If the T line shows obvious green color after 5 minutes, it can be judged as positive), indicating that the tetracycline residue concentration in the sample is above 1 ppb. Invalid: In the detection window, the control line (C) does not show a purple-red line.

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