4IN1 Milk Antibiotic Residues (BCST) Rapid Test Strip

Technical Manual

(GICA)

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1 Intended Application

This colloidal gold immunochromatography assay (GICA)-based test strip is used to detect residues of Beta-lactams, Ceftiofur, Tetracyclines and Sulfonamides (BCST) in raw milk, whole milk powder, and pasteurized milk.

2 Technique Data

Specificity: This test strip does not show cross-reactivity with sulfonamides, quinolones, melamine, and other substances.

Detection Limit: (ppb=μg/kg)

β-lactams

Antibiotic Name	Detection Limit (ppb)
Penicillin-G	2 - 3
Ampicillin	2 - 4
Amoxicillin	3 - 4
Oxacillin	5 - 10
Cloxacillin	2 - 5
Dicloxacillin	2 - 5
Nafcillin	10 - 20
Piperacillin	1 - 4
Ticarcillin	15 - 30
Aspoxicillin	1 - 5
Phenoxymethylpenicillin	2 - 5
Cefquinome	15 - 20
Cefazolin	14 - 22
Cephapirin	6 - 8
Cefacetrile	15 - 30
Cefoperazone	3 - 6
Cephalexin	50 - 100
Cefalonium	3 - 5
Cephalothin	4 - 6
Ceftriaxone	5 - 10
Ceftizoxime	300 - 450
Cefotaxime	20 - 40
Cefuroxime	90 - 125

Ceftiofur

Antibiotic Name	Detection Limit (ppb)
Ceftiofur	5 - 10

Sulfonamides

Antibiotic Name	Detection Limit (ppb)
Sulfamethazine	2 – 10
Sulfapyridine	10 – 30
Sulfaquinoxaline	14 - 28
Sulfaphenazolum	20 - 40
Sulfamethoxazole	3 - 6
Sulfachloropyridazine	8 - 16
Sulfadiazine	2 - 5
Sulfadimethoxypyrimidine	1.5 - 4
Sulfadoxine	80 - 100
Sulfamerazine	4 - 8
Sulfamethoxypyridazine	20 - 40
Sulfadimethoxine	12 - 24
Sulfathiazole	2 - 5
Sulfamethizole	2 - 5
Sulfamonomethoxine	2 - 4
Sulfapyrazole	80 - 100
Sulfamoxole	30 - 50
Sulfisoxazole	80 - 100

Tetracyclines

Antibiotic Name	Detection Limit (ppb)
Tetracycline	10 – 20
Chlortetracycline	20 - 30
Doxycycline	10 - 15
Oxytetracycline	50 - 60

3 Kit Content

Package specification	48T/Kit	96T/Kit
Test strip (with gold-labeled microwell)	6bottles×8strips	12bottles×8strips
Instruction	1	1

4 Materials Required but Not Supplied

Timer; single-channel micropipette (20–200 μL)

5 Sample Pre-treatment

1) Raw milk, pasteurized milk, and similar samples: Allow to return to room temperature before testing. Samples with obvious clumping are not recommended, as incomplete chromatography may affect result interpretation.

2) Whole milk powder: Fully dissolve 1 g of whole milk powder in 9 mL of purified water.

6 Test Steps

Read the instructions carefully before testing. Bring the kit and samples to room temperature (15–40 °C), and perform the test within this range.

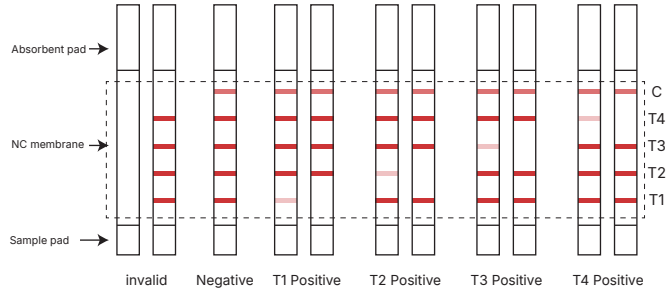
1) Add 200 μL of milk sample into the gold-labeled microwell. Pipette up and down 3–5 times to mix thoroughly.

2) Let the reaction stand for 2–3 minutes.

3) Insert the sample pad end of the test strip into the microwell.

4) Allow the reaction to proceed for 8–10 minutes. Take out the test strip, and interpret the results. Results interpreted after 10 minutes are considered invalid.

7 Results Judgement



Negative: The color of the T line is consistent or deeper than the C line. It indicates that the concentration in the sample is below the detection limit or not present.

Positive: C line appears, while the T line does not appear or appears lighter in color than the C line. It indicates that the concentration in the sample is above the detection limit.

Invalid: If the C line does not appear, the result might be considered invalid.

8 Notice

8.1 Do not use the product after the expiration date.

8.2 The test strips and gold-labeled microwells are for single use only.

8.3 Avoid using samples that are clotted or have abnormal sensory characteristics. Do not use colostrum as a sample. Milk samples must be uniform and liquid, without clots or sediment. Mix samples thoroughly before testing.

8.4 After opening, the test strip container, which contains microwells and test strips, should always remain tightly sealed. It is recommended to use all contents within one week of opening.

8.5 If the sample has a high fat content, the chromatography speed will be slower. It is recommended to extend the first reaction time in step 4) of 【Test Step】by 60 seconds.

8.6 Do not mix test strips and microwells from different batches.

8.7 Do not touch the NC membrane in the center of the test strip.

8.8 If the T line on the strip shows a visible break, the result may be affected. It is recommended to repeat the test.

8.9 Solid and liquid waste generated after using this product should be disposed of in a safe and environmentally friendly manner.

8.10 This product is intended for preliminary screening only. Final results should be confirmed using the official arbitration method for the specific analyte.

9 Storage Conditions

The kit shall be stored at 2 to 30°C in dry environment.

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