3IN1 Milk Antibiotic Residues (BST) Rapid Test Strip

Technical Manual

(GICA)

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Shenzhen Finder Biotech Co.,Ltd.
Web: www.szfinder.com
Tel: +86 0755 23499025 Email: techsupport@szfinder.com
Add: Building B12,Life Science Industrial Park, KuiyongSubdistrict, Dapeng New Area, Shenzhen,China

1 Intended Application

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

2 Technique Data

Specificity: This test strip does not show cross-reactivity with fluoroquinolones, melamine, chloramphenicol, or other similar 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

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: Mix with purified water at a mass ratio of 1:9.

6 Test Steps

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

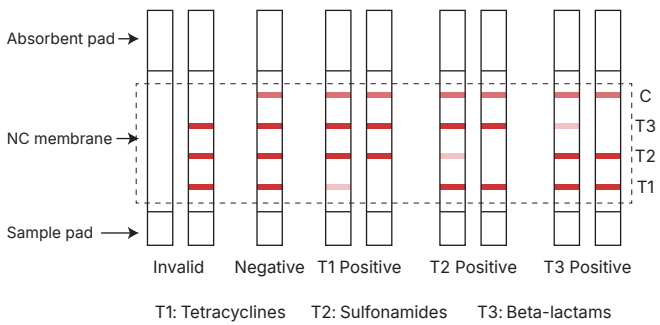
2) Incubate at 15-40 °C for 2-3 minutes.

3) Insert the sample pad end of the test strip (in the direction indicated by the arrow) into the microwell.

4) Incubate at 15-40 °C for 8 to 10 minutes.

5) Take out the test strip, and interpret the results. Results interpreted after 20 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 The test strips and gold-labeled microwells are for single use only. Hold the upper end of the test strip (the absorbent pad side) and avoid touching the lower end (sample pad and NC membrane area).

8.2 After taking out the required microwells and test strips, the strip container should always remain sealed. It is recommended to use all test strips within one week after opening the container.

8.3 Avoid using clotted samples or those with abnormal sensory characteristics. Do not use colostrum as a sample. Milk samples must be homogeneous and in a liquid state, free of clots or precipitates. Mix the sample thoroughly before testing.

8.4 Samples must be well mixed to ensure the test results accurately reflect the actual drug residue in the sample.

8.5 If the sample has a high fat content, the chromatography speed will be slower. It is recommended to extend the first incubation time by 60 seconds.

8.6 If a positive result is obtained, repeat the test for confirmation.

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

8.8 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.