Sulfamethazine Residue Rapid Test Strip (Honey)

Prod. No.: DTS015
Pkg.Size: 40T

INTENDED USE

The Sulfamethazine Residue Rapid Test Device is used to qualitative detection of Sulfamethazine in honey samples at the sensitivity of 10 μg/kg(10 ppb). It only takes approx.20-30 min.

GENERAL DESCRIPTION

Sulfamethazine (SM2) is a broad spectrum antibiotic which is widely used as bacteriostatic agents in animal husbandry and veterinary practice. Combined with inhibitors of dihydrofolate reductase such as trimethoprim, tetroxoprim, or pyrimethamine Sulfamethazine are also used in veterinary medicine for the treatment of intestinal infections, mastitis, pulmonitis and other (systemic) diseases. However, it leads side effects of hemato-toxic, agranulocytosis, hypersensitiveness . It will affect urinary system and cranial nerves system. Therefore, it is possible that Sulfadiazine residues, after use in illegal practice, may lead to a risk for consumers.

PRINCIPLE OF THE TEST

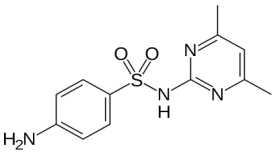
Competitive assays are primarily used for testing small molecules. If Sulfamethazine is present in the sample it will therefore bind with the conjugate and will be labelled. As the sample migrates along the membrane and reaches the capture zone an excess of labelled antibody will bind to the immobilised antigen so that no visible line is produced. The bound conjugate will then bind to the antibodies in the control zone producing a visible control line. A single control line on the membrane is a positive result. Two visible lines in the capture and control zones is a negative result. However, if an excess of unlabelled Sulfamethazine is not present, a weak line may be produced in the capture zone, indicating an inconclusive result.

MATERIALS PROVIDED

Sulfamethazine Residue Rapid Test Device: 40 devices
PBST buffer: 1 vial
Buffer A: 1 vial
Buffer B: 1 vial
Throwaway plastic dropper: 160 pieces per kit
15ml graduated vial: 40 pieces per kit
5ml graduated vial: 40 pieces per kit

ADDITIONAL MATERIAL

1. Ethyl acetate
2. Any blower
3. Test tube rack



Sulfamethazine

STORAGE

Store at 4-30℃, DO NOT FREEZE or use beyond the expiration date .The shelf life is 12 months.

PRECAUTIONS

1. Do not use after the expiration date.
2. The test device should remain in the sealed pouch until use.
3. Use device as soon as possible but within 1 hour after removal from the pouch specially.
4. Do not touch the white membrane in the mid of the test device.
5. Use the plastic dropper for one time in case cross reaction happens.
6. It may lead into wrong result if there is bleach, oxydant, or fusty serum.
7. Do the test at room temperature. It takes longer time at high temperature, and shorter time at low temperature.
8. Different samples will influence the result on NC thecal. Read the result according to color differences of the color bar.
9. Be careful if you are allergic to antibiotics.

SPECIMEN TREATMENT

If there is some concretion in honey samples, heat the sample in 60-80℃ water, and then mix the sample.

1. Method with simple tools

1.1 Add honey to “3ml” mark line of a 15ml centrifugal vial, no more than 4ml.
1.2 Add 1ml of Buffer A (based the mark lines), and then add 1ml of Buffer B (based the mark lines), shake to dissolve the honey sample. (Note: If it is difficult to dissolve the honey, heat the sample in 60-80℃water for a few minutes, and then shake to dissolve.)
1.3 Add 8ml of ethyl acetate (based the mark lines) into the 15ml centrifugal vial, and shake for approx. 8 min up side down.
1.4 After phase separation, transfer 5ml of ethyl acetate (based the mark lines) supernatant into a 5ml graduated vial by plastic dropper.
1.5 Evaporate the ethyl acetate by any drier.

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1.6 Transfer 5 full drops of PBST vertically into the 5ml vial, dissolve the commixture around the tube.
1.7 Keep still for 2min, and suck the under layer solution for test.

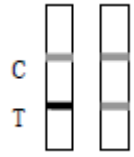
2. Method with exact tools

2.1 Weigh 4g of honey and transfer into a 15ml centrifugal vial.
2.2 Add 1ml of Buffer A, and then add 1ml of Buffer B, shake to dissolve the honey sample. (Note: If it is difficult to dissolve the honey, please heat the sample in 60-80℃water for a few minutes, and then shake to dissolve.)
2.3 Add 8ml ethyl acetate by a graduated pipette, and shake for approx. 8 min up side down.
2.4 After approx. 2 min (for phase separation), transfer 5 ml of ethyl acetate (based the mark lines) supernatant into a 5 ml graduated vial by plastic dropper.
2.5 Evaporate the ethyl acetate by any drier, or evaporate the ethyl acetate at 65°C under a mild stream of nitrogen.
2.6 Transfer 160 µl of PBST into the 5ml graduated vial, dissolve the commixture around the tube, and then use the solution for the test.

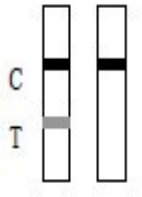
TEST PROCEDURE

1. Prepare samples according to ***SPECIMEN TREATMENT***.
2. Remove the Residue Rapid Test Devices from sealed pouch.
3. Hold the dropper vertically and transfer 3 full drops of solution obtained from specimen treatment to the specimen well (S) of the test device, and then start the timer. Avoid trapping air bubbles in the specimen well (S).
4. Wait for purplish red bands to appear. The result should be read in approximately 5~10 minutes. It is significant that the background is clear before reading the test. Do not interpret results after 10 minutes.

INTERPRETATION OF RESULTS



NEGATIVE:
Two lines are visible and the Test Line (T) is the same as or darker than the Control Line (C), which also is the Reference Line (R). This indicates that the Sulfamethazine concentration in sample is below 10 µg/kg.



POSITIVE:
Two lines are visible, but the Test Line (T) is lighter than the Control Line (C), or there is no Test Line. This indicates that the Sulfamethazine concentration in sample is above 10 µg/kg.

INVALID:
Insufficient specimen volume or incorrect procedural techniques are the most likely reasons for an invalid result. Review the procedure and repeat the test with a new test device. Stop using the test kit immediately if the problem is not solved and contact your local distributor.

SENSITIVITY

To acquire the exact sensitivity, reduplicative experiment has been done on the sample containing 10 µg/kg Sulfamethazine.

SPECIFICITY

No cross-reaction with Sulfapyrimidine(10µg/kg), Sulfapyridine (10µg/kg),
Madribon(10µg/kg),or Sulfanilamide-glyoxalin(10µg/kg).
No cross-reaction with Chloramphenicol, Tetracyclines, or Streptomycin.

QUALITY CONTROL

Procedural control is applied. Apurplish red band appears in the control region (C), which is also the reference region (R) that is for internal procedure control. It ensures efficiency and correct procedure technique.

Control standard is not supplied in this device. Proper laboratory practice is the confirmation of the test procedure and test performance.

LIMITATION OF THE PROCEDURE

1. The Sulfamethazine Residue Rapid Test Device is only a preliminary analytical result. A secondary analytical method must be taken for confirmation. Gas or liquid chromatography and mass spectrometry method (GC/LC/MS) is preferred.
2. The Sulfamethazine Residue Rapid Test Device is a qualitative screening assay and cannot test the Sulfamethazine concentration in the specimen.
3. Technical or procedural errors, as well as other interfering substance in the specimen may cause falseness.

PRECISION

A multi-center test evaluation comparison is conducted between our Sulfamethazine Residue Rapid Test Device to other ELISA Sulfamethazine test. 243 specimens are tested, including 145 negative and 98 positive. 98.1% of our Sulfamethazine Residue Rapid Test Device is effective when comparing to other ELISA test.

REFERENCE

1. Kaniou, S; Pitarakis, K; Barlagianni, I; Poulios, I (Jul 2005). "Photocatalytic oxidation of sulfamethazine". Chemosphere 60 (3): 372–80.
2. Calvo, R; Sarabia, S; Carlos, R; Du Souich, P (Mar 1987). "Sulfamethazine absorption and disposition: effect of surgical procedures for gastroduodenal ulcers". Biopharmaceutics & drug disposition 8 (2): 115–24.

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