



## Charm TRIO<sup>®</sup> Test for Milk

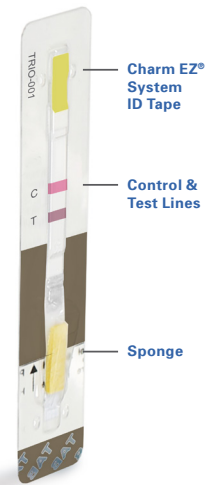
### Product Overview

Charm<sup>®</sup> ROSA<sup>®</sup> (Rapid One Step Assay) technology is trusted by the dairy industry worldwide for fast and accurate milk residue screening.

The Charm TRIO Test (TRIO) detects beta-lactams, sulfa drugs, and tetracyclines in raw commingled cow milk at or below US Tolerance Level and Canadian Maximum Residue Limit (MRL).

### Benefits of TRIO Test Include:

- Achieves results in 3 minutes
- Detects 6 beta-lactams, sulfa, and tetracycline drugs
- AOAC-RI Validated
- Incubates at  $56 \pm 1 \text{ }^\circ\text{C}$
- Meets US Tolerance levels and Canadian Maximum Residue Limit (MRL)



Charm ROSA Strip

### Simple Procedure with the Charm EZ System



Add Sample



Incubate



Read Results in Less Than 5 Seconds



For Batch Processing

Incubate multiple strips simultaneously, then read results in the Charm EZ system.

## Sensitivity in Milk

Sensitivity - Detection <sup>F</sup> in Cow Milk at 0 to 7 °C		
Beta-lactam Drug	Detection Level <sup>†</sup> (ppb*)	US Safe Level or Tolerance / Canadian MRL (ppb*)
Amoxicillin	3.5 ppb	10 / None ppb
Ampicillin	8.8 ppb	10 / 10 ppb
Ceftiofur and Metabolites <sup>^</sup>	50 ppb	100 / 100 ppb
Cephapirin	14.5 ppb	20 / 20 ppb
Cloxacillin	8.5 ppb	10 / None ppb
Penicillin G	2.0 ppb	5 / 6 <sup>§</sup> ppb

Sulfa Drug	Detection Level <sup>†</sup> (ppb*)	US Safe Level or Tolerance / Canadian MRL (ppb*)
Sulfadimethoxine	7.6 ppb	10 / 10 <sup>‡</sup> ppb
Sulfamethazine	9.2 ppb	10 / 10 <sup>‡</sup> ppb

Tetracycline Drug	Detection Level <sup>†</sup> (ppb*)	US Safe Level / Tolerance / Canadian MRL (ppb*)
Chlortetracycline	34 ppb	300 / 100 ppb
Oxytetracycline	53 ppb	300 / 100 ppb
Tetracycline	42 ppb	300 / 100 ppb

<sup>†</sup> Positive at least 90% of the time with 95% confidence.

\* Parts per billion or ng/mL

<sup>^</sup> Ceftiofur parent drug sensitivity is approximately 1/2 that reported in the table.

<sup>§</sup> Canadian MRL for penicillin G is 0.01 IU/ml, equivalent to 6 ppb.

<sup>‡</sup> Canadian MRL for sulfa drugs are singly or in combination with other MRL listed sulfonamides.

<sup>F</sup> Nothing stated herein, including detection level information, shall be understood to imply any warranty or guaranty.

Intra-family Cross Reactivity - Detection Level <sup>†</sup> in Cow Milk at 0 to 7 °C	
Beta-lactam Drug	Detection Level <sup>†</sup> (ppb*)
Cefacetrile	30 ppb
Cefadroxil	750 ppb
Cefalexin	750 ppb
Cefalonium	10 ppb
Cefazolin	20 ppb
Cefoperazone	2 ppb
Cefquinome	40 ppb
Cefuroxime	125 ppb
Dicloxacillin	10 ppb
Nafcillin	100 ppb
Oxacillin	25 ppb
Penethamate	2 ppb
Piperacillin	1 ppb
Tetracycline Drug	Detection Level <sup>†</sup> (ppb*)
Doxycycline	250 ppb

Sulfa Drug	Detection Level <sup>†</sup> (ppb*)
Sulfabenzamide	200 ppb
Sulfacetamide	35 ppb
Sulfachlorpyridazine	1 ppb
Sulfadiazine	3 ppb
Sulfadoxine	20 ppb
Sulfaethoxypyridazine	7 ppb
Sulfaguanidine	125 ppb
Sulfamerazine	4 ppb
Sulfamethizole	1 ppb
Sulfamethoxazole	2 ppb
Sulfamethoxypyridazine	5 ppb
Sulfanitran	300 ppb
Sulfapyridine	5 ppb
Sulfaquinoxaline	3 ppb
Sulfathiazole	1 ppb
Sulfisoxazole	15 ppb

- Penethamate is rapidly converted to benzylpenicillin (penicillin G), the marker residue.

## Ordering Information

Order Codes	Each Kit Includes
LF-TRIO-40NSK	Test Strips
LF-TRIO-100K	Test Strips and Positive Controls

See Operator's Manual for additional kits and order codes.