

5001 Campus Drive
College Park, MD 20740-3835

M-I-96-10 (Revision #10)

December 20, 2018

TO: Director, Office of State Cooperative Programs
Attn: All Staff, Division of Milk Safety

FROM: Milk and Milk Products Branch (HFS-316)

SUBJECT: Drug Residue Test Methods For Confirmation Of Presumptive Positive Results And Initial Producer Trace Back

This coded memorandum replaces and rescinds the previous revision of this coded memorandum (M-I-96-10 (Revision #9), issued August 31, 2016). Revision #9 will be identified in the next Index of Memoranda of Information (M-I) as "INACTIVE".

This revision reflects changes made to M-a-85 (Revision #16), issued December 12, 2018, and adds Tables 2 - 5 for other species milk.

Modifies tables to reflect the acceptance of the following:

- Charm® ROSA® Tetracycline SL Test
- Charm® TRIO Test
- Charm® ROSA® Sulf Test
- Neogen BetaStar® Advanced for Beta-Lactams Test
- Neogen BetaStar® Advanced for Tetracyclines Test

It also modifies the tables to remove the following tests that are no longer available:

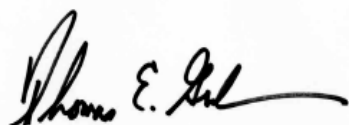
- Neogen BetaStar® Plus Beta Lactam Test
- Charm® II Cloxacillin Test

The following tables have been developed by FDA's Center for Veterinary Medicine (CVM) to demonstrate those screening tests that have been accepted under the requirements of Appendix N of the *Grade "A" Pasteurized Milk Ordinance* (PMO) to determine whether presumptive positive milk tank truck and/or raw milk supplies that have not been transported in a milk tank truck results are screening positive (load or raw milk supplies that have not been transported in a bulk milk pickup tanker confirmation). These tables may also be used to determine an appropriate initial producer trace back test to

identify the positive producer(s) who contributed the milk containing drug(s) on a positive milk tank truck load. These tables do not include any additional requirements for testing and are a reference for which tests are appropriate to test samples from a producer(s), which has contributed milk containing drug(s) to a positive milk tank truck.

Copies of this memorandum are enclosed for distribution to FDA Milk Specialists, Milk Regulatory/Rating Agencies, Laboratory Evaluation Officers and Milk Sanitation Rating Officers. This memorandum should be widely distributed to representatives of the dairy industry, State Veterinarians, State Veterinary and Pharmacy Boards, Veterinarian Professional Organizations and other interested parties and will also be available on the FDA Website at <http://www.fda.gov> at a later date.

If you would like an electronic version of this document prior to it being available on the FDA Website, please e-mail your request to Monica.Metz@fda.hhs.gov



Thomas Graham, PhD, Team Leader
Laboratory Proficiency & Evaluation Team



Monica Metz, Chief
Milk and Milk Products Branch

Table 1: Raw, Commingled Cow Milk

PRESUMPTIVE POSITIVE TEST	SCREENING TEST POSITIVE (CONFIRMATION TEST) OPTIONS
<p>Charm® <i>B. stearothersophilus</i> Tablet Disk Assay</p> <p>Not a beta-lactam Specific Test. Refer to Footnote¹.</p>	<p>Charm® <i>B. stearothersophilus</i> Tablet Disk Assay</p> <p>Charm® II Tablet Beta-Lactam Test (Competitive Assay)</p> <p>Charm® II Tablet Beta-Lactam Test (Sequential Assay)</p> <p>Charm® SL Beta-Lactam Test</p> <p>Charm® 3 SL3 Beta-Lactam Test</p> <p>Charm® FLUSLBL Flunixin and Beta-Lactam Test</p> <p>DSM Delvotest® P 5 Pack Test (Reader and Visual)</p> <p>DSM Delvotest® P Mini Test</p> <p>IDEXX New Snap® Beta-Lactam Test</p> <p>Neogen BetaStar® Advanced for Beta-Lactams Test</p>
<p>Charm® II Tablet Beta-Lactam Test (Competitive Assay)</p>	<p>Charm® II Tablet Beta-Lactam Test (Competitive Assay)</p> <p>Charm® II Tablet Beta-Lactam Test (Sequential Assay)</p> <p>Charm® SL Beta-Lactam Test</p> <p>Charm® 3 SL3 Beta-Lactam Test</p> <p>Charm® FLUSLBL Flunixin and Beta-Lactam Test</p> <p>IDEXX New Snap® Beta-Lactam Test</p> <p>Neogen BetaStar® Advanced for Beta-Lactams Test</p>
<p>Charm® II Tablet Beta-Lactam Test (Sequential Assay)</p>	<p>Charm® II Tablet Beta-Lactam Test (Competitive Assay)</p> <p>Charm® II Tablet Beta-Lactam Test (Sequential Assay)</p> <p>Charm® SL Beta-Lactam Test</p> <p>Charm® 3 SL3 Beta-Lactam Test</p> <p>Charm® FLUSLBL Flunixin and Beta-Lactam Test</p> <p>IDEXX New Snap® Beta-Lactam Test</p> <p>Neogen BetaStar® Advanced for Beta-Lactams Test</p>
<p>Charm® II Tablet Beta-Lactam Test² (Quantitative Assay)</p>	<p>Charm® 3 SL3 Beta-Lactam Test</p> <p>Neogen BetaStar® Advanced for Beta-Lactams Test</p>
<p>Charm® SL Beta-Lactam Test</p>	<p>Charm® II Tablet Beta-Lactam Test (Competitive Assay)</p> <p>Charm® II Tablet Beta-Lactam Test (Sequential Assay)</p> <p>Charm® SL Beta-Lactam Test</p> <p>Charm® 3 SL3 Beta-Lactam Test</p> <p>Charm® FLUSLBL Flunixin and Beta-Lactam Test</p> <p>IDEXX New Snap® Beta-Lactam Test</p> <p>Neogen BetaStar® Advanced for Beta-Lactams Test</p>
<p>Charm® 3 SL3 Beta-Lactam Test</p>	<p>Charm® 3 SL3 Beta-Lactam Test</p> <p>Neogen BetaStar® Advanced for Beta-Lactams Test</p>
<p>Charm® FLUSLBL Flunixin and Beta-Lactam Test</p>	<p>Charm® FLUSLBL Flunixin and Beta-Lactam Test</p>
<p>Charm® II Chloramphenicol Test</p>	<p>Charm® II Chloramphenicol Test</p>

PRESUMPTIVE POSITIVE TEST	SCREENING TEST POSITIVE (CONFIRMATION TEST) OPTIONS
Charm® II Sulfa Drug Test (Competitive Assay)	Charm® II Sulfa Drug Test (Competitive Assay)
Charm® II Tetracycline Drug Test (Competitive Assay)	Charm® II Tetracycline Drug Test (Competitive Assay) Charm® ROSA® Tetracycline SL Test (Dilution Protocol) Neogen BetaStar® Advanced for Tetracyclines Test
Charm® ROSA® Tetracycline SL Test (Dilution Protocol) ³	Charm® II Tetracycline Drug Test (Competitive Assay) Charm® ROSA® Tetracycline SL Test (Dilution Protocol) Neogen BetaStar® Advanced for Tetracyclines Test
Charm® ROSA® Sulf Test	Charm® II Sulfa Drug Test (Competitive Assay) Charm® ROSA® Sulf Test
Charm® TRIO Test ⁴	Charm® II Sulfa Drug Test (Competitive Assay) (Sulfa only) Charm® II Tetracycline Drug Test (Competitive Assay) (Tetracyclines only) Charm® 3 SL3 Beta Lactam Test (Beta Lactams only) Charm® ROSA® Tetracycline SL Test (Dilution Protocol) (Tetracyclines only) Charm® ROSA® Sulf Test (Sulfa only) Neogen BetaStar® Advanced for Beta-Lactams Test (Beta-Lactams only) Neogen BetaStar® Advanced for Tetracyclines Test (Tetracyclines only)
DSM Delvotest® P 5 Pack Test (Reader and Visual) Not a beta-lactam Specific Test. Refer to Footnote ¹ .	Charm® <i>B. stearothersophilus</i> Tablet Disk Assay Charm® II Tablet Beta-Lactam Test (Competitive Assay) Charm® II Tablet Beta-Lactam Test (Sequential Assay) Charm® SL Beta-Lactam Test Charm® 3 SL3 Beta-Lactam Test Charm® FLUSLBL Flunixin and Beta-Lactam Test DSM Delvotest® P 5 Pack Test (Reader and Visual) DSM Delvotest® P Mini Test IDEXX New Snap® Beta-Lactam Test Neogen BetaStar® Advanced for Beta-Lactams Test
DSM Delvotest® P Mini Test Not a beta-lactam Specific Test. Refer to Footnote ¹ .	Charm® <i>B. stearothersophilus</i> Tablet Disk Assay Charm® II Tablet Beta-Lactam Test (Competitive Assay) Charm® II Tablet Beta-Lactam Test (Sequential Assay) Charm® SL Beta-Lactam Test Charm® 3 SL3 Beta-Lactam Test Charm® FLUSLBL Flunixin and Beta-Lactam Test DSM Delvotest® P 5 Pack Test (Reader and Visual) DSM Delvotest® P Mini Test IDEXX New Snap® Beta-Lactam Test Neogen BetaStar® Advanced for Beta-Lactams Test

PRESUMPTIVE POSITIVE TEST	SCREENING TEST POSITIVE (CONFIRMATION TEST) OPTIONS
IDEXX New Snap® Beta-Lactam Test	Charm® II Tablet Beta-Lactam Test (Competitive Assay) Charm® II Tablet Beta-Lactam Test (Sequential Assay) Charm® SL Beta-Lactam Test Charm® 3 SL3 Beta-Lactam Test Charm® FLUSLBL Flunixin and Beta-Lactam Test IDEXX New Snap® Beta-Lactam Test Neogen BetaStar® Advanced for Beta-Lactams Test
Neogen BetaStar® Advanced for Beta-Lactams Test	Charm® 3 SL3 Beta-Lactam Test Neogen BetaStar® Advanced for Beta-Lactams Test
Neogen BetaStar® Advanced for Tetracyclines Test	Charm® II Tetracycline Drug Test (Competitive Assay) Charm® ROSA® Tetracycline SL Neogen BetaStar® Advanced for Tetracyclines Test

¹ This test is not specific for the detection of beta-lactams. While it is not validated to National Conference on Interstate Milk Shipments (NCIMS) standards for any drugs other than beta-lactams, a non-beta-lactam drug residue or other inhibitory substance may cause a positive test result. A negative or not found (NF) test result using one (1) of the beta-lactam specific tests to follow-up or confirm a positive result with this test kit will require re-testing the sample using the Charm® *B. stearothersophilus* Tablet Disk Assay, Delvotest® P 5 Pack Test or Delvotest® P Mini Test.

² The Charm® II Quantitative Assay detects all six (6) beta-lactam drugs as specified in M-a-85 however with the discontinuance of the Charm® II Cloxacillin Assay it may only be used to screen milk since to complete the determination of a positive result it was necessary to re-test the sample using the Charm II Sequential Assay and as necessary the Charm® II Cloxacillin Test (See FDA/NCIMS 2400 Form N-4 for Charm II Beta Lactam Tests, item 13). Without the Charm® II Cloxacillin Assay in effect it is not possible for the Charm® II Quantitative Assay to be completed and used as an equivalent test for other listed tests that also detect beta-lactam drugs.

³ For the purposes of equivalency only the use of the dilution protocol option for this test is recognized. Use of undiluted samples with these tests is for initial bulk milk tanker screening only and cannot be used for determining that the test is equivalent to another test.

⁴ The Charm® TRIO Test detects multiple drugs. This test may be used for screening only. If testing gives a presumptive (screen) positive further testing must be conducted using a test kit for the specific drug(s) identified. Follow PMO Appendix N protocols to verify the initial positive and if necessary conduct confirmation procedures as specified in the FDA/NCIMS 2400 form.

Table 2: Raw, Commingled Camel Milk

PRESUMPTIVE POSITIVE TEST	SCREENING TEST POSITIVE (CONFIRMATION TEST) OPTIONS
IDEXX New Snap® Beta-Lactam Test	New Snap® Beta-Lactam Test

Table 3: Raw, Commingled Goat Milk

PRESUMPTIVE POSITIVE TEST	SCREENING TEST POSITIVE (CONFIRMATION TEST) OPTIONS
Charm® <i>B. stearothersophilus</i> Tablet Disk Assay Not a beta-lactam Specific Test. Refer to Footnote ¹ .	Charm® <i>B. stearothersophilus</i> Tablet Disk Assay Charm® II Tablet Beta-Lactam Test (Sequential Assay) Charm® SL Beta-Lactam Test DSM Delvotest® P 5 Pack Test (Reader and Visual) DSM Delvotest® P Mini Test IDEXX New Snap® Beta-Lactam Test
Charm® SL Beta-Lactam Test	Charm® SL Beta-Lactam Test New Snap® Beta-Lactam Test
DSM Delvotest® P 5 Pack Test (Reader and Visual) Not a beta-lactam Specific Test. Refer to Footnote ¹ .	Charm® SL Beta-Lactam Test Delvotest® P 5 Pack Test (Reader and Visual) Delvotest® P Mini Test New Snap® Beta-Lactam Test
DSM Delvotest® P Mini Test Not a beta-lactam Specific Test. Refer to Footnote ¹ .	Charm® SL Beta Lactam Test Delvotest® P Mini Test

¹ This test is not specific for the detection of beta-lactams. While it is not validated to National Conference on Interstate Milk Shipments (NCIMS) standards for any drugs other than beta-lactams, a non-beta-lactam drug residue or other inhibitory substance may cause a positive test result. A negative or not found (NF) test result using one (1) of the beta-lactam specific tests to follow-up or confirm a positive result with this test kit will require re-testing the sample using the Charm® *B. stearothersophilus* Tablet Disk Assay, Delvotest® P 5 Pack Test or Delvotest® P Mini Test.

Table 4: Raw, Commingled Sheep Milk

PRESUMPTIVE POSITIVE TEST	SCREENING TEST POSITIVE (CONFIRMATION TEST) OPTIONS
Charm® SL Beta-Lactam Test	Charm® SL Beta-Lactam Test

Table 5: Raw, Commingled Water Buffalo Milk

PRESUMPTIVE POSITIVE TEST	SCREENING TEST POSITIVE (CONFIRMATION TEST) OPTIONS
Charm® SL Beta-Lactam Test	Charm® SL Beta-Lactam Test
DSM Delvotest® P Mini Test	Charm® SL Beta Lactam Test Delvotest® P Mini Test
Not a beta-lactam Specific Test. Refer to Footnote ¹ .	

¹ This test is not specific for the detection of beta-lactams. While it is not validated to National Conference on Interstate Milk Shipments (NCIMS) standards for any drugs other than beta-lactams, a non-beta-lactam drug residue or other inhibitory substance may cause a positive test result. A negative or not found (NF) test result using one (1) of the beta-lactam specific tests to follow-up or confirm a positive result with this test kit will require re-testing the sample using the Delvotest® P Mini Test.