

Beta Star Combo



ASSAY DESCRIPTION

BetaStar Combo is a rapid (5 minute) lateral flow assay for the visual detection of beta-lactam and tetracycline antibiotic residues in raw, commingled bovine milk. The assay detects beta-lactams (amoxicillin, cloxacillin, oxacillin, ampicillin, penicillin G, dicloxacillin, nafcillin, cephapirin, cefalonium, cefoperazone, cefazolin, cefquinome, and ceftiofur) and tetracyclines (chlortetracycline, oxytetracycline, and tetracycline) at levels well below the maximum residue limit (MRL) established by the European Union Commission.

MATERIALS AND METHODS

Milk collection raw, commingled bovine milk was obtained from a local dairy processing facility. The milk was kept at 2–8°C and used within 24 hours of collection. The milk was tested with the BetaStar Combo assay (Neogen item BKC002) according to the manufacturer's recommended procedure to ensure the detectable absence of beta-lactam and tetracycline residues.

ASSAY PROCEDURE

Drugged milk or negative milk (0.2 mL) was added to a BetaStar Combo reagent vial and quickly mixed by repeatedly tapping the vial until all reagent solids were in the solution. The vial then was placed into a heating block ($47.5 \pm 1^\circ\text{C}$) for 2 minutes. At the completion of the 2 minute incubation, a BetaStar Combo device was placed into the vial and incubated ($47.5 \pm 1^\circ\text{C}$) for 3 minutes. At the end of the 3 minute incubation, the device was removed from the vial and the signal intensities of the two antibiotic test lines were immediately compared to the intensity of the control line. If the signal intensity of a test line was less than or equal to the intensity of the control line, then the test was scored positive for the presence of the specific antibiotic. If the intensity of a test line was greater than the control line, the milk was scored negative for the presence of the antibiotic.