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UVM-Listeria Selective Enrichment Broth, modified

University of Vermont Medium

For the selective enrichment of Listeria in the two-stage procedure according to USDA-FSIS.

Mode of Action

The combination of various peptones, extracts, salts, and buffer substances enable very good growth of Listeria. The selectivity is due to the antiproliferative substances nalidixic acid and acriflavine hydrochloride.

The two-stage enrichment method has demonstrated its value especially with sample materials (meat and meat products) that are characterized by a high level of accompanying flora.

Typical Composition (g/litre)

UVM-I Broth

Tryptose 10.0; meat extract 5.0; yeast extract 5.0; sodium chloride 20.0; disodium hydrogenphosphate 12.0; potassium dihydrogen phosphate 1.35; esculin 1.0; nalidixic acid 20.0 mg; acriflavine hydrochloride 12.0 mg.

UVM-II Broth

Composition identical to UVM-I Broth. In addition, dissolve 13mg acriflavine hydrochloride (= 1 vial of UVM-II Supplement) in 10 ml sterile, distilled water and add to UVM-I Broth which has been previously sterilized and cooled below 50 °C.

Preparation

Suspend 54,4 g in 1 litre of demin. water and autoclave (15 min at 121 °C).

pH: 7.2 ± 0.2 at 25 °C.

The medium is clear to opalescent and yellowish-brown.

1st Enrichment Step: Inoculate the UVM-I broth with sample material (generally 25 g sample material per 225 ml broth) and incubate at 30 °C for 24 hours.

2st Enrichment Step: Inoculate 0.1 ml of UVM-I Broth into 10 ml of UVM-II broth and incubate at 30 °C for further 24 hours aerobically.

Approximately 0.1 ml of the UVM-II Broth is then smeared on the surface of a Listeria-selective agar (e.g. PALCAM Agar, Merck Cat. No. 1.11755. + 1.12122., or Oxford agar, Merck Cat. No.1.07004. + 1.07006.) in such a way to obtain well isolated single colonies.

Literature

DONNELLY, C., BAIGENT, G.: Method for Flow-Cytometric Detection of Listeria Monocytogenes in Milk. – **Appl. Environm. Microbiol.**; 689-695 (1986).

McCLAIN, D., LEE, W.H.: Development of USDA-FSIS Method for Isolation of Listeria monocytogenes from Raw Meat and Poultry. –**J. Assoc. Off. Anal. Chem., 71** (3); 660-664 (1988).

ROLLIER, I., et al.: Comparison of three plating media for enumeration and three media for isolation of Listeria spp. in fermented sausages. - **Arch.Lebensmittelhyg., 42**; 49-76 (1991).

Ordering Information

Product	Merck Cat. No.	Pack size
UVM-Listeria Selective Enrichment Broth, modified	1.10824.0500	500 g
UVM-II Supplement	1.04039.0001	1 vial

Quality control

Test strains	Growth
Listeria monocytogenes ATCC 19114	good / very good
Listeria monocytogenes NCTC 10527	good / very good
Listeria monocytogenes NCTC 7973	good / very good
Listeria ivanovii ATCC 19119	good / very good
Micrococcus luteus ATCC 9341	none / poor
Staphylococcus aureus ATCC 6538	none / poor
Lactobacillus plantarum ATCC 8014	none / fair
Bacillus cereus ATCC 11778	none