SIGMA-ALDRICH®
sigma-aldrich.com

3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

94485 UVM Listeria Selective Enrichment Broth, modified (University of Vermont Medium)

For the selective enrichment of *Listeria* species in a 2-step procedure according to USDA-FSIS.

Composition:

Ingredients	Grams/Litre
Tryptose	10.0
Meat extract	5.0
Yeast extract	5.0
Sodium chloride	20.0
Disodium hydrogen phosphate	12.0
Potassium dihydrogen phosphate	1.35
Aesculin	1.0
Nalidixic acid	0.02
Acriflavine hydrochloride	0.02
Final pH 7.2 +/- 0.2 at 25°C	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-8°C.

Appearance: Faintly beige coloured, homogeneous, free flowing powder.
Color and Clarity: Light brownish-yellow coloured, clear solution.

Directions:
Dissolve 54.4 g in 1 litre distilled water and autoclave at 121°C for 15 minutes. Add 5mg/l acriflavine hydrochloride for the secondary enrichment brorth.

Principle and Interpretation:
This medium is based on the original formulation described by Donnelly and Baigent (1), and was modified by McClain and Lee (2) which reduced the nalidixic acid concentration and increased the concentration of acriflavine hydrochloride. The two step procedure recommended by USDA-FSIS, results in a higher detection rate of *Listeria monocytogenes* from meat products and takes only 3-4 days (2). The FSIS method recommends the medium for the isolation and identification of *Listeria monocytogenes* from processed meat and poultry products (3). Generally the two-step enrichment method has shown to be excellent for sample materials with high level of accompanying microorganisms. The medium has also been recommended as a primary enrichment broth for recovery of heat-injured *Listeria monocytogenes* (4). May the high salt content has an inhibitory effect on DNA probe methods (5). LPM Agar (62653) is the recommended plating media after enrichment steps according USDA (2).
Peptones, meat extract and yest extract, provides nitrogenous, carbonaceous compounds and other essential growth nutrients. Sodium chloride is for the osmotic balance and the phosphate salts are buffer substances provide optimal pH for growth of *Listeria*. The selectivity is due to the antibiotics nalidixic acid and acriflavine hydrochloride.

Cultural characteristics after 24 hours at 30°C.

Organisms (ATCC)	Growth
Listeria monocytogenes (19114)	+++
Listeria monocytogenes (NCTC 10527)	+++
Listeria monocytogenes (NCTC 7973)	+++
Listeria ivanovii (19119)	+++
Micrococcus luteus (9341)	-/+
Staphylococcus aureus (6538-P)	-/+
Lactobacillus plantarum (8014)	-/+
Bacillus cereus (11778)	-

References:

1. C.W. Donnelly, G.J. Baigent, Appl. Environ. Microbiol., 52, 689-695 (1986)
2. D. McClain, W.H. Lee, Development of USDA-FSIS Method for Isolation of Listeria monocytogenes from Raw Meat and Poultry, Assoc. Off. Anal. Chem., 71, 660-664 (1988)
3. D. McLain, W.H. Lee, FSIS Method for the isolation and identification of Listeria monocytogenes from processed meat and poultry products. Laboratory Communications number 57. (1989)
4. J.S. Bailey, D.L. Fletcher, N.A. Cox, J. Food Prot., 53, 473-477 (1990)
5. L. Partis, L. Newton, J. Marby, R.J. Wells, Appl. Environ. Microbiol., 60, 1693-1694 (1994)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.