Technical Information

Listeria Enrichment Broth, Modified

Product Code: DM 1888

Application: - Listeria Enrichment Broth, Modified is used for selective enrichment of *Listeria* species.

Composition**

Ingredients	Gms / Litre
Tryptose	10.000
Yeast extract	5.000
Beef extract	5.000
Sodium chloride	20.000
Disodium hydrogen phosphate	9.600
Monopotassium hydrogen phosphate	1.350
Esculin	1.000
Nalidixic acid	0.020
Acriflavin hydrochloride (Trypaflavin)	0.012
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Listeria monocytogenes among the *Listeria* species is a zeronotic disease of human responsible for primary cause of meningitis, encephalitis or septicemia. The tropism of *L. monocytogenes* for the central nervous system leads to severe disease, often with high mortality or with neurologic disorders among survivors [(1)].

Listeria Enrichment Broth, Modified, a modification of the original formulation of Donnelly and Baigent, is used for the selective enrichment of *Listeria* species [(2)]. In this medium, the nalidixic acid concentration has been reduced to half i.e (from 40 mg/ l to 20 mg/l). Listeria Enrichment Broth, Modified is used for selective enrichment of *List eria* species from milk, milk products and other foods.

This medium contains tryptose, yeast extract and beef extract which provide essential nutrients like carbon and nitrogenous compounds including vitamins, amino acids and trace ingredients. Phosphates provide buffering action to the medium while sodium chloride maintains osmotic equilibrium. Nalidixic acid and acriflavin inhibit the growth of gram-negative and gram-positive organisms respectively [(3, 4, 5)] except *Listeria* species.

For enrichment, 25 gram or 25 ml sample is added to 225 ml medium in a stomacher bag. Homogenize the material if required. Incubation is carried out at 30°C for upto 7 days and the sample is subcultured on Listeria Selective Agar (DM1567) after 1, 2 and 7 days.

Methodology

Suspend 51.98 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely.
Dispense in tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Yellow coloured, clear to slightly opalescent solution having a bluish tinge

Reaction
Reaction of 5.2% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH Range 7.00-7.40

Cultural Response/Characteristics
DM 1088: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth
Escherichia coli ATCC 25922	>=10^3	inhibited
Listeria monocytogenes ATCC 19111	50-100	luxuriant
Listeria monocytogenes ATCC 19112	50-100	luxuriant
Listeria monocytogenes ATCC 19117	50-100	luxuriant
Listeria monocytogenes ATCC 19118	5-100	Luxuriant
Staphylococcus aureus ATCC 25923	>=10^3	inhibited

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
2. Donnelly C. W. and Baigent G. J., 1986, Appl. Environ. Microbiol., 52:689
3. Lovette J., Francis D. W. and Hunt J. M., 1987, J. Food Prot., 50:188
4. Lee W. H. and McClain D., 1986, Appl. Environ. Microbiol., 52:1215
5. McClain D. and Lee W. H., 1988, J. Assoc. Off. Anal. Chem., 71:660.

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