Listeria Selective Enrichment Broth

M1865

Intended use

Listeria Selective Enrichment Broth is used for the selective enrichment of *Listeria* species in accordance with FDA/IDF-FIL from food specimens.

Composition**

Ingredients	Gms / Litre
Casitose*	17.000
Soya Peptone	3.000
Glucose	2.500
Sodium chloride	5.000
Dipotassium hydrogen phosphate	2.500
Yeast extract	6.000
Acriflavine	0.010
Cycloheximide	0.050
Nalidixic acid	0.040
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters
* Equivalent to peptone from casein

Directions

Suspend 36.1 grams in 1000 ml purified/ distilled water. Heat if necessary to dissolve the medium completely. Dispense in tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Only *Listeria monocytogenes* among the *Listeria* species is reported to cause infection in humans. In human adults, *L. monocytogenes* primarily causes 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). This media is formulated as described in FDA, BAM Manual (2). Listeria Selective Enrichment Broth is used for selective enrichment of *Listeria* species from milk, milk products and other foods. This medium contains casitose, soya peptone which provide essential nutrients like carbon and nitrogenous compounds including vitamins, amino acids and trace ingredients. Glucose serves as an energy source. 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.

Type of specimen

Food and dairy samples.

Specimen Collection and Handling:

For Food and dairy samples follow appropriate techniques for handling specimens as per established guidelines (6,7,8). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. The medium is not differential, so further biochemical testing is required for identification between *Listeria* species.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

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 3.6 % w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

Cultural characteristics observed after an incubation at 30-35°C for upto 48 hours.

Organism	Inoculum (CFU)	Growth
Listeria inocua ATCC 33090 (00017*)	50-100	good
Listeria ivanovii ATCC 19119 (00018*)	50-100	luxuriant
Listeria monocytogenes ATCC 19111 (00020*)	50-100	luxuriant
Listeria monocytogenes ATCC 19112	50-100	luxuriant
Listeria monocytogenes ATCC 19117	50-100	luxuriant
Listeria monocytogenes ATCC 19118	50-100	luxuriant
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	50-100	fair

Key : (*) Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (9,10).

Reference

1.K. C. Carroll, M. A. Pfaller, M. L. Landry, A. J. McAdam, R. Patel, S. S. Richter, D. W. Warnock Manual of Clinical Microbiology, Twelfth Edition. American Society for Microbiology, Washington, D.C.

2.A.D. Hitchens (ret.)K. J. Chen , FDA, Bacteriological Analytical Manual, updated 2017. Chapter 10.

3..Lee W. H. and McClain D., 1986, Appl. Environ. Microbiol., 52:1215

4.Lovette J., Francis D. W. and Hunt J. M., 1987, J. Food Prot., 50:188

5.McClain D. and Lee W. H., 1988, J. Assoc. Off. Anal. Chem., 71:660.

6.Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

7.American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.

8. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
9. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
10. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

Revision : 04 / 2022