Condalab

Reference: 5023 **Technical Data Sheet**

Product: **LISTERIA ENRICHMENT BROTH FRASER ISO 11290 -1**

Specification

Broth for the selctive enrichment of *Listeria monocytogenes*

Presentation

	Packaging Details	Shelf Life	Storage
10 Prepared bottles Bottles 250 ml with: 225 ± 5 ml	1 box with 10 bottles 250 ml. White thermo resistant polypropylene cap.	12 months	2-25°C

Composition

Composition (g/l):

Peptone from meat	5.0000
Casein Peptone	5.0000
Yeast extract	5.0000
Meat extract	5.0000
Sodium chloride	20.000
Disodium phosphate	12.000
Monopotassium phosphate	1.3500
Esculin	1.0000
Lithium chloride	3.0000
Ammonium ironIII citrate	0.5000
Nalidixic ac	0.0200
Acriflavine	0.0250

Description /Technique

Description

This broth base for Listeria enrichment is according to the modifications made to the University of Vermont Medium (UVM) by Fraser and Sparber. This formulation has been adopted by the USDA-FSIS. The inclusion of lithium chloride inhibits the development of enterococci which can also hydrolyze esculin in the same way as Listeria. Any blackening of the medium produced by the reaction of esculetin due to esculin hydrolysis, with iron present in the medium, can be taken as presumptive Listeria. The ferric citrate also helps with the development of L. monocytogenes.
Fraser Broth is used according to EN ISO 11290-1 for the detection of Listeria.

Technique

For the inoculation of bottles, follow the standard laboratory method or the applicable norms, (Stab inoculation, loop inoculation, dilution banks , etc ...)
The use methodology is described in the EN ISO 11290.

Although some authors use Fraser Broth as the only enrichment medium, it has been verified than better results are obtained if it is employed as a secondary enrichment step, according to the following methodology:

- Inoculate the sample in a primary enrichment broth or Lovett Broth, and incubate for 18-24 hours.
- Take aliquots of 0,1 mL, and inoculate them in tubes with 10 mL of Fraser Broth and incubate for 24-28 hours.
- Tubes that blacken are considered presumptively positive and must be sub-cultured on isolation and confirmation solid media, such as Oxford Agar Base , Palcam Agar Base or Listeria Selective Agar according to Ottaviani & Agosti. Tubes that remain clear are considered negative and can be discarded or incubated for a further 24 hours if in doubt.

According to the standards used, or the samples to be analyzed, may be used different incubation times or temperatures.

Quality control

Physical/Chemical control

Color : Brown-yellowish pH: 7.2 ± 0.2 at 25°C

Microbiological control

Inoculate: Practical range 100 ± 20 CFU; Min. 50 CFU (Productivity)/ 10^4-10^6 (Selectivity).
Microbiological control according to ISO 11133:2014/ Adm 1:2018.

Aerobiosis. Incubation at 37 ± 1°C, reading after 24/44 ± 4h

Microorganism	Growth
Escherichia coli ATCC® 8739 (1)	Inhibited. Confirm in TSA at 37°C±1 reading 24 ± 3h
Enterococcus faecalis ATCC® 19433 (2)	Partial Inhibition. Confirm in TSA at 37°C±1 reading 24 ±
Listeria monocytogenes ATCC® 13932, WDCM 00021 + (1) + (2)	≥ 10 CFU. Blue-green coln. w. opaque halo (Ottaviani
Listeria monocytogenes ATCC® 35152, WDCM 00109 + (1) + (2)	≥ 10 CFU. Blue-green coln. w. opaque halo (Ottaviani

Sterility Control

Incubation 48 hours at 30-35°C and 48 hours at 20-25°C: NO GROWTH
Check at 7 days after incubation in same conditions

Bibliography

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· FRASER, J.A. & W.H. SPERBER (1988) Rapid detection of Listeria spp. In food and environmental samples by esculin hydrolysis. J. Food Prot. 51:762-765.

. ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.

· ISO 11290-1:2017 Standard. Microbiology of the food chain. Horizontal method for the detection and enumeration of Listeria monocytogenes and for Listeria spp.- Part 1: Detection Method

· ISO 11290-2:2017 Standard. Microbiology of the food chain. Horizontal method for the detection and enumeration of Listeria monocytogenes and for Listeria spp.- Part 2: Enumeration Method.

· McCLAIN, D. & W.H. LEE (1988) Development of a USDA-FSIS method for isolation of Listeria monocytogenes from raw meat and poultry. J.AOAC 71:660-664.

· VANDERZANT, C & D.F. SPLITTSTOESSER (1992) Compendium of methods for the microbiological examination of foods. APHA. Washington. DC.