

TECHNICAL DATA SHEET

Article No. 9650

Fraser Broth ISO, ready-to-use culture medium

SPECIFICATION

Prepared culture medium. Broth for the selective enrichment of *Listeria monocytogenes* according to ISO 11290.

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

COMPOSITION IN G/ L

Peptone from meat	5.00
Casein Peptone	5.00
Yeast extract	5.00
Meat extract	5.00
Sodium chloride	20.00
Disodium hydrogen phosphate	12.00
Potassium hydrogen phosphate	1.35
Esculin	1.00
Lithium chloride	3.00
Ammonium Ferric	0.50
Nalidixic acid	0.02
Acriflavine	0.025

PACKAGE DETAILS

9650-10x10ML

Volume 10 ± 0.2 ml
Tube size 16 x 113 mm
Packaging unit 20 tubes
1 box with 20 x 10 ml in 16 x 113 mm glass tubes, ink labelled, metal-Non injectable cap.

9650-10x225ML

Volume 225 ± 5 ml
Bottle size 250 ml
Packaging unit 10 bottles
1 box with 10 x 225 ml in 250-ml-bottles. White thermo resistant polypropylene cap.



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 esculin 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 that 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.

Note: The medium can show the possible presence of precipitates not affecting its correct performance.

MICROBIOLOGICAL CONTROL

Inoculate: Practical range 100 ± 20 CFU. min. 50 CFU (productivity)/ 10⁴-10⁶ (selectivity).

Microbiological control according to ISO 11133:2014/A1:2018.

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020.

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

Microorganism	Growth
<i>Escherichia coli</i> ATCC® 8739 (1)	Inhibited. Confirm in TSA at 37°C±1 reading 24 ± 3h
<i>Enterococcus faecalis</i> ATCC® 19433 (2)	Partial Inhibition. Confirm in TSA at 37°C±1 reading 24 ± 3h.
<i>Listeria monocytogenes</i> ATCC® 13932 + (1) + (2)	> 10 CFU. Blue-green colonies with opaque halo (Ottaviani Agosti)
<i>Listeria monocytogenes</i> ATCC® 35152 + (1) + (2)	> 10 CFU. Blue-green colonies with opaque halo (Ottaviani Agosti)

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.

REFERENCES

- ATLAS, R.M. (1993) Handbook of Microbiological Media. CRC Press. Boca Raton. Florida.
- 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.

STORAGE

2 – 25 °C

SHELF LIFE

12 months unopened from date of manufacture

updated: 05.06.2023

