Specification

Liquid culture medium used for the enrichment and detection of *Listeria spp.*, from food samples according to ISO standards

Formula *	in	a/L
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Meat peptone	5.00	
Casein peptone	5.00	Monopotassium phosphate1.35
Meat extract	5.00	Lithium chloride
Yeast extract	5.00	
Sodium chloride	20.00	Final pH 7,2 ±0,2 at 25 °C
Esculin	1.00	
di-Sodium		(*1) Equivalent to 12.0 g of disodium hydrogen
phosphate (Anhy.)	9.6 ^(*1)	phosphate dihydrate.

* Adjusted and /or supplemented as required to meet performance criteria

Directions

Dissolve 54.95 g of powder in 1 L of distilled water. Distribute 500 mL per flask and sterilize in the autoclave at 121°C for 15 minutes. Cool to 50°C. Aseptically add 1 vial of Listeria Fraser Selective Supplement for Secondary Enrichment (Ref. DSHB3049) to each flask. To obtain the Half Fraser Broth, add one vial of Ref. DSHB3050 Listeria Half Fraser Selective Supplement to 225 mL of Broth Base. Only acriflavine and nalidixic acid are reduced to half concentration. Note: Prepared medium (broth + supplement) must be kept away from light, since it promotes the production of acriflavine oxidised photocomplexes that repress Listeria growth.

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*.

Supplements available:

Listeria Fraser Selective Supplement (Ref. DSHB3049)		
Vial contents:		
Necessary amount for 500 mL of complete medium.		
Nalidixic acid, sodium salt		
Acriflavine	12,50 mg	
Ferric ammonium citrate	250,00 mg	
Distilled water (Solvent)		

Listeria Half Fraser Selective Supplement (Ref. DSHE Vial contents:	33050)
Necessary amount for 500 mL of complete medium.	
Nalidixic acid, sodium salt	5,00 mg
Acriflavine	
Ferric ammonium citrate	250,00 mg
Distilled water (Solvent)	-

Technique

Proceed according to ISO 11290 standards applicable to control food samples.

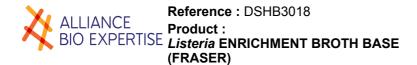
Quality control

Incubation temperature: 37°C ±1,0

Incubation time: 24 ± 2 h

Inoculum: Practical range 100 ± 20 CFU. Min. 50 CFU (Productivity) / 10⁴-10⁶ CFU (Selectivity) according to ISO 11133:2014/Amd 1:2018

Microorganism	Growth	Remarks
Escherichia coli ATCC [®] 8739 (1)	Inhibition	w. antibiotic / recovery in TSA
Enterococcus faecalis ATCC [®] 19433 (2)	Partial inhibition	w. antibiotic / <100 CFU in TSA
Listeria monocytogenes ATCC [®] 13932	Good	> 10 UFC Listeria in A. Listeria Ottaviani Agostini
Listeria monocytogenes ATCC® 35152	Good	> 10 UFC Listeria in A. Listeria Ottaviani Agostini
Listeria monocytogenes ATCC [®] 13932	Good	>10 Exp.7 ufc/ml (100 ufc/ml)



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

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 °C to 30 °C).