LISTERIA FRASER BROTH BASE ISO 11290-1

CAT Nº: 1182

Enrichment medium for the detection and isolation of *Listeria* in food and environmental samples

FORMULA IN g/l

Sodium Chloride	20.00	Lithium Chloride	3.00
Disodium Phosphate	12.00	Monopotassium Phosphate	1.35
Tryptone	5.00	Esculin	1.00
Meat Peptone	5.00	Acriflavine	0.025
Beef Extract	5.00	Nalidixic Acid	0.02
Yeast Extract	5.00		

Final pH 7.2 ± 0.2 at 25ºC

PREPARATION

Suspend 28.7 grams of the medium in 500 ml of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121ºC for 15 minutes. Cool to 45-50ºC and aseptically add one vial of Ferric Ammonium Citrate Supplement (Cat. 6050), previously reconstituted in 5 ml of sterile distilled water. Homogenize gently and dispense into sterile containers. The prepared medium should be stored at 2-8°C. The color is amber.

The dehydrated medium should be homogeneous, free-flowing and beige in color. If there are any physical changes, discard the medium.

FERRIC AMMONIUM CITRATE SUPPLEMENT (Cat. 6050)
(Composition: each vial for 500 ml)

Ferric Ammonium Citrate.....0.25 g

USES

LISTERIA FRASER BROTH BASE is used in the rapid detection of *Listeria* from food and environmental samples. The antibiotics are already included in the formula so it is only necessary to add the Ferric Ammonium Citrate Supplement.

The medium is used for the selective enrichment and enumeration of *Listeria monocytogenes* and other *Listeria* species in all food types, including milk and dairy products, and environmental samples. This formula is adheres to ISO 11290-1.

Tryptone, Meat peptone and Beef extract provide nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is the source of vitamins, particularlyof the B-group. Potassium phosphates act as a buffer system. All *Listeria* species hydrolyze esculin, which reacts with ferric ions producing a blackening of the medium. The addition of ferric ammonium citrate improves the growth of *Listeria monocytogenes.* Lithium chloride inhibits the growth of enterococci that can hydrolyze the esculin.

Preenrichment
Weigh 25 g (or 25 ml) of the sample and add 225 ml of Half Fraser Broth (Cat.1183). Homogenize and incubate at 30 ±1°C for 24± 3 hours.

Selective enrichment

Inoculate 0.1 ml of incubated Half Fraser Broth culture into 10 ml of Fraser Broth (Cat.1182).
Incubate at 35-37°C for 48 ± 3 hours in aerobic conditions.

Isolation
The tubes that present a blackening should be subcultured in Listeria Oxford Agar (Cat. 1133) or Listeria Palcam Agar (Cat. 1141), and Listeria Chromogenic Agar (Cat. 1345). The tubes that preserve the original color are considered negative.

Identification
Identify as *Listeria* spp. or *Listeria monocytogenes* using biochemical tests.

MICROBIOLOGICAL TEST

The following results were obtained from type cultures in the performance of the medium, with the respective supplements added (Cat: 6050), after incubation at a temperature of 35-37°C in aerobic conditions and observed after 48±3 hours.

Microorganisms	Growth
Listeria monocytogenes ATCC 19112	Good
Enterococcus faecalis ATCC 29212	Null

According ISO 11133 48h/37 ºC (Productivity and Selectivity) Fraser

Microorganisms	Inoculum (cfu	Selectivity Qualitative	Productivity Qualitative
Listeria monocytogenes ATCC 13932 + *Escherichia coli* ATCC 25922 + *Enterococccus faecalis* ATCC 29212	10^2		>10 on Chromogenic Agar Listeria Blue green colonies with opaque halo
Escherichia coli ATCC 8739	10^4/ 10^6	Inhibited (on TSA)	
Enterococcus faecalis ATCC 29212	10^2	<100(onTSA	

BIBLIOGRAPHY

Fraser. J.A and Sperber W.H (1988) McClain D. and Lee W.H (1988)
ISO NORMATIVE 11290-1 Horizontal method for the detection and enumeration of *Listeria monocytogenes* Part 1: Detection Method

ISO

STORAGE

Once opened keep powdered medium closed to avoid hydration.