

# Listeria Agar Base Oxford ISO

Cat. 1133

Selective medium for the detection of *Listeria monocytogenes*

## Practical information

Applications	Categories
Selective enumeration	Listeria
Detection	Listeria

Industry: Clinical / Food

Regulations: ISO 11290



## Principles and uses

Listeria Agar Base Oxford is a selective medium for *Listeria* according to the Oxford formula and it is recommended for the detection of *Listeria monocytogenes* from clinical samples and food products. It is used for a direct sample inoculation or for confirmation after using Listeria Enrichment Broth Base (Cat.1120).

All *Listeria* species hydrolyze the esculin to esculetin, which reacts with the iron ions producing black colonies and a blackening of the medium. Another advantage of this medium is that peptones and maize starch provides a rich nutrient base for growth, and the addition of Ferric ammonium citrate improves the growth of *L. monocytogenes*. Lithium chloride is an inhibiting agent, together with the other antibiotics from the supplement, which inhibit the growth of gram-negative bacteria and a large part of Gram-positive ones. Cycloheximide inhibits yeasts.

## Formula in g/L

Bacteriological agar	10	Esculin	1
Ferric ammonium citrate	0,5	Maize starch	1
Peptone	23	Sodium chloride	5
Lithium chloride	15		

## Preparation

Suspend 27,8 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 121 °C for 15 minutes. Cool to 45-50 °C and aseptically add one vial of Oxford Listeria Selective Supplement (Cat. 6003), previously reconstituted in 5 ml of sterile distilled water/ethanol. Homogenize gently and dispense into Petri dishes.

## Instructions for use

For clinical diagnosis, the type of sample is amniotic fluid.

- Inoculate on the surface making parallel striae with the handle or hyssop.
- Incubate in aerobic conditions at 37 °C for 48 hours.
- Reading and interpretation of the results.

For the detection and enumeration of *Listeria monocytogenes* and *Listeria* spp. according to ISO 11290:

- Weigh 25 g (or 25 ml) of the sample and add 225 ml of 1/2 Fraser Broth (Cat. 1183). Homogenize and incubate at 30 °C for 25±1 hours.
- Inoculate 0,1 ml of culture of the 1/2 Fraser Broth incubated (independently of the color) in 10 ml of Fraser Broth (Cat.1182). Incubate at 37 °C for 24±2 hours under aerobic conditions.
- The primary enrichment culture is inoculated on the Listeria Agar surface according to Ottaviani and Agosti and in another selective medium of the laboratory (Oxford), to obtain the well separated colonies.
- From the secondary enrichment culture, repeat the procedure, inoculate the surface of the Listeria Agar according to Ottaviani and Agosti (Cat. 1345) and the Oxford Agar. Incubate for a total of 48±2 h.
- Select presumptive colonies and carry out confirmatory tests for *L. monocytogenes* or *Listeria* spp.

Although typical colonies of *L. monocytogenes* are almost always visible after 24 hours of incubation, the incubation should be continued for a further 24 hours to obtain strains of slower growth.

## Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Amber	7,0±0,2

## Microbiological test

Incubation conditions: (37 °C / 48 h).

Inoculation conditions: Productivity quantitative (100±20. Min. 50 CFU) / Selectivity ( 10<sup>4</sup>-10<sup>6</sup> CFU).

Reference medium: TSA.

Microorganisms	Specification	Characteristic reaction
Listeria monocytogenes 4b ATCC 13932	Good growth (2) >50%	Greenish-gray colonies with black halo
Listeria monocytogenes ATCC 19112	Good growth (2) >50%	Greenish-gray colonies with black halo
Escherichia coli ATCC 25922	Total inhibition (0)	
Enterococcus faecalis ATCC 29212	Total inhibition (0)	

## Storage

Temp. Min.:2 °C

Temp. Max.:25 °C

## Bibliography

ISO NORMATIVE 11290-1 Microbiology of food and animal feeding stuffs -- Horizontal method for the detection and enumeration of Listeria monocytogenes -- Part 1: Detection method.

Curtis, G.D.W. Mitchell, R.G., King, A.F., Griffin E.J.A selective medium for the isolation of Listeria monocytogenes. Letters in Appl.Microbiol.8.95-98