



## L.mono Selective Agar Base (LM Selective Agar Base )

M1994

L.mono Selective Agar Base with added supplement is recommended for presumptive enumeration of *Listeria* species using membrane filtration technique.

### Composition\*\*

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Yeast extract	1.000
Sodium pyruvate	10.000
Liver extract	10.000
Sodium carbonate	1.000
Magnesium sulfate	7.400
Dextrose	1.000
Lithium chloride	5.000
Acridflavin	0.015
Agar	15.000
Final pH ( at 25°C)	7.4±0.1

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 60.42 grams in 950 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45- 50°C. Aseptically add 50ml of concentrated Egg yolk emulsion (FD045) and rehydrated contents of 1 vial of LM Selective Supplement (FD330). Mix well and pour into sterile Petri plates.

*Warning : Lithium chloride is harmful. Avoid bodily contact and inhalation of vapours. On contact with skin, wash with plenty of water immediately.*

### Principle And Interpretation

The genus *Listeria* constitutes *Listeria monocytogenes*, *Listeria ivanovii*, *Listeria seeligeri*, *Listeria welshimerii*, *Listeria innocua*, *Listeria grayi*, *Listeria murrayi* and *Listeria denitrificans*. Among these, *L. monocytogenes* and *L. ivanovii* are associated with diseases in humans. The pathogenicity of *L. ivanovii* is uncertain. *L. monocytogenes* is found in a wide variety of habitats, including the normal microflora of healthy ruminants, gastrointestinal tract of asymptomatic humans and environmental sources including river water, sewage, soil, silage, fertilizers and decaying vegetation (2).

LM Selective Agar Base is recommended for the direct presumptive enumeration of *Listeria* species especially *Listeria monocytogenes* from meat, poultry, dairy products and environmental samples using membrane filtration technique (1).

Casein enzymic hydrolysate and liver extract supplies nitrogenous compounds, amino acids and long chain peptides. Yeast extract supplies vitamins especially vitamin B required by the organisms. Dextrose is the carbohydrate and energy sources. Sodium chloride maintains the osmotic equilibrium of the medium. Sodium pyruvate serves as aa energy source and helps in the recovery of microorganisms. Sodium carbonate buffers the medium. Lithium chloride and Acridflavin are selective agents. Polymyxin B Sulphate, Nalidixic acid and Moxalactum sodium helps in inhibiting the accompanying microflora. Triphenyltetrazolium chloride is reduced by *Listeria* species resulting in pink to dark pink-orange coloured colonies.

Prepare the sample homogenate for the sample to be tested. Filter 1 ml of the homogenate through membrane filter. Place the membrane on plates of L.mono Selective Agar Base. Incubate the plates at 35-37°C for 18-48 hours. After incubation observe for pink to pink -red coloured colonies as presumptive *Listeria* species.

**Please refer disclaimer Overleaf.**

## Quality Control

### Appearance

Cream to yellow homogeneous free flowing powder

### Gelling

Firm, comparable with 1.5% Agar gel.

### Colour and Clarity of prepared medium

**Basal medium :** Yellow coloured clear to slightly opalescent gel.

**After addition of Egg yolk emulsion :** Yellow coloured opaque gel forms in Petri plates.

### Reaction

Reaction of 6.04% w/v aqueous solution at 25°C. pH : 7.4±0.1

### pH

7.30-7.50

### Cultural Response

M1994: Cultural characteristics observed on membrane filter with added Egg Yolk emulsion (FD045) and LM Selective Supplement (FD330), after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colony characteristics
<b>Cultural Response</b>				
<i>Escherichia coli</i> ATCC 25922	≥10 <sup>3</sup>	inhibited	0%	
<i>Listeria monocytogenes</i> ATCC 19111	50-100	luxuriant	≥50%	pink to dark pink-red
<i>Listeria monocytogenes</i> ATCC 19112	50-100	luxuriant	≥50%	pink to dark pink-red
<i>Listeria monocytogenes</i> ATCC 19117	50-100	luxuriant	≥50%	pink to dark-pink-red
<i>Listeria monocytogenes</i> ATCC 19118	50-100	luxuriant	≥50%	pink to dark pink-red
<i>Staphylococcus aureus</i> ATCC 25923	50-100	none-poor	≤10%	pale to dark orange

## Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

## Reference

- Entis, P. and I. Lerner. 2000. Twenty-four hour direct presumptive enumeration of *Listeria monocytogenes* in food and environmental samples using ISO-GRID method with LM-137 Agar. J. Food Prot. 63:354- 363
- Watkin J., Sleath K. P., J. Appl. Bacteriol., 50: 1-9, 1981.

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### Disclaimer :

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