

92302 **Listeria mono Confirmatory Agar, Base** (**Listeria monocytogenes Confirmatory Agar, Base**)

Listeria mono Confirmatory Agar is recommended for the selective and differential isolation of *Listeria monocytogenes* from clinical and food specimens.

Composition:

Ingredients	Grams/Litre
Special peptone	30.0
Yeast extract	6.0
Sodium chloride	5.0
Lithium chloride	10.0
Disodium hydrogen phosphate anhydrous	2.5
B.C. indicator	8.6
α -Methyl-D-mannoside	3.0
Agar	12.0
Final pH 7.2 +/- 0.2 at 25°C	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance: Purple colored, homogeneous, free flowing powder.
Color and Clarity: Purple colored, opalescent gel forms in petri plate.

Directions:

Suspend 38.5 g in 470 ml distilled water. Boil gently to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 min. Cool to 45-50°C. Aseptically add sterile contents of 1 vial of Listeria mono Enrichment Supplement II (Cat. No. 15895), and sterile rehydrated contents of Listeria mono Selective Supplement I (Cat. No. 92301), Listeria mono Selective Supplement II (Cat. No. 91603). 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:

Listeria monocytogenes can be differentiated by phospholipase C, an enzyme cleaves phosphatidylinositol, but after testing for that it is still possible that the microorganism could be *Listeria ivanovii*. So a second differentiation step is needed, *Listeria monocytogenes* can use α -methyl-D-mannoside as substrate, while *Listeria ivanovii* is not able to ferment this carbohydrate. Special peptone and yeast extract provide essential growth nutrients like vitamin, amino acids and other nitrogenous compounds. As buffering substance Disodium hydrogen phosphate is used and the osmotic balance is given by the sodium chloride. Agar is the solidifying agents. Nalidixic acid, ceftazidime, amphotericin B, polymyxin B in the supplements and lithium chloride in the medium inhibit bacterial or fungus growth. The B.C. indicator is used to detect the fermentation of α -methyl-D-mannoside. Phosphatidylinositol present in the supplement can be cleaved by *Listeria monocytogenes* and some strains of *Listeria ivanovii*, which possess phospholipase C. When phosphatidylinositol is cleaved it gives an opaque halo around the colonies.



Cultural characteristics after 24-48 hours at 35-37°C

Organisms (ATCC)	Growth	Colour of Colony	PIPLC activity*
<i>Listeria monocytogenes</i> (19112)	+++	yellow	+
<i>Listeria innocua</i> (33090)	+++	light purple	+
<i>Listeria ivanovii</i> (19119)	+++	yellow	-
<i>Listeria grayi</i> (19120)	+++	yellow	-
<i>Listeria seeligeri</i> (35967)	+++	light purple	-
<i>Listeria welshimeri</i> (35897)	+++	yellow	-
<i>Escherichia coli</i> (25922)	-	-	-
<i>Enterococcus faecalis</i> (29212)	-	-	-
<i>Pseudomonas aeruginosa</i> (27853)	-	-	-
<i>Candida albicans</i> (10231)	-	-	-

* = phosphatidylinositol phospholipase C activity

References:

1. F. Ottaviani, M. Ottaviani, M. Agosti, Esperienza su un agar selettivo e differenziale per *Listeria monocytogenes*, *Industrie Alimentari* 36, 1-3 (1997)
2. F. Ottaviani, M. Ottaviani, M. Agosti, Differential agar medium for *Listeria monocytogenes*, *Quinper Froid Symposium Proceedings*, p.6, A.D.R.I.A. Quinper, 16-18. June (1997)
3. Murray et al., *Manual of Clinical Microbiology*, 7th Edition, ASM Press, Washington D.C., p347 (1999)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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