

CM 20969 – LISTERIA CONFIRMATORY AGAR BASE

INTENDED USE

For cultivation of *Listeria* species.

PRODUCT SUMMARY AND EXPLANATION

Listeria monocytogenes is a gram-positive foodborne human pathogen responsible for serious infections in pregnant women that may ultimately result in abortion, stillbirth, birth of a child with neonatal listeriosis and meningitis or primary bacteremia in adults and juveniles. The pathogenicity of *Listeria ivanovii* for humans is uncertain. Since *L. monocytogenes* and *L. innocua* have similar biochemical properties, they cannot be differentiated on traditional media (PALCAM, Oxford).

L. mono Confirmatory Agar Base is a modification of the formulation of Ottoviani and Agosti (1,2) for the selective and differential isolation of *Listeria monocytogenes*.

COMPOSITION

Ingredients	Gms / Ltr
Special peptone	30.000
Yeast extract	6.000
Sodium chloride	5.000
B.C. indicator	8.600
Agar	12.000
Disodium hydrogen phosphate anhydrous	2.500
Lithium chloride	10.000
alpha-Methyl D-mannoside	3.000

PRINCIPLE

Special peptone and yeast extract serve as nitrogen sources and provide essential nutrients required for the growth of *Listeria*. #-Methyl-D-mannoside is the fermentable carbohydrate. Lithium chloride and added selective supplements (FD212 and FD213) inhibit accompanying microflora and thus enhance the selectivity of the medium for *Listeria* species. Sodium chloride maintains the osmotic equilibrium and disodium hydrogen phosphate buffers the medium.

Differentiation of *L. monocytogenes* from other *Listeria* species is based on phosphatidylinositol-specific phospholipase C (PIPLC) activity and fermentation of #-Methyl D-mannoside. Phospholipase C enzyme is an important virulence factor and is specific to only *L. monocytogenes* and *L. ivanovii*. Phospholipase C enzyme produced by *L. monocytogenes* and *L. ivanovii* hydrolyses the purified substrate added to the medium and results in the formation of an opaque halo around the colonies.

Differentiation between *L. monocytogenes* and *L. ivanovii* is achieved on the basis of alpha-Methyl D-mannoside utilization and PIPLC activity. *L. monocytogenes* ferments alpha-Methyl D-mannoside forming yellow coloured colonies with halo whereas *L. ivanovii* fails to ferment alpha-Methyl D-mannoside and therefore forms purple coloured colonies with halo. Other *Listeria* species do not exhibit PIPLC activity and therefore they form either purple or yellow coloured colonies without halo.

INSTRUCTION FOR USE

Dissolve 77.0 grams in 940 ml distilled water.

Heat to boiling to dissolve the medium completely.

Sterilize by autoclaving at 15 psi (121°C) for 15 minutes.

Aseptically add sterile rehydrated contents of 2 vials of LISTERIA SELECTIVE SUPPLEMENT A (TS 147) and 2 vials of LISTERIA SELECTIVE SUPPLEMENT B (TS 148).



For enrichment, add sterile contents of 2 vials of LISTERIA ENRICHMENT SUPPLEMENT (TS 149).
Cool to 45-50°C. Mix well and pour into sterile Petri plates.

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

QUALITY CONTROL SPECIFICATIONS:

Appearance of Powder : Beige to purple homogeneous free flowing powder.
Appearance of prepared medium : Purple coloured, opalescent gel forms in Petri plates.
pH (at 25°C) : 7.2±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum	Growth	Colour of the colony	Recovery	PIPLC Activity	Incubation Temperature	Incubation Period
Candida albicans	10231	≥1000	Inhibited	Colourless	0%	---	35-37°C	24-48 Hours
Escherichia coli	25922	≥1000	Inhibited	Colourless	0%	---	35-37°C	24-48 Hours
Enterococcus faecalis	29212	≥1000	Inhibited	Colourless	0%	---	35-37°C	24-48 Hours
Listeria innocua	33090	50-100	Luxuriant	Yellow	≥50%	Negative	35-37°C	24-48 Hours
Listeria grayi	19120	50-100	Luxuriant	Yellow	≥50%	Negative	35-37°C	24-48 Hours
Listeria ivanovii	19119	50-100	Luxuriant	Light purple	≥50%	positive, opaque halo around the colony exhibiting phosphatidylinositol specific phospholipase activity	35-37°C	24-48 Hours
Listeria seeligeri	35967	50-100	Luxuriant	Light purple	≥50%	Negative	35-37°C	24-48 Hours
Listeria welshimeri	43549	50-100	Luxuriant	Yellow	≥50%	Negative	35-37°C	24-48 Hours
Listeria monocytogenes	19112	50-100	Luxuriant	Yellow	≥50%	positive, opaque halo around the colony	35-37°C	24-48 Hours



						exhibiting phosphatidylinosit ol specific phospholipase activity		
Pseudomonas aeruginosa	27853	≥1000	Inhibited	Colourless	0%	---	35-37°C	24-48 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

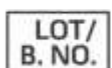
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 10-25°C and keep prepared medium at 2-8°C, protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration. Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

- Ottaviani F., Ottaviani M., and Agosti M. (1997 a), Industrie Alimentari 36, 1-3.
- Ottaviani F., Ottaviani M., and Agosti M. (1997 b), Quimper Froid Symposium Proceedings p.6, A.D.R.I.A. Quimper, France, 16-18 June 1997.

 Good Manufacturing Practices Certified	 Best Before	 Quantity	 Catalogue Number	 Manufacturer
 Temperature Unit	 Lot / Batch Number	 Consults Instructions for Use	 QR Code	

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*For Lab Use Only

