TM 2124 – CHROMOGENIC L. MONO DIFFERENTIAL AGAR BASE

INTENDED USE

For the selective and differential isolation, enumeration and identification of *Listeria monocytogenes* and *Listeria species* based on PCPLC activity.

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* nd *L. innocua* have similar biochemical properties, they cannot be differentiated on traditional media (PALCAM, Oxford). Chromogenic L.mono Differential Agar Base is based on for the selective and differential isolation of Listeria species on the basis of utilization of chromogenic substrate and lecithinase activity [Phosphotidylcholine phospholipase C (PCPLC)] .PI-PLC and PC-PLC, the major virulence factors, are only produced by pathogenic *L. monocytogenes* and *Listeria ivanovii.*

COMPOSITION

Ingredients	Gms / Ltr
Tryptone	6.000
Maltose	4.000
Magnesium sulphate	0.500
Chromogenic substrate	2.200
Peptone	15.000
Yeast Extract	10.000
Sodium pyruvate	2.000
Agar	14.000
Magnesium glycerophosphate	1.000
Lithium chloride	5.000
Sodium chloride	5.000
Disodium hydrogen phosphate anhydrous	2.500

PRINCIPLE

Peptone, tryptone, yeast extract and sodium pyruvate provide nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and essential growth nutrients . Maltose is the fermentable carbohydrate. Sodium chloride maintains osmotic equilibrium. Phosphate buffers the medium. Lithium chloride and added selective supplement inhibit accompanying microflora and allow the growth of Listeria species. *Listeria* species hydrolyse the chromogenic substrate and produces green coloured colonies. Lecithin solution helps in detecting PCPLC activity. Differentiation of *Listeria* species is based on phosphatidylcholine phospholipase C (PCPLC) activity. *L. monocytogenes* and *L. ivanovii* exhibits PCPLC activity which is seen as opaque halo around the colony.

INSTRUCTION FOR USE

- Dissolve 33.60 grams in 480 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 sterile contents of 1 vial of Lecithin solution and sterile rehydrated contents of Modified L. mono Selective Supplement.
- Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder

Appearance of prepared medium : Light amber coloured, opalescent gel forms in Petri plates.

pH (at 25°C) : 7.2 ± 0.2

INTERPRETATION

Cultural characteristics observed with added sterile L. mono Selective supplement I, L. mono Selective Supplement II and L. mono Enrichment supplement I after an incubation.

Microorganisms	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Color of the medium	PCPLC activity	Incubation Temperature	Incubation Period
Listeria innocua	33090	50-100	luxuriant	>=50%	Greenish blue	Negative	35-37°C	24 - 48 Hours
Listeria monocytogenes	19112	50-100	luxuriant	>=50%	Greenish blue	positive, opaque halo around the colony exhibiting phosphatidylinositol specific phospholipase activity	35-37°C	24 - 48 Hours
Listeria ivanovii	19119	50-100	luxuriant	>=50%	Greenish blue	positive, opaque halo around the colony exhibiting phosphatidylinositol specific phospholipase activity	35-37°C	24 - 48 Hours
Enterococcus faecalis	29212	>=10^3	Inhibited	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 2-8°C and 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.

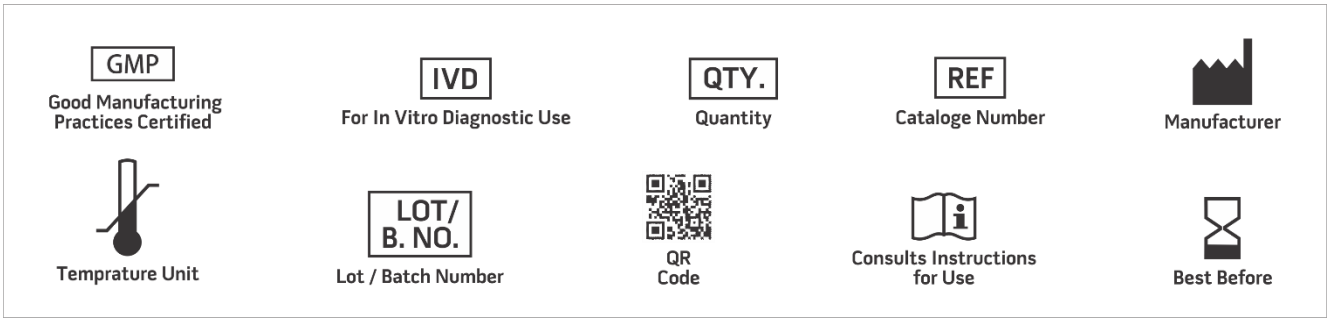
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

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

REFERENCES

1. Mengaud J, Braun-Breton C, Cossart P 1991. Identification of phosphatidylinositol-specific phospholipase C activity in Listeria monocytogenes : novel type of virulence factor. Mol. Microbiol. 5:367–372. doi:10.1111/j.1365-2958.1991
2. Painter J, Slutsker L. 2007. Listeriosis in humans, p 85–109. In Ryser ET, Marth EH (ed), Listeria, listeriosis, and food safety. Marcel Dekker, New York, NY.
3.Sang-Hyun Park, Pahn-Shick Chang, Sangryeol Ryu and Dong-Hyun Kang. Development of a Novel Selective and Differential Medium for the Isolation of Listeria monocytogenes. Applied and Environmental Microbiology 2014.



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

***For Lab Use Only**

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