Technical Information

L. mono Confirmatory MiVeg Agar Base

Product Code : VM2552

Application:- L. mono Confirmatory MiVeg Agar Base is recommended for the selective and differential isolation of *Listeria monocytogenes* from clinical and food specimens.

Composition

Ingredients	Gms / Litre
MiVeg special peptone	30.00
Yeast extract	6.00
Sodium chloride	5.00
Lithium chloride	10.00
Disodium hydrogen phosphate anhydrous	2.50
B.C. indicator	8.60
α-Methyl-D-mannoside	3.00
Agar	12.00
Final pH (at 25°C)	7.2 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

L. mono Confirmatory MiVeg Agar Base is prepared by using MiVeg special peptone instead of Peptone special thereby making the medium BSE/TSE risks free. *Listeria monocytogenes* is a gram-positive food borne 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.

Differentiation of *Listeria monocytogenes* from other *Listeria* species is based on phosphatidylinositol-specific phospholipase C (PIPLC) activity (1,2) and fermentation of alpha-Methyl D-mannoside. Phospholipase C enzyme is an important virulence factor and is specific to only *L. monocytogenes* and *L. ivanovii.* This enzyme hydrolyses the purified substrate (MS2227) added to the medium with opaque halo around the colonies. Further differentiation between *Listeria monocytogenes* and *Listeria ivanovii* is on the basis of alpha-Methyl D-mannoside utilization. *Listeria monocytogenes* ferments alpha-Methyl D-mannoside, giving a yellow halo around the colonies whereas *Listeria ivanovii* does not ferment alpha-Methyl D-mannoside and thus there is absence of yellow halo around the colonies.

MiVeg special peptone and yeast extract supplies essential nutrients required for the growth of *Listeria*. Alpha-Methyl-D-mannoside is the fermentable carbohydrate. Lithium chloride and added selective supplements (MS2212 and MS2213) inhibit accompanying microflora and thus enhance the selectivity of the medium for *Listeria* species. Sodium chloride maintains the osmotic equilibrium and disodium hydrogen phosphate act as a buffering system of the medium.

Methodology

Suspend 38.5 grams of powder media in 470 ml distilled water. Mix thoroughly and 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 rehydrated contents of 1 vial of L. mono Selective Supplement I (MS2212) and L. mono Selective Supplement II (MS2213) and sterile contents of 1 vial of L. mono Enrichment Supplement II (MS2227). Mix well and pour into sterile petri plates.

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

Quality Control

Physical Appearance

Pinkish beige coloured, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.2% Agar gel.

Colour and Clarity of prepared medium

Purple coloured, opalescent gel forms in petri plates.

Reaction

Reaction of 7.7% w/v aqueous solution is pH 7.2 ± 0.2 at 25°C.

pH Range

7.0-7.4

Cultural Response/Characteristics

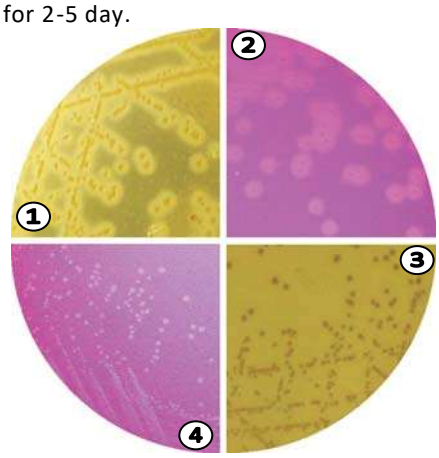
Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours with added supplements, L. mono Selective supplement I (MS2212), L. mono Selective Supplement II (MS2213) and L. mono Enrichment Supplement II (MS2227).

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colur of colony	PIPLC activity*
Candida albicans (10231)	10^2-10^3	inhibited	0%	_	_
Enterococcus faecalis (29212)	10^2-10^3	inhibited	0%	_	_
Escherichia coli (25922)	10^2-10^3	inhibited	0%	_	_
Listeria innocua (33090)	10^2-10^3	luxuriant	>50%	yellow	_
Listeria grayi (19120)	10^2-10^3	luxuriant	>50%	yellow	_
Listeria ivanovii (19119)	10^2-10^3	luxuriant	>50%	light purple	+
Listeria monocytogenes (19112)	10^2-10^3	luxuriant	>50%	yellow	+
Listeria seeligeri	10^2-10^3	luxuriant	>50%	light purple	_
Listeria welshimeri	10^2-10^3	luxuriant	>50%	yellow	_

Key : PIPLC activity : * = opaque halo around the colony exhibiting phosphateidylinositol – specific phospholipase C activity.

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 day.



VM2552 L. mono Confirmatory MiVeg Agar Base

1. *Listeria monocytogenes*
2. *Listeria ivanovii*
3. *Listeria innocua*
4. *Listeria seeligeri*

Further Reading

1. Ottaviani F., Ottaviani M., and Agosti M. (1997 a), Industrie Alimentari 36, 1-3.
2. 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.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate.
- **Central Drug House Pvt. Ltd.** reserves the right to make changes to specifications and information related to the products at any time.
- Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing of diagnostic reagents extra.
- Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for in fingement of any patents. Do not use the products if it fails to meet specificatons for identity and performens parameters.