Listeria Lecithinase Agar Base

M1457

For identification of *Listeria monocytogenes* based on induction of lecithinase activity in presence of activated charcoal.

Composition**

Ingredients	Gms / Litre
Calf brain, infusion solids	12.500
Beef heart, infusion solids	5.000
Proteose peptone	10.000
Dextrose	2.000
Sodium chloride	5.000
Disodium phosphate	2.500
Charcoal activated	2.000
Agar	15.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 54.0 grams in 950 ml distilled water. Heat to boiling to dissolve the medium. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and aseptically add 50 ml concentrated Egg Yolk Emulsion (FD045). If desired, selectivity of the medium can be enhanced by aseptically adding rehydrated contents of one vial of Fraser Enrichment Supplement (FD065). Mix well and pour into sterile Petri plates.

Principle And Interpretation

Listeria Lecithinase Agar Base is used for identification of Listeria monocytogenes based on induction of lecithinase activity. Differentiation between *L.monocytogenes* and other *Listeria* species is often difficult because of similar morphological and biochemical properties. *Listeria monocytogenes* strains show specific induction of lecithinase activity in presence of activated charcoal and Egg Yolk Emulsion (FD045). The activated charcoal provides a black background that facilitates easy observation of opaque zone around lecithinase positive colonies. Lecithinase activity in Listeria monocytogenes is indicated by a opaque halo around the colonies. Fraser Enrichment Supplement (FD065) when added, nalidixic acid and acriflavin inhibits the growth of gram-negative and gram-positive organisms respectively (1, 2, 3) except *Listeria* species.

This medium contains calf brain infusion,beef heart infusion and proteose peptone which provides essential nutrients like carbon and nitrogenous compounds including vitamins, aminoacids and trace ingredients. Phosphate provides buffering action to the medium while sodium chloride maintains osmotic equilibrium.

Quality Control

Appearance
Grey to black homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Black coloured opaque gel forms in Petri plates

Reaction
Reaction of 5.4% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH
7.00-7.40

Cultural Response
M1457: Cultural characteristics observed with added Egg yolk emulsion (FD045) and Fraser Enrichment Supplement(FD065) after an incubation at 35-37°C for 24-36 hours.

Organism	Growth	Lecithinase activity
Cultural Response		
Escherichia coli ATCC 25922	inhibited	
Listeria grayi ATCC 19120	luxuriant	Negative,no opaque zone around the colony
Listeria innocua ATCC 33090	luxuriant	Negative,no opaque zone around the colony
Listeria ivanovii ATCC 19119	luxuriant	Positive,opaque zone around the colony
Listeria monocytogenes ATCC 19112	luxuriant	Positive,opaque zone around the colony
Listeria seeligeri ATCC 35967	luxuriant	Negative,no opaque zone around the colony
L. welshimeri ATCC 43549	luxuriant	Negative,no opaque zone around the colony

Storage and Shelf Life

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

Reference

1.Lovette J., Francis D.W. and Hunt J.M. (1987), J. Food Prot., 50:188.
2.Lee W.K. and McClain D.(1986), Appl. Environ. Microbiol., 52:1215.
3.McClain D. and Lee W.H. (1988) J. Assoc. Off. Anal, Chem., 71:660.

Revision : 1 / 2011