Semisolid IMRV Medium Base

M1427

Semisolid IMRV Medium Base is used for the simultaneous enrichment as well as isolation of motile *Salmonella* from other competitive organisms

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	13.500
Peptic digest of animal tissue	13.500
Saccharose	7.500
Lactose	0.500
Ammonium ferric sulphate	0.200
Sodium thiosulphate	0.800
Potassium dihydrogen phosphate	1.470
Magnesium chloride, anhydrous	10.910
Malachite green	0.037
Bromo cresol purple	0.080
Agar	2.700
Final pH (at 25°C)	5.5±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 51.2 grams in 1000 ml distilled water. Heat with stirring to boiling to dissolve the medium completely. DO NOT AUTOCLAVE / DO NOT OVERHEAT. Cool to 45°C and aseptically add rehydrated contents of 1 vial of IMRV/RV Selective Supplement (FD193). Mix well and pour into sterile Petri plates.

Note: The motility of Salmonellas can be drastically reduced when the agar surface becomes too dry. Hence the plates should be well dried before use. If visible moisture occurs on the lid of the plates or the surface of agar, it must be removed. While incubation, incubate the plates aerobically in an upright position for no longer than 24 hours at 42°C.

Principle And Interpretation

Semisolid IMRV Medium Base is used for simultaneous enrichment and isolation of motile *Salmonella* from food and environmental samples. It is diagnostic medium distinguishing motile *Salmonella* from non motile forms (1, 2). Also *Salmonella* can be identified from a mixed culture of different gram negative organisms. These media detects more *Salmonella* positive samples than the routinely used enrichment procedures (3,4,5). Addition of Novobiocin as a supplement and malachite green in the medium selectively inhibits most gram positive organisms. *Salmonella* generally survives a little high osmotic pressure (due to MgCl2 in the medium), grows at slightly low pH and are resistant to malachite green compared to other bacteria. Saccharose, lactose and bromocresol purple differentiates *Salmonella* from lactose and sucrose fermenting organisms. Ammonium ferric sulphate and sodium thiosulphate are indicators of H2S production. Thiosulphate is reduced to hydrogen sulphide by several species of bacteria and H2S combines with ferric ions to produce the insoluble black precipitate of ferrous sulphide as indicated by formation of grayish black colour at the centre of the colony.

Casein enzymic hydrolysate and peptic digest of animal tissue, provide the nitrogenous and carbonaceous substances and other essential growth nutrients. Phosphate gives good buffering capacity to the medium. Addition of novobiocin as a supplement (FD193) and malachite green in the medium selectively inhibits most gram-positive organisms. Sodium chloride maintains the osmotic equilibrium of the media. All these factors make the medium selective for the isolation of *Salmonella* . This medium enriches *Salmonella* and the semi-solid nature of the medium helps to differentiate the motile *Salmonella*

from non-motile ones.

Quality Control

Appearance
Light yellow to blue homogeneous free flowing powder

Gelling
Semisolid, comparable with 0.27% Agar gel.

Colour and Clarity of prepared medium
Dark green coloured clear semisolid gel forms in Petri plates

Reaction
Reaction of 5.12 % w/v aqueous solution at 25°C. pH : 5.5±0.2

pH
5.30-5.70

Cultural Response
M1427: Cultural characteristics observed after an incubation at 42-43°C for 18-24 hours with added IMRV/RV Selective Supplement (FD193), when one drop of culture is inoculated in the centre of the medium plate.(Motility is checked by inoculating a drop of culture in the centre of the medium plate).

Organism	Inoculum (CFU)	Growth	Motility
Citrobacter freundii ATCC 8090	>=10^3	inhibited	
Pseudomonas aeruginosa ATCC 9027	>=10^3	inhibited	
Salmonella Typhimurium ATCC 14028	50-100	good	positive, development of purple halos of growth originating from the inoculation spot.

Storage and Shelf Life
Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference
1. Vander Zee H, and Van Netten P. 1992 Proc. Symp. “Salmonella and Salmonellosis”. Ploufragan ; 69.
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