Leifsons Deoxycholate Agar, Modified. M1138

Leifsons Deoxycholate Agar, Modified is recommended for selective isolation and differentiation of *Salmonella* and *Shigella* species.

Composition***

Ingredients	Gms / Litre
Peptic digest of animal tissue	5.000
Beef extract	5.000
Lactose	10.000
Sodium citrate	5.000
Ferric citrate	1.000
Sodium deoxycholate	2.500
Sodium thiosulphate	5.000
Neutral red	0.025
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 48.52 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE OR REMELT. Excessive heating is detrimental. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Leifson Deoxycholate Agar, was originally described by Leifson (1) and further modified by Hynes (2) for selective isolation and differentiation of *Salmonella* and *Shigella* species. This medium is the modification of Leifson Agar for the isolation and maximum recovery of intestinal pathogens. Leifson Deoxycholate Agar, Modified is a less selective medium and is used for direct sampling of faeces

Peptic digest of animal tissue and beef extract provide essential growth nutrients. Sodium citrate and sodium deoxycholate inhibit all gram-positive bacteria and coliforms but allow the gram-negative bacilli to grow. Lactose is added to the medium to allow differentiation of lactose fermenting bacteria such as, *Escherichia coli* from non-lactose fermenting species, such as *Salmonella, Proteus* and *Shigella* . Lactose fermenting strains grow as red to pink colonies because of absorption of neutral red indicator. Nonfermenting species grow as colourless colonies with . black centers due to production of H2S as against Shigella which does not produce H2S (3) . Ferric citrate and sodium thiosulphate help in H2S determination.

Quality Control

Appearance

Light yellow to pink homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Reddish orange coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 4.85% w/v aqueous solution at 25°C. pH : 7.0±0.2

Cultural Response

M1138: Cultural characteristics observed after an incubation at 35-37°C for 28-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony	H2S	
Enterococcus faecalis ATCC 29212	>=10^3	inhibited	0%			
Escherichia coli ATCC 25922	50-100	none-poor	<=10%	pink with zone of precipitation	negative reaction	
Salmonella Typhi ATCC 6539	50-100	good-luxuriant	>=50%	colourless	positive reaction black centred colonies	
Salmonella Typhimurium ATCC 14028	50-100	good-luxuriant	>=50%	colourless	positive reaction, black centered	colonies

Salmonella Enteritidis ATCC 13076	50-100	good-luxuriant	>=50%	Colourless	positive reaction, black centered	colonies
Shigella sonnei ATCC 25931	50-100	good-luxuriant	>=50%	Colourless		

Reference

1.Leifson E., 1935, J. Pathol. Bacteriol., 40:581.
2.Hynes M., 1942, J. Pathol. Bacteriol., 40:581.
3.MacFaddin J., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.

Storage and Shelf Life

Store below 30°C and the prepared medium at 2 - 8°C. Use before expiry date on the label.