



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
Peptone	5.000
Meat extract B #	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

Equivalent to Beef extract

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. Cool to 45-50°C. 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

Peptone and meat extract B 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. 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

pH

6.80-7.20

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
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Cultural Response

<i>Enterococcus faecalis</i> ATCC 29212	$\geq 10^3$	inhibited	0%	
<i>Escherichia coli</i> ATCC 25922	50-100	none-poor	$\leq 10\%$	pink with zone of precipitation
<i>Salmonella Typhi</i> ATCC 6539	50-100	good-luxuriant	$\geq 50\%$	colourless - tan
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	good-luxuriant	$\geq 50\%$	colourless , black centred colonies
<i>Salmonella Enteritidis</i> ATCC 13076	50-100	good-luxuriant	$\geq 50\%$	colourless, black centered colonies
<i>Shigella sonnei</i> ATCC 25931	50-100	good-luxuriant	$\geq 50\%$	Colourless

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. 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.

Revision : 02/ 2015

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