Leifson's Deoxycholate HiVeg™ Agar, Modified

MV1138

Intended Use:

Recommended for selective isolation and differentiation of *Salmonella* and *Shigella* species.

Composition**

Ingredients	g / L
HiVeg™ peptone	5.000
HiVeg™ extract	5.000
Lactose	10.000
Sodium citrate	5.000
Ferric citrate	1.000
Synthetic detergent No. III	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 purified/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. Leifson's Deoxycholate HiVeg™ Agar, Modified is prepared by using vegetable peptones in place of animal based peptones which make the media free of BSE/TSE risks. HiVeg™ peptone and HiVeg™ extract provide nitrogeneous and carbonaceous compounds, long chain amino acids and other essential growth nutrients. Sodium citrate and Synthetic detergent No. III 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 H_2S determination.

Type of specimen

Food and dairy samples

Specimen Collection and Handling:

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (3,4,5). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. This medium is general purpose medium and may not support the growth of fastidious organisms.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored atex recommended temperature.

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

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

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Enterococcus faecalis ATCC 29212 (00087*)	>=10^4	inhibited	0%	
Escherichia coli ATCC 25922 (00013*)	50-100	none-poor	<=10%	pink with zone of precipitation
Salmonella Typhi ATCC 6539	50-100	good-luxuriant	>=50%	colourless - tan
Salmonella Typhimurium ATCC 14028 (00031*)	50-100	good-luxuriant	>=50%	colourless , black centred colonies
Salmonella Enteritidis ATCC 13076 (00030*)	50-100	good-luxuriant	>=50%	colourless, black centered colonies
Shigella sonnei ATCC 25931	50-100	good-luxuriant	>=50%	

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (6,7).

Reference

1. Leifson E., 1935, J. Pathol. Bacteriol., 40:581.
2. Hynes M., 1942, J. Pathol. Bacteriol., 40:581.
3. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
4. Downes F. P. and Ito K., (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed.,American Public Health Association, Washington, D.C.
5. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
6. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
7. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015)Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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