Deoxycholate Citrate Agar Medium

M065S

Desoxycholate citarte agar meidum is recommended for Isolation of *Shigella* species from food samples in accordance with IS 5887(Part 7):1999.

Composition**

Ingredients	Gms / Litre
Meat extract	4.550
Proteose peptone	4.550
Lactose	9.090
Neutral Red	0.023
Sodium citrate	7.720
Sodium thiosulphate	7.720
Ferric Ammonium citrate	0.900
Sodium Desoxycholate	0.450
Agar	20.450
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 55.45 grams of medium in 1000 ml of distilled water. Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Avoid excessive heating as it is detrimental to the medium. Dry the surface medium before incubation.

Principle And Interpretation

The described selective medium in accordance with IS 5887 (1999) Part 7(1) and is recommended for plating the growth obtained from Selenite F broth of Tetrathionate broth.

Sodium deoxycholate is inhibitory to gram positive bacteria. Most intestinal flora gets inhibited due to citrate in the medium. Coliforms produce pink colored colonies whereas non lactose fomenters appear as colourless colonies. The organisms known to reduce ferric ammonium citrate to iron sulphide are indicated by blackening of the central position of colony.

Meat Extract and Proteose peptone serves as a source of carbon and nitrogen. Lactose is the fermentable carbohydrate and neutral red acts as pH indicator helping in differentiaion of enteric bacilli as lactose ferments produce red colonies while non-lactose fermentors produce colourless colonies.

In general all foods which have received dry heat treatment, namely desiccation, dehydration or powdering shall be enriched in a non-inhibitory medium such as nutrient broth. Raw foods and finished products which are suspected to be grossly contaminated after processing does not require pre-enrichment. Approximately 200 ml Selenite F broth per approximately 25 g of one portion of sample and 200 ml of tetrathionate broth per approximately 5 g of another portion of the sample is blended in sterile blender jar for 2 minutes or macerated with sterile sand in a sterile mortar. Incubation is carried out at 370C for 24 hours. Raw meat samples should be incubated at 430C, rather than 370C. Further, it can be plated on Deoxycholate Agar (M065S)

Quality Control

Appearance
Light yellow to pinkish beige coloured homogeneous free flowing powder

Gelling
Firm, comparable with 2.045% Agar gel.

Colour and Clarity of prepared medium
Reddish orange coloured, clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 5.55% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

M065S: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony	H2S
Cultural Response					
Enterococcus faecalis ATCC 29212	50-100	inhibited	0%		
Escherichia coli ATCC 25922	50-100	poor	20-30%	pink with bile precipitate	negative reaction
Salmonella Enteritidis ATCC 13076	50-100	good-luxuriant	>=50%	colourless	positive reaction,black centered colonies
Salmonella Typhimurium ATCC 14028	50-100	good-luxuriant	>=50%	colourless	positive reaction, black centered colonies
Shigella flexneri ATCC 12022	50-100	good	40-50%	colourless	
Shigella sonneii ATCC 29930	50-100	good	40-50%	colourless	negative reaction
Escherichia coli ATCC 8739	50-100	poor	20-30%	pink with bile precipitate	negative reaction
Escherichia coli NCTC 9002	50-100	poor	20-30%	pink with bile precipitate	negative reaction

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.Bureau of Indian standard, IS 5887 (Part7) 1999. Methods for detection of bacteria responsible for food poisoning.

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