Technical Data

Salmonella Differential Agar, Modified (Twin pack) M1082

Intended Use:

Recommended for identification and differentiation of *Salmonella* species from members of Enterobacteriaceae, especially *Proteus* species.

Composition**

Ingredients	Gms / Litre
Part A	-
Peptone, special	8.000
Yeast extract	3.000
Sodium deoxycholate	1.000
Sodium chloride	5.000
B. C. Indicator	2.000
Agar	12.000
Part B	-
Propylene glycol	10.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 10 grams of fluid Part B in 1000 ml distilled water. Add 31 grams of Part A. Mix well and heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to 45-50°C. Mix well before pouring into sterile Petri plates.

Principle And Interpretation

Salmonella Differential Agar is slight modification of original formulation of Rambach (1) used for differentiation of *Salmonella* species from *Proteus* species and other enteric bacteria. Production of acid from propylene glycol is a novel characteristic of *Salmonella* species and is utilized in these media. Many of the media such as SS Agar, XLD Agar recommended for the identification and differentiation of *Salmonella* species (2) are based on lactose fermentation and hydrogen sulphide production.

Peptone special and yeast extract supports the luxuriant growth of bacteria by supplying nitrogen and carbon compounds, long chain amino acids, vitamins and other essential nutrients. Sodium deoxycholate inhibits gram-positive organisms rendering the medium selective for enteric microorganisms. The BC indicator turns pink in presence of acid produced from propylene glycol. Lactose fermenting ability is determined by using an indicator, which can detect the presence of enzyme ß-galactosidase. Lactose fermenting (ß-galactosidase producing) bacteria yield blue violet coloured colony (3). Salmonellae produce acid from propylene glycol and on combining with the pH indicator gives typical pink red colonies. Other enteric gram-negative bacteria form colourless colonies. *Salmonella* Typhimurium and *Salmonella* Enteritidis produce pink to red colonies. Specimen should be enriched in an appropriate selective enrichment broth. This enriched culture is then inoculated on Salmonella Differential Agar, Modified and incubated at 35-37°C for 24-48 hours.

Type of specimen

Clinical: faeces; Food samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (2,3,4).
For food samples, follow appropriate techniques for sample collection and processing as per guidelines (1,6,8,9).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use. 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 clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

Quality Control

Appearance
Part A : Light yellow to light pink homogeneous free flowing powder Part B: Colourless viscous solution

Gelling
Firm, comparable with 1.2% Agar gel.

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

Reaction
Reaction of 3.1% w/v aqueous solution of Part A at 25°C. pH : 7.3±0.2

pH
7.10-7.50

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Escherichia coli ATCC 25922	50-100	luxuriant	>=50%	blue-green
Klebsiella pneumoniae ATCC 13883	50-100	luxuriant	>=50%	blue-violet
Proteus mirabilis ATCC 25933	50-100	luxuriant	>=50%	colourless
Salmonella Typhimurium ATCC 14028	50-100	luxuriant	>=50%	pink-red
Salmonella Enteritidis ATCC 13076	50-100	luxuriant	>=50%	pink-red
Salmonella Typhi ATCC 6539	50-100	luxuriant	>=50%	colourless
Shigella flexneri ATCC 12022	50-100	luxuriant	>=50%	colourless
Staphylococcus aureus ATCC 25923	>=10^4	inhibited	0%	

Reference

1.Rambach A., 1990, Appl Environ. Microbiol., 56:301.
2.Eaton A.D., Clesceri L.S., Rice E. W. and Greenberg A W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
3.Greenwald R., Henderson R.W. and Yappaw S., 1991, J. Clin. Microbiol. 29:2354.

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