Technical Data

Salmonella Differential HiCynth™ Agar (Twin Pack) (RajHans HiCynth™ Medium) MCD1078

Intended Use:

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

Composition**

Ingredients	Gms / Litre
Part A	-
HiCynth™ Peptone No.2*	8.000
HiCynth™ Peptone No.5*	2.900
Synthetic detergent No. I	0.100
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

* Chemically defined peptones

Directions

Suspend 10 grams of fluid Part B in 1000 ml purified / distilled water. Add 25 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 and pour into sterile Petri plates.

Principle And Interpretation

Salmonella Differential Agar is slight modification of original formulation of Rambach (5) 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 HiCynth™ Agar, XLD HiCynth™ Agar recommended for the identification and differentiation of *Salmonella* species (1) are based on lactose fermentation and hydrogen sulphide production. Salmonella Differential HiCynth™ Agar is prepared by replacing animal and vegetable peptones with chemically defined peptones to avoid BSE/TSE risks associated with animal peptones.

HiCynth™ Peptone No.2 and HiCynth™ Peptone No.5 provides carbonaceous, nitrogenous compounds, long chain amino acids, vitamins and other growth factors supports the luxuriant growth of bacteria. Synthetic detergent No. I 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 (2). *Salmonella* 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 and incubated at 35-37°C for 24-48 hours.

Type of specimen

Clinical: faeces, urine; Water samples and Food samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (3,4).

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (6).

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (1).

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

1. The medium is selective for *Salmonella* and may not support the growth of other microorganisms.
2. Most of the *Salmonella* strains shows pink-red colonies except few which may show colourless colonies.
3. Due to nutritional variations, some strains may show poor growth.
4. Final confirmation of suspected colonies must be carried out by serological and biochemical tests.

Performance and Evaluation

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

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 2.5% 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
Proteus mirabilis ATCC 25933	50-100	luxuriant	>=50%	colourless
Salmonella Typhimurium *ATCC 14028 (00031*)*	50-100	luxuriant	>=50%	pink-red
Salmonella Enteritidis *ATCC 13076 (00030*)*	50-100	luxuriant	>=50%	pink-red
Escherichia coli ATCC 25922 (00013)*	50-100	luxuriant	>=50%	blue-green
Klebsiella pneumoniae ATCC 13883 (00097)*	50-100	luxuriant	>=50%	blue-violet
Salmonella Typhi *ATCC 6539*	50-100	luxuriant	>=50%	colourless
Shigella flexneri ATCC 12022 (00126)*	50-100	luxuriant	>=50%	colourless
Staphylococcus aureus Subsp. aureus ATCC 25923 (00034)*	$>=10^4$	inhibited	0%	

Key : (*) Corresponding WDCM numbers

Storage and Shelf Life

Store dehydrated powder and prepared medium on receipt at 2-8°C. Use before expiry period 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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (3,4).

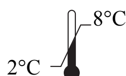
Reference

1. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
2. Greenwald R., Henderson R.W. and Yappaw S., 1991, J. Clin. Microbiol. 29:2354.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
4. 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.
5. Rambach A., 1990, Appl Environ. Microbiol., 56:301.
6. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

Revision : 00/ 2019

In vitro diagnostic medical device

CE Marking



Storage temperature

Do not use if package is damaged

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