Salmonella Selective Secondary Broth

M2042

Intended Use:

Recommended for selective enrichment and isolation of *Salmonella* from food.

Composition**

Ingredients	Gms / Litre
HM peptone##	9.000
Yeast extract	2.000
HiCase™ Peptone	9.000
D-Mannitol	2.500
Dextrose (Glucose)	0.500
Sodium deoxycholate	0.500
Brilliant green	0.005
Potassium Tetrathionate	10.000
Gelatin peptone	10.000
Sodium carbonate	0.400
Calcium carbonate	25.000
Salt mixture	5.000

**Formula adjusted, standardized to suit performance parameters
Equivalent to Meat Peptone

Directions

Suspend 73.91 grams in 1000 ml purified/distilled water. Heat just to boiling or place in flowing steam for 30 minutes. DO NOT AUTOCLAVE. Cool to 45-50°C. Mix well and dispense 10 ml amounts in sterile tubes.
Note: Due to the presence of calcium carbonate, the prepared medium forms opalescent solution with a white precipitate.

Principle And Interpretation

Salmonella Selective Secondary Broth favours the unrestricted growth of enteric pathogens by selectively inhibiting the coliforms. It is based upon the formulation of Tetrathionate Broth Base which was first formulated by Mueller(1) Tetrathionate Broth Base, Hajna is the modification formulated by Hajna and Damon (2),for the selective enrichment of Salmonellae from foodstuffs. Enrichment is a two step process, utilizing a primary enrichment media base supplemented by a secondary enrichment media.
HM peptone, HiCase™ Peptone, gelatin peptone and yeast extract are the sources of carbon, nitrogen, long chain amino acids, vitamins and minerals. The selectivity depends on the ability of salt mixture and tetrathionate to suppress commensal coliform organisms (3,4). Sodium deoxycholate and brilliant green inhibit gram-positive organisms. Dextrose(Glucose) and Mannitol are the carbohydrates sources. Calcium carbonate neutralizes the acidic tetrathionate decomposition products. After enrichment of the sample, streak on the plates of Brilliant Green Agar (M016), MacConkey Agar (M081), Bismuth Sulphite Agar (M027) for further confirmation.

Type of specimen

Food samples

Specimen Collection and Handling

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (7). 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. *Salmonella* species may show poor growth due to nutritional varieties.
2. Recovery to be carried out on selective media.

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

Cream to light green homogeneous free flowing powder

Colour and Clarity of prepared medium

Light green coloured opalescent solution with white precipitate, on standing the precipitate settles down.

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours (Recovery is done on MacConkey Agar M081).

Organism	Inoculum (CFU)	Growth on M081	Colour of colony
Escherichia coli ATCC 25922 (00013*)	50-100	fair-good	pink-red with bile precipitate
Salmonella Typhi ATCC 6539	50-100	good-luxuriant	colourless
Salmonella Enteritidis ATCC 13076 (00030*)	50-100	good-luxuriant	colourless
Salmonella Typhimurium ATCC 14028 (00031*)	50-100	good-luxuriant	colourless

Key : (*) - Corresponding WDCM numbers

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°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 (2,3).

Reference

1. Hajna A. A. and Damon S. R., 1956, Appl. Microbiol., 4:341.
2. Isenberg,H.D.ClinicalMicrobiology Procedures Handbook 2nd Edition.
3. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of ClinicalMicrobiology,11th Edition.Vol.1
4. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.
5. Mueller L., 1923, C.R. Soc. Biol. (Paris), 89:434.
6. Pollock M. R. and Knor R., 1943, Biochem J., 37:476.
7. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015,Compendium of Methods for the Microbiological Examination of Foods, 5th ed., APHA, Washington, D.C.
8. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

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