

Technical Data

Salmonella Selective Primary Broth

Intended Use:

A pre-enrichment medium used for recovery *Salmonella* species from food samples prior to selective enrichment and isolation.

Composition**

Ingredients	Gms / Litre
Soya peptone	5.000
Yeast extract	2.000
Sorbitol	2.000
Disodium hydrogen phosphate	3.500
Potassium dihydrogen phosphate	1.500
Sodium chloride	5.000
Polysorbate 80 (Tween 80)	0.500
Pyruvic acid	0.500

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 20.00 grams in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Dispense in tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Salmonella Selective Primary Broth is a pre-enrichment medium designed to help recovery Salmonellae before transfer to a selective medium. This pre-enrichment medium is free from inhibitors and is well buffered and provides conditions for resuscitation of the cells that have been injured by processes of food preservation. It was noted by Edel and Kampelmacher

(2) that sub-lethal injury to *Salmonella* may occur due to food preservation techniques involving heat, desiccation, high osmotic pressure, preservatives or pH changes. This is particularly important for vegetable specimens, which have low buffering capacity. This medium can be used for testing dry poultry feed (6). Lactose Broth is frequently used as a pre-enrichment medium but it may be detrimental to recovery of *Salmonella* (1).

Soya peptone and yeast extract provides carbon, nitrogen compounds, long chain amino acids, vitamins, minerals and other essential growth nutrients. Sodium chloride maintains the osmotic balance and phosphates buffer the medium. Sorbitol is fermentable carbohydrate. Tween 80 and pyruvic acid acts as neutralizers.

Type of specimen

Food samples

Specimen Collection and Handling

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (6). 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. Some strains may show poor growth due to nutritional variations of organisms.
- 2. Biochemical identification to be performed for species level differentaition.

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.

M2043

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light yellow coloured, clear solution with slight precipitate

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	Recovery	Colour of colony
Salmonella Enteritidis ATCC 13076 (00030*)	50-100	good-luxuriant	>=50%	Colourless
Salmonella Typhi ATCC	50-100	good-luxuriant	>=50%	Colourless
6539 Salmonella Typhimurium ATCC 14028 (00031*)	50-100	good-luxuriant	>=50%	Colourless
Escherichia coli ATCC 25922 (00013*)	50-100	fair-good	30-40%	Pink-red w/ bile ppt
Salmonella Abony NCTC 6017 (00029*)	50-100	good -luxuria	nt >=50%	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 (3,4).

Reference

- 1. Angelotti, 1963, Academic Press, New York, N.Y.
- 2. Edel and Kampelmacher, 1973, Bull. W.H.O., 48:167.
- 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. Juven, Cox, Bailey, Thomson, Charles and Schutze, 1984, J. Food Prot., 47:299.
- 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.

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