HiEncap™ Buffered Peptone Water

EC614M

HiEncap™ Buffered Peptone Water is recommended for pre-enrichment of injured *Salmonella* species from foods.

Composition**

Ingredients	Gms / Litre
Proteose peptone	10.000
Sodium chloride	5.000
Disodium phosphate, anhydrous	3.500
Monopotassium phosphate	1.500
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Each capsule contains 20 gms of medium. Suspend 1 capsule in 1000ml distilled or purified water.Heat to boiling to dissolve the medium completely. Dispense in 50 ml amounts. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Buffered Peptone Water is a pre-enrichment medium designed to help recovery of sub-lethally damaged 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 (1) that sub-lethal injury to *Salmonella* may occur due to food preservation techniques involving heat, desiccation, high osmotic pressure, preservatives or pH changes. Buffered Peptone Water during the pre-enrichment period helps in recovery of injured cells that may be sensitive to low pH (2). This is particularly important for vegetable specimens, which have low buffering capacity. This medium can be used for testing dry poultry feed (3). In a survey involving isolation of Salmonellae from meat that had been artificially contaminated with sub-lethally injured organisms, pre-enrichment in Buffered Peptone Water at 37°C for 18 hours before selection in Tetrathionate Brilliant Green Bile Broth (M1255) showed superior results compared with direct selection method. Lactose Broth is frequently used as a pre-enrichment medium but it may be detrimental to recovery of Salmonellae (4).

The media contain proteose peptone as a source of carbon, nitrogen, vitamins and minerals. Sodium chloride maintains the osmotic balance and phosphates buffer the medium. The broth is rich in nutrients and produces high resuscitation rates for sublethally injured bacteria and supports intense growth. The phosphate buffer system prevents bacterial damage due to changes in the pH of the medium.

Inoculate 10 grams specimen in 50 ml of these media and incubate at 35-37°C for 18 hours. Transfer 10 ml from this medium to 100 ml of Tetrathionate Broth (M032) and incubate at 43°C for 24 - 48 hours and then subculture on selective plating media. Examine the plates for characteristic *Salmonella* colonies.

Quality Control

Appearance
Gelatin capsule containing cream to yellow coloured granular media

Colour and Clarity of prepared medium
Light yellow coloured, clear solution without any precipitate

Quantity
Each capsule contains 20 grams of medium sufficient for 1000 ml media

Reaction
Reaction of 2.0% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH

7.00-7.40

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.(Recovery is carried out using XLD Agar,M031).

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery
Cultural Response			
Salmonella Enteritidis ATCC 13076	50-100	good-luxuriant	>=50%
Salmonella Typhi *ATCC 6539*	50-100	good-luxuriant	>=50%
Salmonella Typhimurium *ATCC 14028*	50-100	good-luxuriant	>=50%

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. Edel and Kampelmacher, 1973, Bull. W.H.O., 48:167.
2. Sadovski, 1977, J. Food Technol., 12:85.
3. Juven, Cox, Bailey, Thomson, Charles and Schutze, 1984, J. Food Prot., 47:299.
4. Angelotti, 1963, Academic Press, New York, N.Y.

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