

Sorbitol Peptone Broth and Bile Salts (PSB) ISO

Cat. 1298

For the selective enrichment of *Yersinia enterocolitica*.

Practical information

Applications	Categories
Selective enrichment	<i>Yersinia enterocolitica</i>

Industry: Clinical / Food

Regulations: ISO 10273 / ISO 11133 / BAM

Principles and uses

Sorbitol Peptone Broth And Bile Salts (PSB) is a medium recommended by ISO 10273 for the selective enrichment of *Yersinia enterocolitica* in food samples. Outbreaks of gastroenteritis associated with *Yersinia enterocolitica* are increasing. Contaminated food products such as pork, beef, and raw and processed milk have been identified as sources of infection.

Enzymatic digest of casein provides nitrogen, vitamins, minerals and amino acids essential for growth. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Potassium phosphates act as a buffer system. Sorbitol is the fermentable carbohydrate providing carbon and energy.

Formula in g/L

Enzymatic digest of casein	5	Bile salts	1,5
Sodium chloride	5	Sodium dihydrogenphosphate	1,2
Sodium hydrogen phosphate	8,23	Sorbitol	10

Preparation

Suspend 31 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in autoclave at 121°C for 15 minutes.

Instructions for use

Detection of *Yersinia enterocolitica* according to ISO 10273:

- Obtain the initial suspension. Add a test portion of 25 g or 25 ml to 225 g or 225 ml of Sorbitol Peptone Broth and Bile Salt (PSB) (Cat. 1298) to obtain a tenfold dilution, and homogenize.
- Inoculate the suspension (direct plating) onto 2 to 4 selective agar plates of *Yersinia* Selective Agar (CIN).
- Transfer the initial suspension in the liquid enrichment medium PSB to the selective enrichment medium ITC (Irgasan Ticarcillin and Potassium Chlorate Broth) (Cat. 1361), and incubate the two enrichment liquid media at a temperature of 25 °C for 44 °C.
- Plate out the enrichment with KOH treatment (mixing 0,5 ml of enrichment in 4,5 ml of 0,5 % KOH solution for 20 s) on plates of *Yersinia* Selective Agar (CIN).
- Incubate the plates of *Yersinia* Selctive Agar (CIN) at 30 °C for 24 hours.
- Verify the colony morphology as presumptive pathogenic *Y. enterocolitica* by successive culturing on selective plates. Typical colonies of *Y. enterocolitica*, will appear colorless, with dark red centers, like bull's eye, surrounded by a transparent border.
- Confirm the presence of pathogenic *Y. enterocolitica* species by biochemical or molecular confirmation test.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Amber	7,6 ± 0,2

Microbiological test

According to ISO 10273:

Incubation conditions: (25±1 °C /44±4 h).

Inoculation conditions: Target microorganisms (<100 CFU) / Non-target microorganism (>1000 CFU) / Selectivity (10⁴-10⁶ CFU).

Microorganisms	Specification	Characteristic reaction
Yersinia enterocolitica ATCC 23715 + Escherichia coli ATCC 8739 + Pseudomonas aeruginosa ATCC 27853	>10 characteristic colonies on CIN Agar	Characteristic colonies according to CIN Agar
Yersinia enterocolitica CECT 9144 + Escherichia coli ATCC 8739 + Pseudomonas aeruginosa ATCC 27853	>10 characteristic colonies on CIN Agar	Characteristic colonies according to CIN Agar

Storage

Temp. Min.:2 °C

Temp. Max.:25 °C

Bibliography

ISO 10273 Microbiology of food and animal feeding stuffs — Horizontal method for the detection of presumptive pathogenic Yersinia enterocolitica