

Brilliant Green Tetrathionate Bile Broth

Cat. 1253

For the enrichment of Salmonella spp. in foods, water and faeces.

Practical information

Applications	Categories
Selective enrichment	Salmonella

Industry: Water / Pharmaceutical/Veterinary / Food

Principles and uses

Brilliant Green Tetrathionate Bile Broth was recommended by the European Pharmacopoeia for the test of Salmonella in non-sterile products as a selective enrichment broth.

Meat peptone provides nitrogen, vitamins, minerals and amino acids essential for growth. Ox bile and brilliant green inhibit Gram-positive bacteria and most Gram-negative bacteria. They also prevent the growth of the anaerobic lactose fermenters such as Clostridium perfringens, which could give false positive reactions at 44 °C. The calcium carbonate is a neutralizer that will absorb any toxic metabolites. Organisms that have the enzyme tetrathionate reductase will grow and multiply in this medium due to the presence of potassium tetrathionate and Sodium chloride supplies essential electrolytes for transport and osmotic balance.

Formula in g/L

Brilliant green	0,07	Calcium carbonate	20
Meat peptone	8,6	Sodium chloride	6,4
Dehydrated Ox Bile	8	Potassium Tetrathionate	20

Preparation

Suspend 63 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Do not boil. Dispense into sterilized containers homogenizing the medium well enough to distribute the calcium carbonate. AVOID OVERHEATING. DO NOT AUTOCLAVE.

The growth of Proteus is inhibited by taking the pH to 6.5 or also by adding Novobiocin at 0,4%.

Instructions for use

Detection of Salmonella in pharmaceutical products:

- Pre-enrich the sample in Trypticasein Soy Broth (Cat. 1224) homogenize and incubate at 35-37°C for 18-24 hours.
- Transfer 1 ml of the enriched culture to 10 ml of Brilliant Green Tetrathionate Bile Broth (Cat. 1253) and incubate at 41-43°C for 18-24 hours.
- Subculture and incubate at 35-37 °C for 18-72 hours to at least 2 of the following media for confirmation of Salmonella spp.: Desoxycholate Citrate Agar (Cat. 1067); XLD Agar (Cat. 1080) or Brilliant Green Agar (Cat. 1078).
- Confirmation may be carried out by appropriate biochemical and serological test.

Characteristics of the Salmonella colonies:

Desoxycholate Citrate Agar: well-developed, colorless colonies.

XLD Agar: well-developed, red colonies, with or without black centers.

Brilliant Green Agar: small, transparent, colorless, pink or opaque-white colonies, often surrounded by a pink or red zone.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
With calcium carbonate precipitate	Fine powder	Cream with green tint	Milky green	7,0 ± 0,2

Microbiological test

Incubation conditions: (41-43 °C / 18-24 h).

Microorganisms

Salmonella typhimurium ATCC 14028
Escherichia coli ATCC 25922

Specification

Good growth
Inhibition

Storage

Temp. Min.:2 °C
Temp. Max.:25 °C

Bibliography

European Pharmacopoeia. 6th. Edition.
Microbiological examination of non-sterile products PS 137-140.