Shigella Broth ISO

Cat. 2078

Selective enrichment medium for Shigella spp.

Practical information

Aplications	Categories
Selective enrichment	Shigella

Industry: Food

Regulations: ISO 21567



Principles and uses

Shigella Broth is a selective enrichment medium recommended by ISO 21567:2004 for the preparation and dilution of the sample to analyze.

Shigella is the bacterium that causes the disease shigellosis, also known as bacillary dysentery. Shigella is one of the most easily transmitted bacterial diarrheas, since it can occur after fewer than 100 bacteria are ingested. Foods that come into contact with human or animal waste can transmit Shigella. Thus, handling toddlers' diapers, eating vegetables from a field contaminated with sewage, or drinking pool water are all activities that can lead to shigellosis.

Casein peptone provide nitrogen, vitamins, minerals and amino acids essential for growth. Dextrose is source of vitamins, particularly the B-group. Bacteriological agar is the solidifying agent. Dextrose is the fermentable carbohydrate providing carbon and energy. Potassium phosphates act as a buffer system. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Polysorbate 80 is incorporated to neutralize phenols, hexachlorophene, formalin. Novobiocin is the selective agent that inhibits most of the companion flora.

Formula in g/L

Dextrose	1	Casein peptone	20
Novobiocin	0,00055	Polysorbate 80	1,5
Potassium dihydrogen phosphate	2	Sodium chloride	5
Potassium hydrogen phosphate	2		

Preparation

Suspend 31,5 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. AVOID OVERHEATING. DO NOT AUTOCLAVE. Dispense into appropriate containers and use in the same day.

Instructions for use

For the detection of Shigella spp according to ISO 21567:
- Prepare a 1:10 dilution of the sample in shigella broth with 0,5 µg of novobiocin. Homogenize and incubate in anaerobiosis at 41,5±1 ºC for 16-20 h.
- Inoculate three selective agar to obtain isolated colonies: MacConkey Agar (Cat. 1052), XLD Agar (Cat. 1274) and Hektoen Agar (Cat. 1030). Incubate at 37±1 ºC for 20-24 h.
- Biochemical and serological confirmation.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)

w/o rests	Fine powder	Cream	Ambar, slightly opalescent	7,0±0,2

Microbiological test

Incubation conditions: (41,5±1 ºC / 16-20 h).
Inoculation conditions: Productivity qualitative (<100 CFU).

Microorganisms	Specification
Shigella flexneri ATCC 12022	Good growth
Shigella sonnei ATCC 25931	Good growh

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

ISO 21567:2004 Microbiology of food and animal feeding stuffs.- Horizontal method for the detection of Shigella spp
King, S. & Metzger Appl. Microbiol. 16:577. 1968. King, S. & Metzger Appl. Microbiol. 16:579, 1968.