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Shigella Broth

Shigella Broth Base is used for the isolation and cultivation of *Shigella* species from food

REF: BS.1/SH01.100.0100	100 Gram	REF: BS.1/SH01.250.0250	250 Gram
REF: BS.1/SH01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Shigella are gram-negative, non-motile, non-spore forming rod-shaped bacteria closely related to *Escherichia coli* and *Salmonella* . *Shigella* infection is typically via ingestion (faecal-oral contamination), depending on age and condition of the host, as few as 10 bacterial cells can be enough to cause an infection. *Shigella* causes dysentery that results in the destruction of the epithelial cells of the intestinal mucosa in the cecum and rectum. Some strains produce enterotoxin and Shiga toxin, similar to the verotoxin of *E. coli* O157:H7(1). Shigella Broth Base is used for the isolation and cultivation of *Shigella* species (2), as recommended by APHA (3).

METHOD PRINCIPLE

Shigella Broth Base contains casein enzymic hydrolysate as a source of carbon, nitrogen, vitamins and minerals. Dextrose provides the necessary carbohydrates. Buffering action in the medium is provided by dipotassium hydrogen phosphate and potassium dihydrogen phosphate. Sodium chloride maintains the osmotic balance of the medium. Polysorbate 80 is inhibitory for growth of accompanying microflora besides providing growth factors. Novobiocin is inhibitory for gram-positive bacteria such as *S. aureus* and certain gram-negative organisms such as *H. influenzae* and some species of *Proteus*.

MEDIA COMPOSITION

Item	Formula per liter of medium
Casein enzymic hydrolysate	20 gm
Sodium chloride	5 gm
Dipotassium hydrogen phosphate	2 gm
Potassium dihydrogen phosphate	2 gm
Dextrose	1 gm

Final pH 7.0 ± 0.2 at 25°C

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.
  S56: dispose of this material and its container at hazardous or special waste collection point.
  S57: use appropriate container to avoid environmental contamination.
  S61: avoid release in environment.

For further information, refer to the Shigella Borth material safety data sheet.

STORAGE AND STABILITY

BioScien Shigella Broth should be stored between 10- 30°C in a firmly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a 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.

PREPARATION

- Suspend 31.5 grams in 1000 ml distilled water.
- Add Polysorbate 80 to the medium
- Adjust pH to 7.0 ± 0.2 at 25°C
- Heat if necessary to dissolve the medium completely.
- Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.
- Cool medium to 45-50°C and add rehydrated content of 1 vial of Novobiocin supplement under aseptic conditions. Mix well and dispense in sterile test tubes.

Deterioration

The color of ***BioScien*** Shigella Broth is Cream to yellow homogeneous free flowing powder. Prepared Media is Light amber coloured clear solution. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

SPECIMEN

- Clinical samples (e.g., faeces, blood, and wounds).
- Food sample (milk and other dairyproducts)

EQUIPMENT REQUIRED NOT PROVIDED

- Inoculating loops, swabs, collection containers
- Incubators
- Sterile test tube

PERFORMANCE CHARACTERISTICS

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours with added Shigella Selective Supplement

Organism	Growth
Shigella dysenteriae ATCC 13313	Luxuriant
Shigella flexneri ATCC 12022	Luxuriant
Shigella sonnei ATCC 25931	Luxuriant
Staphylococcus aureus ATCC 25923	Inhibited

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control still out of range please contact ***BioScien*** technical support.

REFERENCES

1. Hale T. L., Keusch G. T., 1996, Shigella. In: Barons Medical Microbiology (Barron S et al, Eds.), 4th Ed., Univ of Texas Medical Branch.
2. Atlas R.M., 1997, Handbook of Microbiological Media 2nd Edition, CRC Press, Boca Raton, New York, London, Tokyo.
3. Downes F. P. and Ito K., (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.

SYMBOLS IN PRODUCT LABELLING			
IVD	For in-vitro diagnostic use	Σ	Number of <n> test in the pack
LOT	Batch Code/Lot number		Caution
REF	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		