Medium 11. GN Broth

LQ151

Intended use

Recommended for the enrichment of *Shigella* from pharmaceutical products in accordance with IP 2018.

Composition**

Ingredients	g/ L
Polypeptone peptone	20.000
Glucose (Dextrose)	1.000
Sodium citrate	2.000
Sodium deoxycholate	0.500
Di-potassium hydrogen phosphate	4.000
Potassium dihydrogen phosphate	1.500
Sodium chloride	5.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Label the ready to use LQ151CHL bottle. Inoculate the sample and Incubate at specified temperature and time.

Principle And Interpretation

GN Broth is recommended by the Indian Pharmacopoeia (1) for the selective enrichment of *Shigella* species with subsequent isolation on a selective medium, XLD Agar (MH031). Croft and Miller isolated more strains of *Shigella* from rectal swabs using this medium (2). Hajna (3,4) also suggested the enrichment of organisms from rectal swabs in this medium 1-6 hours before plating on solid media.

The medium contains polypeptone peptone, which provides amino acids and other nitrogenous substances to support bacterial growth. The combination of sodium citrate and sodium deoxycholate inhibit gram-positive and some gram-negative bacteria such as coliforms. Phosphates serve as a buffering system. Sodium chloride maintains osmotic equilibrium. *Proteus, Pseudomonas* and coliforms do not overgrow *Salmonella and Shigella* in GN Broth during the first 6 hours of incubation. This enrichment broth should be used in conjunction with selective and non selective plating media to increase the probability of isolating pathogens (5,6,7).

Type of specimen

Pharmaceutical samples

Specimen Collection and Handling

For pharmaceutical samples follow appropriate techniques for handling specimens as per established guidelines (1).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Further biochemical and serological tests must be carried out for complete identification.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance
Sterile clear GN Broth in glass bottle.

Colour
Light amber coloured, clear to slightly opalescent solution.

Quantity of medium
10 ml of medium in bottles.

pH
6.80-7.20

Sterility Check
Passes release criteria

Cultural Response
Cultural characteristics observed after inoculation in GN Broth and then subculture on XLD Agar and incubation at 30-35°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth in GN broth	Recovery on XLD Agar	Recovery	Colour of colony
Growth promoting					
Shigella boydii ATCC 8700	50 -100	good	good-luxuriant	>=50 %	red translucent
Inhibitory					
Staphylococcus aureus subsp. *aureus* ATCC 6538 (00032*)*	>=10^3	inhibited		0 %	

Key (*) - Corresponding WDCM number

Storage and Shelf Lif
On receipt store between 15-30°C. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Disposal
User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (8,9).

Reference
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5.MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.
6.Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
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Revision : 02/2024