Medium 11.GN Broth

Intended use
Recommended for the enrichment of Shigella from pharmaceutical products & clinical samples in accordance with IP 2018.

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polypeptone peptone</td>
<td>20.000</td>
</tr>
<tr>
<td>Glucose (Dextrose)</td>
<td>1.000</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>2.000</td>
</tr>
<tr>
<td>Sodium deoxycholate</td>
<td>0.500</td>
</tr>
<tr>
<td>Di-potassium hydrogen phosphate</td>
<td>4.000</td>
</tr>
<tr>
<td>Potassium dihydrogen phosphate</td>
<td>1.500</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.0±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

Directions
Label the ready to use LQ151C bottle. Inoculate the sample and Incubate at specified temperature and time.

Principle And Interpretation

GN Broth is recommended by the Indian Pharmacopoeia (4) for the selective isolation 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 (1). Taylor and Schelhart showed the superiority of GN Broth to selenite enrichment media for isolation of Shigella (10). Hajna (2,3) 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 nonselective plating media to increase the probability of isolating pathogens (7,8,9).

Type of specimen
Clinical samples- faeces ; Pharmaceutical samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (5,6).
For pharmaceutical samples follow appropriate techniques for handling specimens as per established guidelines (4).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic Use only. 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 clinical 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 bottle.

Colour
Light amber coloured, clear to slightly opalescent solution.

Quantity of medium
10ml of medium in bottles (LQ151).

Reaction
6.80-7.20

Sterility test
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.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth in GN broth</th>
<th>Recovery on XLD Agar</th>
<th>Colour of colony</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth promoting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shigella boydii ATCC 8700</td>
<td>50 -100</td>
<td>good</td>
<td>&gt;=50 %</td>
<td>red</td>
</tr>
<tr>
<td>Inhibitory</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staphylococcus aureus subsp. aureus ATCC 6538 (00032*)</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>&lt;=0 %</td>
<td>translucent</td>
</tr>
</tbody>
</table>

Key (*) - Corresponding WDCM number

Storage and Shelf Life
On receipt, store between 15-25°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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (5,6).

Reference
4. Indian Pharmacopoeia, 2018, Ministry of Health and Family Welfare, Govt. of India.,

Revision : 02 / 2019

In vitro diagnostic medical device

CE Marking

Storage temperature

Do not use if package is damaged

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