GN Broth IP (Medium 11)

Intended Use
GN Broth IP (Medium 11) is used for isolation of *Shigella* species.

Summary
GN Broth is recommended by the Indian Pharmacopoeia for the selective isolation of *Shigella* species with subsequent isolation on a selective medium, XLD Agar. Croft and Miller isolated more strains of *Shigella* from rectal swabs using this medium. Taylor and Schelhart showed the superiority of GN Broth to selenite enrichment media for isolation of *Shigella*.

Principle
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.

Formula*

Ingredients	**g/L**
Polypeptone Peptone	20.0
Glucose	1.0
Sodium Citrate	2.0
Sodium Deoxycholate	0.5
Di-potassium Hydrogen Phosphate	4.0
Mono Potassium Dihydrogen Phosphate	1.5
Sodium Chloride	5.0
Final pH (at 25°C)	7.0 ± 0.2

*Adjusted to suit performance parameters

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2ºC-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of Specimen
Pharmaceutical sample

Specimen Collection and Handling
Ensure that all samples are properly labelled.
Follow appropriate techniques for handling samples as per established guidelines.
Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure.
The samples must be stored and tested within the permissible time duration.
After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions
1. Suspend 34.00 g of the powder in 1000 mL purified / distilled water.
2. Mix thoroughly.
3. With continues stirring, bring gently to boil and maintain at boiling point until solution is complete. DO NOT AUTOCLAVE.
4. Cool to 50°C, mix and dispense into tubes.

Quality Control

Dehydrated appearance: Cream to light yellow coloured, homogeneous, free flowing powder.
Prepared Appearance: Light yellow coloured, clear to slightly opalescent solution.
Growth Promotion Test: Growth promotion is carried out in accordance with IP and growth is observed after an incubation at 30°C-35°C for 24-48 hours. Subculturing is carried out using Xylose Lysine Desoxycholate Agar after enrichment in GN Broth IP at 30°C-35°C for 24-48 hours.
Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time specified in the test, inoculating ≤ 100 cfu of appropriate microorganism at 30°C-35°C for 24 hours.
Inhibitory Properties: No growth of the test microorganism occurs for the specified temperature and not less than the longest period of the time specified, inoculating > 100 cfu of the appropriate microorganism at 30°C-35°C for ≥ 48 hours.

Organism (ATCC)	**Growth**
*Shigella boydii (*12030)	Good
Inhibitory	
Staphylococcus aureus (6538)	Inhibited

Note: For inhibition no growth of test microorganism should occur.
Inoculum for good growth should be between 10-100 cfu and that for inhibition is greater than 100 cfu.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Limitations

Further isolation and biochemical tests must be carried out for confirmation.

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Indian Pharmacopoeia, 2017, Ministry of Health and Family Welfare, Govt. of India.
2. Croft C. C., Miller M. J., 1956, Am. J. Clin. Pathol., 26:411.
3. Taylor W.I., Schelhart D., 1968, Appl. Environ. Microbiol., 16:1383.
4. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	**Product description**	**Pack Size**
201070030100	Dehydrated Culture Media	100 g
201070030500	Dehydrated Culture Media	500 g
203070110100	Bottle Media	100 mL