

## GN Broth, Hajna (i23347)

For the selective cultivation of Gram-negative intestinal bacteria (especially of *Shigella*) from all types of materials.

Industry: General cultivation / Clinical / Food

## Principles & Uses

GN (Gram Negative) Broth, developed by Hajna, serves as an enrichment medium for the retrieval of *Salmonella* and *Shigella* from both clinical and non-clinical samples, including urine, blood clots, throat swabs, and swabs from utensils. APHA recommends it for food microbiological examinations. This medium contains peptone, providing essential amino acids and nitrogenous substances for bacterial growth. Sodium citrate and sodium deoxycholate inhibit the growth of gram-positive and some gram-negative bacteria, such as *coliforms*, while phosphates act as a buffering system. The higher mannitol concentration over dextrose limits *Proteus* growth and enhances *Salmonella* and *Shigella* growth. GN Broth is typically used alongside selective and non-selective plating media to increase pathogen isolation probability.

## Composition (gr/L)

Tryptose 20, Sodium Chloride 5, Sodium Citrate 5, Dipotassium Hydrogen Phosphate 4, Mannitol 2, Potassium dihydrogen Phosphate 1.5, Glucose 1, Sodium Deoxycholate 0.5.

Final pH at 25°C 7.0 ± 0.2

## Preparation from dehydrated Powder

Suspend 39 g of the powder in 1 Liter of distilled water. Mix Thoroughly. Autoclave at 121°C for 15 min.

## Quality Control

Dehydrated Appearance: Off-white to light tan, free-flowing, homogeneous.

Prepared Appearance: Light amber, clear to slightly opalescent.

Reaction of 3.9% Solution at 25°C: pH 7.0 ± 0.2

## Cultural Response

Inoculate and incubate at 35 ± 2°C for 18-24 hours.

Organism (ATCC*)	Recovery
<i>Escherichia coli</i> (25922)	Good
<i>Enterococcus faecalis</i> (19433)	None to poor
<i>Salmonella enterica subsp. enterica serotype Typhimurium</i> (14028)	Good
<i>Shigella flexneri</i> (12022)	Good

\*ATCC is a registered trade mark of the American Type Culture Collection.



*E. coli* (left) and *Shigella flexneri* (right) Both tubes appear turbid due to bacterial growth.

## Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.