DA
MPF

GN Enrichment Broth acc. to HAJNA

Medium proposed by HAJNA (1955) for the selective cultivation of Gram-negative intestinal bacteria (especially of Shigella) from all types of materials.

IVD *in vitro diagnosticum –*
For professional use only

See also General Instruction of Use
Warnings and precautions see ChemDAT®
(www.chemdat.info)

The yields of shigellae achieved by previous enrichment with GN enrichment broth are higher than those obtained by smearing directly onto selective or elective plates (CROFT and MILLER 1956). The yields of salmonellae and shigellae are considerably improved by using this medium, combined with XLD Agar (TAYLOR and SCHELHART 1967, 1968; DUNN and MARTIN 1971).

Principle

Microbiological method

Mode of Action

Tryptose serves as a nutrient base. Citrate and deoxycholate act as selective agents and suppress the growth of Gram-positive microorganisms (particularly fecal streptococci), all types of spore-forming bacilli and some coliform bacteria.

Mannitol selectively promotes the growth of mannitol-metabolizing salmonellae and shigellae. Phosphate buffer prevents premature over-acidification of the culture medium by acidic metabolic products. If Proteus and Pseudomonas aerguninosa are present, they usually proliferate more slowly than salmonellae and shigellae during the first 6-8 hours of incubation.

Typical Composition (g/litre)

Tryptose 20.0; D(+)glucose 1.0; D(-)mannitol 2.0; di-potassium hydrogen phosphate 4.0; potassium dihydrogen phosphate 1.5; sodium chloride 5.0; sodium citrate 5.0; sodium deoxycholate 0.5.

Preparation and Storage

Usable up to the expiry date when stored dry and tightly closed at +15 to +25° C. Protect from light.

After first opening of the bottle the content can be used up to the expiry date when stored dry and tightly closed at +15 to +25° C.

Suspend 39 g/litre, dispense into suitable containers, autoclave (15 min at 121 °C).

pH: 7.0 ± 0.2 at 25 °C.

The prepared broth is clear and yellowish.

Specimen

e.g. Stool.

Clinical specimen collection, handling and processing, see general instructions of use.

Experimental Procedure and Evaluation

Inoculate the enrichment broth with the sample material.

Incubation: approx. 6 hours at room temperature aerobically.

Spread the resulting culture thinly on the surface of elective plates.

Literature

DUNN, C., a. MARTIN, W.: Comparison of media for isolation of Salmonella and Shigella from fecal specimen. **- Appl. Microbiol., 22**; 17-22 (1971).

HAJNA, A.A.: A new specimen preservative for gram-negative organisms of the intestinal group. **- Publ. Hlth. Lab., 13**; 59-62 (1955).

HAJNA, A.A.: A new enrichment broth medium for gram-negative organisms of the intestinal group. **- Publ. Hlth. Lab., 13**; 83-89 (1955).

CROFT, C.C., a. MILLER, M.J.: Isolation of shigella from rectal swabs with HAJNA "GN" broth. **- Am. J. Clin. Path., 26**; 411-417 (1956).

TAYLOR, W.I., a. SCHELHART, D.: Isolation of shigellae, IV. Comparison of plating media with stools. **- Am. J. Clin. Path., 48** ; 356-362 (1968).

TAYLOR, W.I., a. SCHELHART, D.: Isolation of shigellae, V. Comparison of enrichment broth with stools. **- Appl. Microbiol., 16**; 1383-1386 (1967).

Ordering Information

Product	Merck Cat. No.	Pack size
GN Enrichment Broth acc. to HAJNA	1.10756.0500	500 g

Quality control

Test strains	Growth
Shigella flexneri ATCC 12022	good
Shigella sonnei ATCC 11060	good
Salmonella typhimurium ATCC 14028	good
Salmonella enteritidis NCTC 5188	good
Escherichia coli ATCC 25922	good
Staphylococcus aureus ATCC 25923	none
Enterococcus faecalis ATCC 11700	none
Bacillus cereus ATCC 11778	none