

Technical Information

GN MiVeg Broth

Product Code : VM1242

Application:- GN MiVeg Broth is recommended for selective cultivation of gram-negative organisms of the enteric group.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate No.1	20.00
Dextrose	1.00
Mannitol	2.00
Sodium citrate	5.00
Synthetic detergent No.III	0.50
Dipotassium phosphate	4.00
Monopotassium phosphate	1.50
Sodium chloride	5.00
Final pH (at 25°C)	7.0 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

GN MiVeg Broth is prepared by using vegetables peptones and synthetic detergent No. III. thus making it TSE/BSE risks free. GN MiVeg Broth is the modification of GN Broth can be used against conventional GN Broth, Hajna which is recommended by APHA (1) for examination of foods. GN Broth, Hajna medium is generally used as a enteric enrichment broth for clinical specimens and as a nonselective enrichment broth for foods to recover *Salmonella* and *Shigella* species (2,3). Hajna (3, 4) suggested enrichment of organisms from clinical samples, like rectal swabs upto 6 hours before plating on solid media. This enrichment broth should be used in conjunction with selective and nonselective plating media to increase the probability of isolating pathogens (1, 5, 6, 7).

MiVeg hydrolysate No.1 serves as a source of carbon, nitrogen, vitamins and amino acids essential for growth of organisms. Sodium citrate and Synthetic detergent No.III inhibit gram-positive and some gram-negative bacteria other than *Salmonella* and *Shigella*. Phosphates act as a buffering system of the medium. Sodium chloride maintains osmotic balance respectively. The higher concentration of mannitol over dextrose limits the growth of *Proteus* and favours the growth of mannitol fermenting organisms like *Salmonella* and *Shigella*. *Proteus*, *Pseudomonas* and coliforms do not overgrow *Salmonella* and *Shigella* in GN Broth during first 6 hours of incubation.

Methodology

Suspend 39 grams of powder media in 1000 ml distilled water. Mix well and dispense in test tubes. Sterilize by autoclaving at 10 lbs pressure (115°C) for 15 minutes. AVOID EXCESSIVE HEATING.

Quality Control

Physical Appearance

Light Yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

Colour and Clarity of prepared medium

Light amber coloured, clear to very slightly opalescent solution.

Reaction

Reaction of 3.9% w/v aqueous solution is pH 7.0 ± 0.2 at 25°C.

pH Range

6.8 - 7.2

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 18 – 24 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth*	Growth**	Colour of colony**	Recovery
<i>Enterococcus faecalis</i> (19433)	$10^3 - 2 \times 10^3$	none-poor	none-poor	pale pink-red	<20%
<i>Escherichia coli</i> (25922)	$10^2 - 10^3$	good	good	pale pink-red	>50%
<i>Proteus mirabilis</i> (25933)	$10^2 - 10^3$	good	good	colourless	>50%
<i>Pseudomonas aeruginosa</i> (27853)	$10^2 - 10^3$	good	good	colourless	>50%
<i>Salmonella</i> serotype Typhimurium (14028)	$10^2 - 10^3$	good	good	colourless	>50%
<i>Shigella flexneri</i> (12022)	$10^2 - 10^3$	good	good	colourless	>50%

Key : * : in GN MiVeg Broth

** : on MacConkey MiVeg Agar (VM1081) after 24 hours

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 day.

Further Reading

- Downes F.P and Ito K (Eds.), 2001, Compendium of Methods For The Microbiological Examination of Foods, 4th ed., APHA, Washington D.C.
- Hajna, 1955, Publ. Health Lab., 13:59.
- Hajna, 1955, Publ. Health Lab., 13:83.
- Hajna, 1956, Air. Univ. Sch. Ar. Med., USAF, 56:39.
- Patrick Murray et.al, 2005, Manual of Clinical Microbiology, 7th ed., ASM, Washington, D.C.
- Forbes, B.A., Sahem D.F and Weissfeld A.S., 2002, Bailey and Scott's Diagnostic Microbiology, 11th ed., The C.V. Mosby Co., St. Louis.
- MacFaddin J.F., 2000(ed), Biochemical Tests for Identification of Medical Bac-teria, 3rd edition, Lippincott Williams and Wilkins, New York.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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