

## GN HiVeg™ Broth

MV242

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

**Composition\*\* :**

Ingredients	Grams/Litre
HiVeg 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

**Directions :**

Suspend 39 grams in 1000 ml distilled water. Dispense in test tubes. Sterilize by autoclaving at 10 lbs pressure (115°C) for 15 minutes. AVOID EXCESSIVE HEATING.

**Principle and Interpretation :**

GN HiVeg Broth is prepared by using plant based protein hydrolysate and synthetic sources and is therefore free of TSE/BSE risks. It is prepared by using HiVeg hydrolysate No.1 in place of Tryptose and Synthetic detergent No.III in place of sodium deoxycholate. GN HiVeg 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). GN HiVeg Broth can be used for similar purposes.

HiVeg hydrolysate No.1 serves as a source of carbon, nitrogen, vitamins and amino acids necessary for bacterial growth. Sodium citrate and Synthetic detergent No.III inhibit gram-positive and some gram-negative bacteria other than *Salmonella* and *Shigella*. Phosphates serve as a buffering system. Sodium chloride maintains osmotic equilibrium. The higher concentration of mannitol over dextrose limits the growth of *Proteus* and enhances growth of mannitol fermenting *Salmonella* and *Shigella*. *Proteus*, *Pseudomonas* and coliforms do not overgrow *Salmonella* and *Shigella* in GN Broth during first 6 hours of incubation. Similar findings are found valid for GN HiVeg Broth.

**Quality Control :****Appearance of Powder**

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

**Product Profile :**

Vegetable based (Code MV)Ⓞ	Animal based (Code M)
<b>MV242</b> HiVeg hydrolysate No.1 Synthetic detergent No. III	<b>M242</b> Tryptose Sodium deoxycholate

**Recommended for** : Selective cultivation of gram-negative organisms of the enteric group, especially *Salmonella* and *Shigella*.

**Reconstitution** : 39.0 g/l

**Quantity on preparation (500g)** : 12.82 L

**(100g)** : 2.56 L

**pH (25°C)** : 7.0 ± 0.2

**Supplement** : None

**Sterilization** : 115°C / 15 minutes.

**Storage** : Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.

**Colour and Clarity**

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.

**Cultural Response**

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

Organisms (ATCC)	Inoculum (CFU)	Growth*	Growth**	Colour of colony**	Recovery of colony**
<i>Enterococcus faecalis</i> (19433)	10 <sup>3</sup> - 2 X10 <sup>3</sup>	none-poor	none-poor	pale pink-red	<20%
<i>Escherichia coli</i> (25922)	10 <sup>2</sup> -10 <sup>3</sup>	good	good	pale pink-red	>50%
<i>Proteus mirabilis</i> (25933)	10 <sup>2</sup> -10 <sup>3</sup>	good	good	colourless	>50%
<i>Pseudomonas aeruginosa</i> (27853)	10 <sup>2</sup> -10 <sup>3</sup>	good	good	colourless	>50%
<i>Salmonella</i> serotype Typhimurium (14028)	10 <sup>2</sup> -10 <sup>3</sup>	good	good	colourless	>50%
<i>Shigella flexneri</i> (12022)	10 <sup>2</sup> -10 <sup>3</sup>	good	good	colourless	>50%

Key : \* : in GN HiVeg Broth

\*\* : on MacConkey HiVeg Agar (MV081) after 24 hours

**References :**

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- Forbes, B.A., Sahem D.F and Weissfeld A.S., 2002, Bailey and Scott's Diagnostic Microbiology, 11<sup>th</sup> ed., The C.V. Mosby Co., St. Louis.
- MacFaddin J.F., 2000(ed), Biochemical Tests for Identification of Medical Bacteria, 3<sup>rd</sup> edition, Lippincott Williams and Wilkins, New York.