

Fluid Tetrathionate HiVeg™ Medium w/o Iodine and BG (Tetrathionate HiVeg™ Broth Base w/o Iodine and BG)

MV032

Fluid Tetrathionate HiVeg Medium with added Iodine and Brilliant green is recommended for the selective enrichment method for isolating *Salmonella* serotype Typhi and other *Salmonellae* from faeces, urine, food and other material of sanitary importance.

Composition ** :

Ingredients	Grams/Litre
HiVeg hydrolysate	2.5
HiVeg peptone	2.5
Synthetic detergent	1.0
Calcium carbonate	10.0
Sodium thiosulphate	30.0

** Formula adjusted, standardized to suit performance parameters.

Directions :

Suspend 46 grams in 1000 ml distilled water and heat just to boiling. DO NOT AUTOCLAVE. Cool below 45°C and add 20 ml iodine solution (iodine - 6 grams and potassium iodide - 5 grams in 20 ml distilled water) and 10 ml of 0.1% brilliant green solution. Mix well and dispense in 10 ml quantities.

This complete medium should be used on the day of preparation otherwise sterilized broth base may be stored at 2-8°C for some time. Do not heat after the addition of iodine solution. Use the medium immediately after addition of iodine.

Note : Due to presence of calcium carbonate, the prepared medium forms opalescent solution with a white precipitate.

Principle and Interpretation :

Fluid Tetrathionate HiVeg Medium is prepared by completely replacing animal based peptones by vegetable peptones which makes the medium free of BSE/TSE risks. Veg substitutes, HiVeg hydrolysate and HiVeg peptone are used in this medium. Tetrathionate HiVeg Broth Base is the modification of Tetrathionate Broth Base which was originally described by Mueller (1). He found that the medium selectively inhibited coliforms and permitted unrestricted growth of enteric pathogens. Synthetic detergent functions equally as animal based bile salts. Brilliant green and synthetic detergent inhibits gram-positive microorganisms. The selectivity depends on the ability of thiosulphate and tetrathionate in combination to suppress commensal coliform organisms (2,3). Organisms producing the enzyme tetrathionate reductase e.g. *Salmonella* species proliferates in the medium. Tetrathionate is produced from thiosulphate after addition of iodine solution. Calcium carbonate neutralizes the acidic tetrathionate decomposition products. For further confirmation, enriched cultures may be streaked after incubation, on the plates of Brilliant Green HiVeg Agar (MV016), MacConkey HiVeg Agar (MV082) or Bismuth Sulphite HiVeg Agar (MV027).

Product Profile :

Vegetable based (Code MV)Ⓞ	Animal based (Code M)
MV032 HiVeg hydrolysate HiVeg peptone Synthetic detergent	M032 Casein enzymic hydrolysate Peptic digest of animal tissue Bile salts

Recommended for : Selective enrichment method for isolating *Salmonella* species from faeces, urine, food and other material of sanitary importance.

Reconstitution : 46.0 g/l

Quantity on preparation (500g) : 10.86 L
(100g) : 2.17 L

pH (25°C) : -

Supplement : Iodine solution, Brilliant green solution

Sterilization : Boiling (DO NOT AUTOCLAVE)

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

Quality Control :

Appearance of powder

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

Colour and Clarity

Complete medium with added Brilliant Green solution and Iodine solution is light green, opalescent with heavy white precipitate. On standing this precipitates settles down.

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours, when subcultured on MacConkey HiVeg Agar (MV082) after enrichment in Tetrathionate HiVeg Medium.

Organisms (ATCC)	Inoculum (CFU)	Growth*	Recovery	Colour of colony*
<i>Escherichia coli</i> (25922)	10 ² -10 ³	fair-good	>20%	pink - red
<i>Salmonella</i> serotype Choleraesuis (12011)	10 ² -10 ³	good-luxuriant	>50%	colourless
<i>Salmonella</i> serotype Enteritidis (13076)	10 ² -10 ³	good-luxuriant	>50%	colourless
<i>Salmonella</i> serotype Typhimurium (14028)	10 ² -10 ³	good-luxuriant	>50%	colourless
<i>Salmonella</i> serotype Typhi (6539)	10 ² -10 ³	good-luxuriant	>50%	colourless

Key = * : on MacConkey HiVeg Agar (MV082)

References :

- Mueller, 1923, Compt. Rend. Soc. Biol. (Paris) 89:434.
- Pollack M.R et.al 1942, J. Pathol. Bacteriol. 54: 469.
- MacFaddin, J.F. 1985, Media for the Isolation- Cultivation- Identification- Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.