

Technical Information

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

Product Code : VM1032

Application:- Fluid Tetrathionate MiVeg 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	Gms / Litre
MiVeg hydrolysate	2.5
MiVeg peptone	2.5
Synthetic detergent	1.0
Calcium carbonate	10.0
Sodium thiosulphate	30.0

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Fluid Tetrathionate MiVeg Medium is prepared by using vegetable peptones in place of animal based peptones thus making the medium free from BSE/TSE risks. This medium is the modification of Tetrathionate Broth Base which was originally described by Mueller (1). He found that the medium selectively inhibit 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. After the addition of iodine and potassium iodide, tetrathionate is formed in the medium. The selectivity of the medium depends on the ability of thiosulphate and tetrathionate in combination to suppress commensal coliform organisms (2,3). Organisms possessing the enzyme tetrathionate reductase e.g. *Salmonella* species proliferates in this medium. Calcium carbonate neutralizes the acidic tetrathionate decomposition products. For further confirmation streak enriched after incubation, on the plates of Brilliant Green Agar (VM1016), MacConkey MiVeg Agar (VM1082) or Bismuth Sulphate MiVeg Agar (VM1027).

Methodology

Suspend 46 grams of powder media in 1000 ml distilled water. Mix thoroughly 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.

Quality Control

Physical Appearance

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

Colour and Clarity of prepared medium

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

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours, when subcultured on MacConkey MiVeg Agar (VM1082) after enrichment in Tetrathionate MiVeg Medium.

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

Key = * : on MacConkey MiVeg Agar (VM1082)

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 days.

Further Reading

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

Disclaimer :

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