Dehydrated Culture Media
Bases / Media Supplements

Technical Information

Tetrathionate Brilliant Green Bile Broth

Product Code: DM 2255

Application: - Tetrathionate Brilliant Green Bile Broth is used for the isolation and identification of Salmonellae.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	8.600
Ox bile	8.000
Sodium chloride	6.400
Calcium carbonate	20.000
Potassium tetrathionate	20.000
Brilliant green	0.070
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Salmonella are gram-negative, facultatively anaerobic, non-sporulating, non-motile rods belonging to the family *Enterobacteriaceae.* They are widely distributed in animals affecting mainly the stomach and the intestines and difficult to differentiate biochemically from *Escherichia coli.* Enrichment broth is usually recommended to facilitate the recovery of small numbers of *Salmonella* species [4]. Tetrathionate Broth was originally formulated by Mueller [1] and later modified by Kauffman [2, 3]. Tetrathionate Brilliant Green Bile Broth is used as an enrichment medium for Salmonella. Tetrathionate Brilliant Green Bile Broth is also included in I.P. [5] for isolation and identification of *Salmonella* species from foods, water and other materials of sanitary importance.

Peptic digest of animal tissue in the medium provides nitrogenous nutrients for growth of Salmonellae. Brilliant green and ox-bile inhibit both gram-positive as well as some selected gram-negative organisms. Potassium tetrathionate inhibits normal flora of faecal specimens. Sodium chloride helps in maintaining osmotic equilibrium.

After incubation, streak the culture from Tetrathionate Brilliant Green Bile Broth (DM2255) onto differential medium for isolation and identification. Tetrathionate Brilliant Green Bile Broth is not suitable for growth of *Salmonella* Typhi and *Salmonella* Paratyphi [6].

Methodology

Suspend 63.07 grams of powder media in 1000 ml distilled water. Shake well & heat just to boiling. DO NOT AUTOCLAVE OR REHEAT. Dispense as desired.

Quality Control

Physical Appearance

Light yellow to pale green homogeneous free flowing powder.

Colour and Clarity of prepared medium

Bluish green coloured opalescent solution with white precipitate.

Reaction

Reaction of 6.3% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH Range 6.80-7.20

Cultural Response/ characteristics

DM 2255: Cultural characteristics observed when subcultured on MacConkey Agar (DM1082) after an incubation at 35-37°C for 1824hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Escherichia coli ATCC 25922	50-100	fair	20-30%	pink to red with bile precipitate
Salmonella Typhi ATCC 6539	50-100	Luxuriant	>=50%	Colourless
Salmonella Typhimurium ATCC 14028	50-100	Luxuriant	>=50%	Colourless
Salmonella Enteritidis ATCC 13076	50-100	Luxuriant	>=50%	Colourless
Staphylococcus aureus ATCC 25923	>=10^3	inhibited	0%	
Staphylococcus aureus ATCC 6538	>=10^3	Inhibited	0%	
Escherichia coli ATCC 8739	50-100	Fair	20-30%	pink to red with bile precipitate
Escherichia coli NCTC 9002	50-100	Fair	20-30%	pink to red with bile precipitate
Staphylococcus aureus NCIMB 9518	>=10^3	inhibited	0%	

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^{o} in sealable plastic bags for 2-5 days.

Further Reading

1. Mueller L., 1923, C. R. Soc. Biol., (Paris), 89, 434.
2. Kauffman F., 1930, Hyg. Abt. I. Orig., 113, 148.
3. Kauffman F., 1935, Z. Hyg. Infektionskr., 117, 26.
4. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Ed.). 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
5. Indian Pharmacopoeia, 1996, Ministry of Health and Family Welfare, Govt. of India,
6. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.

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