

Technical Information

Tetrathionate CV Enrichment Broth

Product Code: DM 2256

Application: - Tetrathionate CV Enrichment Broth is used for the selective enrichment of Salmonellae from meat and foodstuffs.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	4.300
Peptic digest of animal tissue	4.300
Sodium chloride	6.400
Potassium tetrathionate	20.000
Crystal violet	0.005
Final pH (at 25°C)	6.5±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

The examination of various types of food products for presence of *Salmonella* requires methods different from those used in clinical laboratories. This is due to the low numbers of *Salmonella* along with poor physiological state of these pathogens following frequent exposure to stressful conditions during food processing or storage. Tetrathionate CV Enrichment Broth is used for the selective enrichment and isolation of *Salmonella* from meat and foodstuffs.

Tetrathionate Broth Base was originally described by Mueller⁽¹⁾ and he found that the medium selectively inhibits coliforms and permits unrestricted growth of enteric pathogens.

Muellers medium was subsequently modified by Kauffman⁽²⁾ and Knox⁽³⁾ in which they obtained more number of isolates.

Tetrathionate Crystal Violet Enrichment Broth is prepared as per the composition described by Preuss⁽⁴⁾ and is used for the selective enrichment of Salmonellae from meat and foodstuffs⁽⁵⁾. It complies with the specifications prescribed in the German Meat Inspection Law⁽⁶⁾.

Casein enzymic hydrolysate and peptic digest of animal tissue are the sources of carbon, nitrogen, vitamins and minerals. Sodium deoxycholate and brilliant green and crystal violet inhibit gram-positive organisms. Potassium tetrathionate acts as a selective agent. Sodium chloride maintains the osmotic balance of the medium. After enrichment of the sample, streak on the plates of Brilliant Green Agar (DM1016), MacConkey Agar (DM1081), Bismuth Sulphite Agar (DM1027) for further confirmation.

Methodology

Suspend 35 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely.

Dispense in tubes. DO NOT AUTOCLAVE.

Note: The medium should be used on the day of preparation as the prepared medium is not stable.

Quality Control

Physical Appearance

Cream to yellow may have purple tinge homogeneous free flowing powder.

Colour and Clarity of prepared medium

Blue to light blue coloured clear solution without any precipitate

Reaction

Reaction of 3.5% w/v aqueous solution at 25°C. pH : 6.5±0.2

pH Range 6.30-6.70

Cultural Response/ characteristics

DM 2256: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours (Recovery is done on Brilliant Green Agar) (DM1016).

Organism	Inoculum (CFU)	Growth on DM1016	Colour of colony
<i>Escherichia coli</i> ATCC 25922	50-100	none-poor	yellowish green
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	good-luxuriant	pinkish white
<i>Salmonella Enteritidis</i> ATCC 13076	50-100	good-luxuriant	pinkish white
<i>Staphylococcus aureus</i> ATCC 25923	50-100	inhibited	

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 L., 1923, Soc. Biol., (Paris), 89:434.
2. Kauffman F., 1930, Zentralb. Bakteriologie. Parasitenkd. Infektionskr.-Hyg. Abt. I. Orig., 113:148.
3. Knox R., Gell P. and Pollack M., 1942, J. Pathol. Bacteriol., 54:469.
4. Preuss H., 1949, Z. Hyg., 129:187.
5. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.
6. Deutsches Fleischbeschaugesetz: Anlage 1zu :20 Abs., 4.

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