Technical Information

Tergitol-7 Broth

Product Code: DM 1851

Application:-Tergitol-7 Broth is recommended as a selective and differential medium for detection and enumeration of coliforms.

Composition**

Ingredients	Gms / Litre
Proteose peptone	5.000
Yeast extract	3.000
Lactose	10.000
Sodium heptadecyl sulphate(Tergitol-7)	0.100
Bromo thymol blue	0.025
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Tergitol-7 Broth was originally discovered by Chapman [(1)] which was later on modified by incorporating 2,3,5-Triphenyl Tetrazolium Chloride (TTC) into the medium. This medium is both selective and differential and is used for the detection and enumeration of coliform organisms. Pollard [(2)] has shown the selective bactericidal property of sodium heptadecyl sulphate (Tergitol-7). Kulp et al [(3)] corroborated the use of Tergitol-7 medium with TTC in routine analysis of water and Mossel [(4)] used this medium for the examination of food materials. Sodium heptadecyl sulphate (Tergitol-7) inhibits gram-positive bacteria and *Proteus* swarming and yields better recovery of coliforms. Bromo thymol blue is the pH indicator. Lactose fermenting organisms form yellow coloured medium while *Klebsiella* and *Enterobacter* form greenish yellow coloured medium. Lactose non-fermenters produce blue coloured medium. TTC is reduced in the bacterial cell to form formazan, a red coloured insoluble complex, thereby producing red coloured medium.

Methodology

Suspend 18.13 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Aseptically add 3 ml of Triphenyl Tetrazolium Chloride (TTC) Solution (MS2057), if desired. Mix well and dispense into sterile tubes.

Quality Control

Physical Appearance

Cream to light green homogeneous free flowing powder

Colour and Clarity of prepared medium

Green coloured clear to slightly opalescent solution in tubes.

Reaction

Reaction of 1.8 1% w/v aqueous solution at 25°C. pH : 6.9±0.2

pH range

6.70-7.10

Cultural Response/Characteristics

DM1851: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours, if desired with added TTC Solution 1% (MS2057).

Organism	Inoculum (CFU)	Growth	Colour of medium
Escherichia coli ATCC 25922	50-100	luxuriant	yellow
Enterobacter aerogenes ATCC 13048	50-100	luxuriant	yellow
Proteus vulgaris ATCC 13315	50-100	good	blue-green
Pseudomonas aeruginosa ATCC 27853	50-100	good	blue-green

Salmonella Typhimurium ATCC 14028	50-100	luxuriant	blue-green
Shigella flexneri ATCC 12022	50-100	luxuriant	blue-green
Staphylococcus aureus ATCC 25923	>=10^3	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: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Chapman G.H., 1947, J. Bact., 53:504.
2. Pollard A.L., 1946, Science, 103:758.
3. Kulp W., Mascoli C. and Tavshanjian O., 1953, Am. J. Public Health, 43:1111.
4. Mossel D.A.A., 1962, J. Appl. Bact., 25:20.

Disclaimer :

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