Technical Information

Tergitol-7 Agar Base

Product Code: DM 1616

Application: - Tergitol-7 Agar Base is recommended for selective enumeration and identification coliform organisms.

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
Agar	15.000
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Tergitol-7 Agar was originally formulated by Chapman [1] and later on modified by adding (2, 3, 5) Triphenyl Tetrazolium Chloride (TTC) into the medium. This medium is both selective and differential and used for the detection and enumeration of coliform organisms. Pollard [2] has shows the selective bactericidal property of sodium heptadecyl sulphate (Tergitol-7). Kulp et al [3] corroborated the use of Tergitol-7 Agar with TTC in routine analysis of water and Mossel [4] used this medium for the examination of food materials.

Proteose peptone and yeast extract serve as sources of carbon, nitrogen and other essential nutrients including vitamin B complex. Sodium heptadecyl sulphate (Tergitol-7) inhibits the growth of gram-positive bacteria and *Proteus* swarming and yields better recovery of coliforms. Bromo thymol blue is the pH indicator. Lactose fermenting organisms form yellow colonies with yellow zones while *Klebsiella* and *Enterobacter* form greenish yellow colonies. Lactose non-fermenters produce blue colonies. TTC is reduced by the bacterial cell except *Escherichia coli* and *Enterobacter aerogenes* to form formazan, a red coloured insoluble complex, thereby producing red coloured colonies.

Filter the specimen to be analyzed through two membranes. Place the membrane upon two TTC Tergitol Agar plates. Incubate one plate at 37°C for 24 hours (total coliforms) and the other at 44°C for 18-24 hours (faecal coliforms). The yellow colonies with deep yellow halo after incubation at 44°C should be identified as faecal coliform bacteria.

Methodology

Suspend 33.13 grams of powder media in 1000 ml distilled water. Shake well & heat 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 pour into sterile Petri plates.

Quality Control

Physical Appearance

Cream to light green homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Green coloured clear to slightly opalescent gel forms in Petri plates.

Reaction

Reaction of 3.31% w/v aqueous solution at 25°C. pH : 6.9±0.2

pH range

6.70-7.10

Cultural Response/Characteristics

DM 1616: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours with added TTC Solution 1% (MS2057).

Organism	Inoculum(CFU)	Growth	Recovery	Colour of colony/ medium
Enterobacter aerogenes ATCC 13048	50-100	luxuriant	>=50%	Reddish brown
Escherichia coli ATCC 25922	50-100	good-luxuriant	>=50%	yellow with red centre
Proteus mirabilis ATCC 25933	50-100	good	>=50%	red with bluish zone
Pseudomonas aeruginosa ATCC 27853	50-100	good	>=50%	red with bluish zone
Salmonella Typhimurium ATCC 14028	50-100	luxuriant	>=50%	red with bluish zone
Staphylococcus aureus ATCC 25923	>=10^3	good	>=50%	red with bluish zone
Shigella flexneri ATCC 12022	50-100	good-luxuriant	>=50%	red with bluish zone

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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