Tergitol-7 Agar Base

M616

Intended Use:

Recommended for selective enumeration and identification of coliform organisms.

Composition**

Ingredients	g / L
Proteose peptone	5.000
Yeast extract	3.000
Lactose	10.000
Tergitol 7 (Sodium heptadecyl sulphate)	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

Directions

Suspend 33.13 grams in 1000 ml purified/distilled water. Heat to boiling 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 TTC Solution 1% (10 ml per vial) (FD057), if desired. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Tergitol-7 Agar was originally designed by Chapman (1) and later on modified by incorporating 2,3,5 Triphenyl Tetrazolium Chloride (TTC) into the medium. This medium is selective and differential used for the detection and enumeration of coliform organisms. Pollard (2) has reported 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 Bcomplex. 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 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 *Klebsiella 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.

Type of specimen

Clinical samples - Urine; Water samples

Specimen Collection and Handling:

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 (5).

Warning and Precautions :

In Vitro diagnostic Use. For professional use only. Read the label before opening the container. Wear protective gloves/ protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Further biochemical and serological tests must be carried out for further identification.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

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

6.70-7.10

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours with added TTC Solution 1%(FD057).

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony/ medium
# *Klebsiella aerogenes* ATCC 13048 (00175*)	50-100	luxuriant	>=50%	Reddish brown
Escherichia coli ATCC 25922 (00013*)	50-100	good-luxuriant	>=50%	yellow with red centre
Proteus mirabilis ATCC 25933	50-100	good	40-50%	red with bluish zone
Pseudomonas aeruginosa ATCC 27853 (00025*)	50-100	good	40-50%	red with bluish zone
Salmonella Typhimurium ATCC 14028 (00031*)	50-100	luxuriant	>=50%	red with bluish zone
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	$>=10^4$	inhibited	0%	
Shigella flexneri ATCC 12022 (00126*)	50-100	good-luxuriant	>=50%	red with bluish zone

Key : (*) Corresponding WDCM numbers.
(#) Formerly known as *Enterobacter aerogenes*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (6,7).

Reference

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.
5.Lipps WC, Braun-Howland EB, Baxter TE,eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.
6.Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
7.Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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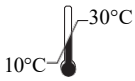
IVD ***In vitro*** **diagnostic medical device**



Storage temperature

EC REP CEpartner4U, Esdoornlaan 13,
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www.cepartner4u.eu

CE Marking

Do not use if package is damaged

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