

Tergitol-7 Agar Plate

MP616

Intended use

Recommended for selective enumeration and identification coliform organisms.

Composition**

Ingredients	g / L
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
TTC Solution 1% (10 ml per vial) (FD057)	3 ml
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Either streak, inoculate or surface spread the test inoculum (50-100 CFU) aseptically on the plate.

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 B complex. 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 *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.

Type of specimen

Clinical samples - faeces, urine and other pathological material; Water samples

Specimen Collection and Handling

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (5). For clinical samples follow appropriate techniques for handling specimens as per established guidelines (6,7). After use, contaminated materials must be sterilized by autoclaving before discarding.

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. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
2. Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.
3. Further biochemical and serological tests must be carried out for complete identification.

Please refer disclaimer Overleaf.

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

Sterile Tergitol-7 Agar in 90 mm disposable plates with smooth surface and absence of black particles/cracks/bubbles

Colour of medium

Green coloured medium

Quantity of medium

25 ml of medium in 90 mm disposable plates.

pH

6.70-7.10

Sterility Check

Passes release criteria

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony/ medium
# <i>Klebsiella aerogenes</i> ATCC 13048 (00175*)	50-100	luxuriant	≥50%	Reddish brown
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	good-luxuriant	≥50%	yellow with red centre
<i>Proteus mirabilis</i> ATCC 25933	50-100	good	40-50%	red with bluish zone
<i>Pseudomonas aeruginosa</i> ATCC 27853 (00025*)	50-100	good	40-50%	red with bluish zone
<i>Salmonella</i> Typhimurium ATCC 14028 (00031*)	50-100	luxuriant	≥50%	red with bluish zone
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	≥10 ³	inhibited	0%	
<i>Shigella flexneri</i> 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

On receipt store between 20-30°C. Use before expiry date on the label. 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.

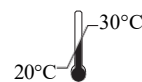
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