

86455 Tergitol®-7 Agar NutriSelect® Plus

Selective media for the detection of coliform bacteria and for the early detection of *E. coli* in water analysis. For the detection of faecal contamination in foods acc. to Mossel (1962).

Composition:

Ingredients	Grams/Litre
Peptone	5.0
Yeast extract	3.0
Lactose	10.0
Sodium heptadecyl sulfate	0.1
Bromothymol blue	0.025
Agar	15.0

Final pH 6.7-7.1 at 25°C

Store dehydrated powder between 10-30°C in a tightly closed container & the prepared medium at 2-8°C. Use before expiry date on the label.

Appearance(color): White to faint beige, Free flowing powder
 Gelling: Firm, comparable with 1.5% Agar gel.
 Color and Clarity: Green coloured clear to slightly opalescent gel forms in Petri plates.

Directions:

Dissolve 33.1 g in 1 litre distilled water and sterilize by autoclaving at 121°C for 15 minutes. Cool to 45°C and add 3 ml sterile 1% TTC solution (Cat. No. 17779). Mix till uniform then pour plates.

Principle and Interpretation:

Tergitol-7 Agar is a selective and differential medium for the detection and enumeration of coliforms in food and water samples.

Tergitol-7 Agar is based on the formulation described by Chapman & is later modified by incorporating 2,3,5-Triphenyl Tetrazolium Chloride (TTC) into the medium (1). Pollard (4) has reported the selective bactericidal property of sodium heptadecyl sulphate (Tergitol-7). Kulp et al (5) corroborated the use of Tergitol-7 Agar with TTC in routine analysis of water and Mossel (2) used this medium for the examination of food materials.

Peptone and yeast extract serve as sources of carbon, nitrogen and other essential nutrients including vitamin B complex. Tergitol-7 inhibits Gram positive organisms and minimizes the swarming of *Proteus* allowing superior recovery of coliforms. Bromo thymol blue is the pH indicator. Lactose fermenting organisms form greenish yellow colonies with yellow zones. Lactose non-fermenters produce red colonies surrounded by blue zone. TTC inhibits most gram-positive bacteria. And lactose-negative organisms are able to reduce TTC to an insoluble red formazan resulting in dark red colonies. Coliforms like *Escherichia coli* and *Enterobacter aerogenes* reduce TTC weakly and therefore show yellow colonies with an orange to red center. Tergitol-7 Agar is quoted in the EU Directive for the detection and enumeration of coliforms in drinking water (3).



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

Organisms (ATCC/WDCM)	Inoculum (CFU)	Growth	Recovery	Color of colony
<i>Enterobacter aerogenes</i> (13048/00175)	50-100	+++	≥50%	reddish brown
<i>Klebsiella pneumoniae</i> (13883/00097)	50-100	+++	≥50%	yellow with red center
<i>Escherichia coli</i> (25922/00013)	50-100	++/+++	≥50%	yellow with red center
<i>Proteus mirabilis</i> (25933/-)	50-100	++	40-50%	red with bluish zone
<i>Pseudomonas aeruginosa</i> (27853/00025)	50-100	++	40-50%	red with bluish zone
<i>Salmonella Typhimurium</i> (14028/00031)	50-100	+++	≥50%	red with bluish zone
<i>Shigella flexneri</i> (12022/00126)	50-100	++/+++	≥50%	red with bluish zone
<i>Staphylococcus aureus</i> subsp. <i>Aureus</i> (25923/00034)	≥10 ⁴	-	0%	

References:

1. Chapman G.H., 1947, J. Bact., 53:504.
2. Mossel D.A.A., 1962, J. Appl. Bact., 25:20.
3. E.U. (1998) 98/83/EC of Council of 3rd of November 1998 on the quality of water intended for human consumption. Off. J. Eur. Commun., L3330, 32-54.
4. Pollard A.L., 1946, Science, 103:758.
5. Kulp W., Mascoli C. and Tavshanjian O., 1953, Am. J. Public Health, 43:1111.

Precautions and Disclaimer

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