



M-Tergitol-7 Agar w/ Meat Extract

M1678

M-Tergitol-7 Agar w/ Meat Extract is recommended as a selective and differential medium for the recovery of injured coliform organisms from chlorinated water by membrane filter technique.

Composition**

Ingredients	Gms / Litre
Peptone	10.000
Yeast extract	6.000
Meat extract	5.000
Lactose	20.000
Bromo thymol blue	0.050
Tergitol 7	0.100
Agar	12.700
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 53.85 grams in 1000 ml 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 2.5 ml of 1% 2,3,5 Triphenyl Tetrazolium chloride (TTC) solution (FD057). Mix well and pour in sterile Petri plates.

Principle And Interpretation

McFeters, Cameron and LeChevallier modified Tergitol 7 Agar to improve its selective and differential properties for the recovery of stressed coliforms from chlorinated water (1). They had reported that selective media such as M-Endo Agars used to isolate gram-negative bacteria recovered only 30% or less as compared to recovery between 71 - 100% of injured coliforms on Tergitol-7 Agar (2). In their study of surface and drinking water samples, including samples containing laboratory-stressed coliforms, M-Tergitol-7 Agar Base recovered 43% more coliforms than on M-Endo Agar and 36% more coliforms than by using M-Endo Agar with a resuscitation technique., (1). In another study of 102 drinking water samples 8 to 38 fold more yield of coliforms has been reported on M-Tergitol-7 Agars as compared to M-Endo Agar LES (3).

Peptone and meat extract provide necessary nitrogenous growth factors. Yeast extract is the source of B-vitamins and organic nitrogen and carbon compounds. Lactose is the fermentable carbohydrate. Microorganism fermenting lactose produces yellow colonies due to reaction with bromothymol blue. Sodium heptadecyl sulphate (Tergitol-7) acts as surface-active agent which inhibit growth of gram-positive bacteria as well as swarming of *Proteus* (1,4). The reduction of TTC by lactose-negative bacteria produces dark red colonies. Lactose-positive *E. coli* and coliform bacteria reduce TTC weakly, hence their colonies are yellow-orange.

Quality Control

Appearance

Cream to pale green coloured homogeneous free flowing powder

Gelling

Firm, comparable with 1.27% Agar gel

Colour and Clarity of prepared medium

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

Reaction

Reaction of 5.38% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH

7.00-7.40

Cultural Response

M1678: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Colour of colony on membrane filter
Cultural Response			
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	dark red
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	light orange to yellow
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	luxuriant	dark red
<i>Shigella flexneri</i> ATCC 12022	50-100	luxuriant	dark red
<i>Staphylococcus. aureus</i> ATCC 25923	$\geq 10^3$	inhibited	
<i>Enterococcus faecalis</i> ATCC 29212	$\geq 10^3$	inhibited	

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2–8°C. Use before expiry date on the label.

Reference

- 1.McFeters, LeChevallier and Cameron 1983, Appl. Environ. Microbiol. 45:484.
- 2.McFeters, Cameron and LeChevallier 1982 Appl.Environ. Microbiol.,43:97.
- 3.McFeters, Kippin and LeChevallier 1986,Appl. Environ. Microbiol.51:1.
- 4.Pollard, 1946 Science, 103:758.

Revision : 2 / 2015

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