M-Lauryl Sulphate Agar

M1656

M-Lauryl Sulphate Agar is used for enumeration of *Escherichia coli* and coliforms in water, using membrane filter technique.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	39.000
Yeast extract	6.000
Lactose	30.000
Sodium lauryl sulphate	1.000
Phenol red	0.200
Agar	15.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 91.2 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.

Principle And Interpretation

Burman (1) substituted bile salts with teepol in Membrane Enriched Teepol Broth, the membrane filtration test medium used to detect coliform organisms in water. M-Lauryl Sulphate Agar is prepared by substituting teepol with sodium lauryl sulphate.

The water samples are filtered through sterile membrane filter and then placed face upward on agar plates contains M-Lauryl Sulphate Agar. Burman (2) recommended the following incubation temperatures and durations.

Unchlorinated waters:

Coliform organisms :4 hours at 30°C followed by 14 hours at 35°C

Escherichia coli :,,4 hours at 30°C followed by 14 hours at 44°C

Non-chlorinated organisms benefit from 4 hours incubation at 30°C but chlorinated organisms require 6 hours incubation at 25°C. After incubation, yellow colonies are formed which should be confirmed further.

Peptic digest of animal tissue and yeast extract act as a source of nitrogen, carbon and amino acids. Lactose is the source of fermentable carbohydrate. Phenol red serves as an indicator. Sodium lauryl sulphate inhibits gram positive bacteria

Quality Control

Appearance
Light yellow to pink homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Red coloured clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 9.12% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH
7.20-7.60

Cultural Response

Organism	Inoculum (CFU)	Growth at 35-37ºC	Growth at 44ºC	Colour of Colony on Membrane

Enterobacter aerogenes ATCC 13048	50-100	luxuriant	inhibited	yellow
Escherichia coli ATCC 25922	50-100	luxuriant	luxuriant	yellow
Bacillus subtilis ATCC 6633	>=10^3	inhibited	inhibited	
Staphylococcus aureus ATCC 25923	>=10^3	inhibited	inhibited	
Enterococcus faecalis ATCC 29212	>=10^3	inhibited	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. Burman N.P., 1967, Proc. Soc. Wat. Treat. Exam., 16:40.
2. Burman N.P., 1967, Rec. Adv. in Bacteriological Examination of waters; C.H. Collins (Ed.), Butterworth, London.

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