



Lethen Agar

M414

Lethen Agar is recommended to determine the phenol coefficient of quaternary ammonium compounds using *Escherichia coli* or *Staphylococcus aureus* ATCC 6538.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	5.000
Beef extract	3.000
Dextrose	1.000
Polysorbate 80	7.000
Lecithin	1.000
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 32 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. Mix well and dispense as desired.

Principle And Interpretation

Lethen Agar is a modification of Tryptone Glucose Extract Agar with the supplementation of lecithin and Polysorbate 80. This medium is used to neutralize the quaternary ammonium compounds in the testing of germicidal activity. The addition of lecithin and Polysorbate 80 was suggested by Weber and Black (1).

Lethen Medium is also recommended for testing of cosmetics 4). Beef extract, casein enzymic hydrolysate and dextrose supply essential nutrients and other trace elements for the microbial growth. Lecithin and polysorbate 80 enables the recovery of bacteria from solutions containing residues of disinfectant used in sanitization of utensils and equipments. Lecithin neutralizes quaternary ammonium compounds and polysorbate 80 neutralizes phenolic disinfectants, hexachlorophene and formalin (2 ,3). Dehydrated medium may appear moist with brown sugar appearance, which does not indicate deterioration (3).

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light yellow coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 3.2% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

M414: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours .

Organism	Inoculum (CFU)	Growth	Recovery
<i>Escherichia coli</i> ATCC 25922	50-100	good - luxuriant	≥70%
<i>Staphylococcus aureus</i> ATCC 6538	50-100	good - luxuriant	≥70%

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. Weber and Black, 1948, Soap Sanitary Chem., 24:134.
2. Favero (Chm.), 1967, A State of the Art Report, Biological Contamination Control Committee, American Association for Contamination Control.
3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore
4. American Society for Testing and Materials, 1991, Standard Test Methods for preservatives in water-containing cosmetics, E640-78. Annual Book of ASTM Standards, ASTM, Philadelphia, Pa.

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