



m-Kleb Agar Base

M2052

Intended Use:

Recommended for selective isolation and differentiation of *Klebsiella* from water and other sources.

Composition**

Ingredients	Gms / Litre
Proteose peptone	10.000
HM Peptone B#	1.000
Sodium chloride	5.000
Inositol	5.000
Aniline Blue	0.100
Phenol red	0.025
Sodium lauryl sulphate	0.100
Agar	15.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Equivalent to Beef Extract

Directions

Suspend 36.22 grams in 980 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. Add 20ml of 95% Ethyl alcohol to 980ml of media and aseptically add rehydrated contents of two vials of Klebsiella Selective Supplement (FD225). Mix well and pour into sterile Petri plates.

Principle And Interpretation

m-Kleb Agar Base is recommended for isolation and differentiation of *Klebsiella* species by membrane filtration method. *Klebsiella pneumoniae* strains are widely distributed in the environment and contribute to biochemical and geochemical process (1). *K.pneumoniae* bacteria may be opportunistic pathogens that can give rise to bacteremia, pneumonia, urinary tract, and several other types of human infection. It also proves to be the source of lung infections that generally occur in patients with debilitating conditions such as alcoholism, diabetes mellitus, and chronic obstructive pulmonary disease (2). *K.pneumoniae* are also excreted in the faeces of many healthy humans and animals, and they are readily detected in sewage polluted waters (3).

K.pneumoniae produces a deep blue to bluish green coloured colony thereby aiding in the easy detection of the organisms. Most of the frequently encountered gram-negative faecal contaminants are inhibited on this media using a selective supplement.

Proteose peptone, HM peptone B provides nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and other essential nutrients required for the growth of the organism. Inositol is the fermentable carbohydrate. Neutral red and aniline blue are the pH indicators. Sodium chloride maintains the osmotic equilibrium of the medium. Sodium lauryl sulphate (SLS) inhibit most of the accompanying flora. Addition of the selective supplement further increases the selectivity of the medium.

Type of specimen

Water samples

Specimen Collection and Handling

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(4) After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

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 specimens. Safety guidelines may be referred in individual safety data sheets

Limitations :

This medium is selective medium, however confirmatory test has to be carried out.

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

Light yellow to pink homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Reddish purple coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 3.62% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH

7.20-7.60

Cultural Response

Cultural characteristics observed on membrane filter with added Klebsiella Selective Supplement (FD225) after an incubation at 35-37°C for 18-24 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
Cultural Response				
# <i>Klebsiella aerogenes</i> ATCC 13048 (00175*)	≥10 ³	inhibited	0%	
<i>Escherichia coli</i> ATCC 25922 (00013*)	≥10 ³	inhibited	0%	
<i>Salmonella Typhimurium</i> ATCC 14028 (00031*)	≥10 ³	inhibited	0%	
<i>Klebsiella pneumoniae</i> ATCC 13883 (00097*)	50-100	luxuriant	≥50%	Deep blue-bluish green
<i>Klebsiella pneumoniae</i> ATCC 700603	50-100	luxuriant	≥50%	Deep blue-bluish green

Key : * Corresponding WDCM Numbers

Formerly known as *Klebsiella aerogenes*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. 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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (5,6).

Reference

1. Krieg, N. R., and J. G. Holt, (Eds.), 1984, Bergeys Manual of Systematic Bacteriology, Vol. 1, p. 408 - 516. The Williams and Wilkins Co., Baltimore, MD.

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2. Wyngaarden J. B., Smith L. H., (Eds.), Cecil Text book of Medicine, 16th Ed, pp 1430 -1432, Philadelphia, W. B. Saunders, 1982.
 3. Standard methods, For the examination of water and wastewater, 22nd edition, Eugene W. Rice, Rodger B. Baird, Andrew D. Eaton, Lenore S. Clesceri.
 4. Greenberg A. E., Clesceri L. S. and Eaton A. D., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st ed., APHA, Washington, D.C.
 5. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
 6. 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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