



MacConkey Agar Medium

M008E

Intended Use:

MacConkey Agar Medium is used for isolation and differentiation of lactose fermenting and lactose non-fermenting enteric bacteria and also for isolation of faecal streptococci.

Composition**

Ingredients	Gms / Litre
Peptone	20.000
Bile salts	5.000
Sodium chloride	5.000
Lactose	10.000
Neutral red	0.070
Agar	15.300
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 55.37 grams in 1000 ml distilled water. Heat to boiling with gentle swirling to dissolve the agar completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Avoid overheating. Cool to 45-50°C and pour into sterile petri plates. The surface of the medium should be dry when inoculated.

Principle And Interpretation

MacConkey Agar Medium is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of clinical specimens (2, 3). Subsequently MacConkey Agar is recommended for use in microbiological examination of foodstuffs (4) and for direct plating / inoculation of water samples for coliform counts (5). This medium is also accepted by the Standard Methods for the Examination of Milk and Dairy Products (6) and pharmaceutical preparations (1). Lactose fermenting strains grow as red or pink and may be surrounded by a zone of acid precipitated bile. The red colour is due to production of acid from lactose, absorption of neutral red and a subsequent colour change of the dye when the pH of medium falls below 6.8. Lactose non-fermenting strains, such as *Shigella* and *Salmonella* are colourless and transparent and typically do not alter appearance of the medium

Type of specimen

Clinical samples - Blood ; Food and dairy samples ; Water samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (7,8).

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (9,10).

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(5)

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use only. 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 clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Although this medium is selective for gram negative organisms, biochemical identification and serological testing using pure cultures is recommended for complete identification.
2. It is advised to incubate for recommended period and temperature to avoid misinterpretation of results.
3. It is advised to read the results immediately after incubation, as overgrowth of *Proteus* species may mask other colonies.

Please refer disclaimer Overleaf.

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 coloured homogeneous free flowing powder

Gelling

Firm, comparable with 1.53% Agar gel.

Colour and Clarity of prepared medium

Light red coloured clear to slightly opalescent gel forms in Petri plates.

Reaction

Reaction of 5.53% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH

7.20-7.60

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Cultural Response

Organism	Growth	Inoculum (CFU)	Recovery	Colour of Colony
Cultural Response				
<i>Enterobacter aerogenes</i> ATCC 13048 (00175*)	luxuriant	50-100	≥50%	pink to red
<i>Escherichia coli</i> ATCC 25922 (00013*)	luxuriant	50-100	≥50%	pink to red w/ bile ppt
<i>Proteus vulgaris</i> ATCC 13315	luxuriant	50-100	≥50%	colourless
<i>Salmonella Typhi</i> ATCC 6539	luxuriant	50-100	≥50%	colourless
<i>Salmonella Enteritidis</i> ATCC 13076 (00030*)	luxuriant	50-100	≥50%	colourless
<i>Shigella flexneri</i> ATCC 12022 (00126*)	luxuriant	50-100	≥50%	colourless
<i>Staphylococcus aureus</i> ATCC 25923 (00034*)	Inhibition	≥10 ³	0%	
<i>Enterococcus faecalis</i> ATCC 29212 (00087*)	fair to good	50-100	30-40%	pale pink to red
<i>Salmonella Paratyphi A</i> ATCC 9150	luxuriant	50-100	≥50%	colourless
<i>Salmonella Paratyphi B</i> ATCC 8759	luxuriant	50-100	≥50%	colourless

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store below 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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (7,8).

Reference

1. The United States Pharmacopoeia, XXI and the National Formulary, 16th Ed., 1985, United States Pharmacopoeial Convention, Inc., Washington D.C.
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3. MacConkey, 1905, J. Hyg., 5:333.

4. Speck M. (Ed.), 1985, Compendium of Methods for the Microbiological Examination of Foods, 2nd ed., APHA, Washington, D.C.
5. Greenberg A.E., Clesceri L.S. and Eaton A.D., (Eds.), 1992, Standard Methods for the Examination of Water and Wastewater, 18th ed., APHA, Washington, D.C.
6. Marshall R. (Ed.), 1992, Standard Methods for the Examination of Dairy Products 16th ed., APHA, Washington, D.C.
7. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
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9. Downes F. P. and Ito K. (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C.
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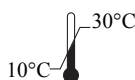
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In vitro diagnostic medical device



CE Marking



Storage temperature



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