



MacConkey Agar w/o CV w/1.2% Agar

M008B

Intended use

For selective isolation and differentiation of lactose non-fermenting from lactose fermenting enteric bacteria.

Composition**

Ingredients	g/ L
Peptone	17.000
Proteose peptone	3.000
Lactose	10.000
Bile salts	1.500
Sodium chloride	5.000
Neutral red	0.030
Agar	12.000
Final pH (at 25°C)	7.1±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 48.53 grams in 1000 ml purified/ distilled water. Heat to boiling with gentle swirling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Avoid overheating. Cool to 45-50°C and dispense approximately 20 ml amounts in 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 (1,2). MacConkey agars are slightly selective and differential plating media mainly used for the detection and isolation of gram-negative organisms from clinical (3), dairy (4), food (5,6), water (7). It is also recommended for the selection and recovery of the *Enterobacteriaceae* and related enteric gram-negative bacilli. This medium has peptone and proteose peptone which provides necessary nitrogen sources for growth of organisms. The selective action is due to bile salts in the medium. Lactose fermenting strains grow as pink to red colonies and may be surrounded by a zone of acid precipitated bile. The pink to red colour is due to production of acid from lactose, absorption of neutral red and a subsequent colour change of the dye due to pH drop of medium. Lactose non-fermenting strains, such as *Shigella* and *Salmonella* are colorless and transparent and typically do not alter appearance of the medium. Sodium chloride in the medium helps to maintain osmotic balance of the cells.

Type of specimen

Clinical samples - urine; Food and dairy samples; Water samples.

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (8,9).

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (4,7). For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(10)

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

Warning and Precautions

In Vitro diagnostic use. For professional 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 homogeneous free flowing powder

Gelling

Firm, comparable with 1.2% Agar gel.

Colour and Clarity of prepared medium

Orange red coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 4.85% w/v aqueous solution at 25°C. pH : 7.1±0.2

pH

6.90-7.30

Cultural Response

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

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
<i>Escherichia coli</i> ATCC 25922 (00034*)	50-100	luxuriant	≥50%	pink to red with bile precipitate
# <i>Klebsiella aerogenes</i> ATCC 13048 (00175*)	50-100	luxuriant	≥50%	pink to red
<i>Enterococcus faecalis</i> ATCC 29212 (00087*)	50-100	fair	30-40%	pale pink to red
## <i>Proteus hauseri</i> ATCC 13315	50-100	luxuriant	≥50%	colourless
<i>Salmonella</i> Paratyphi A ATCC 9150	50-100	luxuriant	≥50%	colourless
<i>Shigella flexneri</i> ATCC 12022 (00126*)	50-100	luxuriant	≥50%	colourless
<i>Salmonella</i> Paratyphi B ATCC 8759	50-100	luxuriant	≥50%	colourless
<i>Salmonella</i> Enteritidis ATCC 13076 (00030*)	50-100	luxuriant	≥50%	colourless
<i>Salmonella</i> Typhi ATCC 6539	50-100	luxuriant	≥50%	colourless
<i>Staphylococcus aureus</i> susp. aureus ATCC 25923 (00034*)	≥10 ⁴	inhibited	0%	

Key : *Corresponding WDCM numbers

#- Formerly known as *Enterobacter aerogenes*. ## Formerly known as *Proteus vulgaris*

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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (3,4).

