



MacConkey Agar w/o CV w/1.2% Agar

M008B

MacConkey Agar w/o CV w/1.2% Agar is used for selective isolation and differentiation of lactose non-fermenting from lactose fermenting enteric bacteria.

Composition**

| Ingredients | Gms / Litre |
|--------------------------------|-------------|
| Peptic digest of animal tissue | 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 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), pharmaceutical (8, 9) and industrial sources (10). It is also recommended for the selection and recovery of the *Enterobacteriaceae* and related enteric gram-negative bacilli.

This medium has peptic digest of animal tissue 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 colourless and transparent and typically do not alter appearance of the medium. Sodium chloride in the medium helps to maintain osmotic balance of the cells.

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.

Cultural Response

| Organism | Inoculum (CFU) | Growth | Recovery | Colour of Colony |
|--|-----------------------|---------------|-----------------|-----------------------------------|
| Cultural Response | | | | |
| <i>Escherichia coli</i> ATCC 25922 | 50-100 | luxuriant | >=50% | pink to red with bile precipitate |
| <i>Enterobacter aerogenes</i> ATCC 13048 | 50-100 | luxuriant | >=50% | pink to red |
| <i>Enterococcus faecalis</i> ATCC 29212 | 50-100 | fair | 30-40% | pale pink to red |
| <i>Proteus vulgaris</i> ATCC 13315 | 50-100 | luxuriant | >=50% | colourless |
| <i>Salmonella Paratyphi A</i> ATCC 9150 | 50-100 | luxuriant | >=50% | colourless |
| <i>Shigella flexneri</i> ATCC 12022 | 50-100 | luxuriant | >=50% | colourless |
| <i>Salmonella Paratyphi B</i> ATCC 8759 | 50-100 | luxuriant | >=50% | colourless |
| <i>Salmonella Enteritidis</i> ATCC 13076 | 50-100 | luxuriant | >=50% | colourless |
| <i>Salmonella Typhi</i> ATCC 6539 | 50-100 | luxuriant | >=50% | colourless |
| <i>Staphylococcus aureus</i> ATCC 25923 | >=10 ³ | inhibited | 0% | |

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

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