

Technical Information

MacConkey Agar w/o CV, NaCl w/ 0.5% Sodium Taurocholate Plate

Product Code: PM 1082

Application: Recommended for the selection and recovery of the Enterobacteriaceae and related enteric gram-negative bacilli from clinical, food and water samples.

Composition**

Ingredients	Gms / Litre
Peptone	20.000
Lactose	10.000
Sodium taurocholate	5.000
Neutral red	0.040
Agar	20.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

MacConkey Agar is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of clinical specimens (1,2). Subsequently MacConkey Agar and Broth have been recommended for use in microbiological examination of foodstuffs (3) and for direct plating / inoculation of water samples for coliform counts (4). These media are also accepted by the Standard Methods for the Examination of Milk and Dairy Products (5) and pharmaceutical preparations (6). Original medium contains protein, bile salts, sodium chloride and two dyes. The selective action of this medium is attributed to bile salts, which are inhibitory to most species of gram-positive bacteria. MacConkey Agar w/o CV, NaCl and w/0.5% Sodium taurocholate is a modification of the original formulation with the exclusion of crystal violet and inclusion of sodium taurocholate instead of bile salts. Gram-negative bacteria usually grow well on the medium and are differentiated by their ability to ferment lactose. 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. *Yersinia enterocolitica* may appear as small, non-lactose fermenting colonies after incubation at room temperature.

Type of specimen

Clinical samples - faeces, urine , Food and Dairy samples, Water samples.

Specimen Collection and Handling:

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (1). For clinical samples follow appropriate techniques for handling specimens as per established guidelines (2,3). For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (6,8). 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 pack. 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 :



Ready Prepared Media

1. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
2. Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.
3. It is recommended to store the plates at 24-30°C to avoid minimum condensation.
4. Though the medium is recommended for selective isolation, further biochemical and serological testing must be carried out for further confirmation.
5. The surface of the medium should be dry when inoculated.

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.

Methodology

Either streak, inoculate or surface spread the test inoculum (50-100 CFU) aseptically on the plate.

Quality Control

Appearance

Sterile MacConkey Agar w/o CV, NaCl, w/ 0.5% Sodium Taurocholate in 90 mm disposable plates with smooth surface and absence of black particles/ cracks/ bubbles.

Colour of medium

Orange red coloured medium

Quantity of medium

25 ml of medium in 90 mm disposable plates.

pH

7.20-7.60

Sterility Check

Passes release criteria

Cultural Response

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

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Salmonella Paratyphi B ATCC 8759	50-100	luxuriant	>=50%	colourless
Salmonella Typhi ATCC 6539	50-100	luxuriant	>=50%	colourless
Salmonella Enteritidis ATCC 13076 (00030*)	50-100	luxuriant	>=50%	colourless
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	50-100	fair-good	30-40%	pale pink -red
Salmonella Paratyphi A ATCC 9150	50-100	luxuriant	>=50%	colourless
Escherichia coli ATCC 25922 (00013*)	50-100	luxuriant	>=50%	pink to red with bile precipitate
Enterococcus faecalis ATCC 29212 (00087*)	50-100	fair to good	30-40%	pale pink to red
Shigella flexneri ATCC 12022 (00126*)	50-100	fair to good	30-40%	colourless
# Klebsiella aerogenes ATCC 13048 (00175*)	50-100	luxuriant	>=50%	pale pink to red





Ready Prepared Media

Proteus hauseri ATCC 50-100 luxuriant >=50% colourless

13315

Key : *Corresponding WDCM numbers.

##Formerly known as *Proteus vulgaris*

#- Formerly known as *Enterobacter aerogenes*

Storage and Shelf Life

On receipt store between 20-30°C. 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).

Further Reading

1. MacConkey, 1900, The Lancet, ii:20.
2. MacConkey, 1905, J. Hyg., 5:333.
3. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
4. Lipps WC, Braun-Howland EB, Baxter TE, eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.
5. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
6. The United States Pharmacopoeia XXI and the National Formulary, 16th ed., 1985, United States Pharmacopoeial Convention, Inc., Washington, D.C.
7. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
8. 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.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and developmentwork carried at **CDH** is true and accurate
- **Central Drug House Pvt. Ltd.** reserves the right to make changes to specifications and information related to the products at any time.
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