MacConkey Agar w/o CV, NaC , w/ 0.5% Sodium Taurocholate M082

Intended Use:
MacConkey Agar is a differential medium 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

Directions
Suspend 55.0 grams of medium 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.Mix well and pour into sterile Petri plates. The surface of the medium should be dry when inoculated.

Principle And Interpretation
MacConkey Agar is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of clinical specimens (4,5). Subsequently MacConkey Agar and Broth have been recommended for use in microbiological examination of foodstuffs (2) and for direct plating / inoculation of water samples for coliform counts (1). These media are also accepted by the Standard Methods for the Examination of Milk and Dairy Products (8) and pharmaceutical preparations (7).

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, Food and Dairy samples, Water samples.

Specimen Collection and Handling
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).

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards(1).
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. The medium differentiates organisms on the basis of lactose fermentation. Further biochemical test must be carried out for confirmation.
2. The surface of the medium should be dry before inoculation.

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 2.0% Agar gel.

Colour and Clarity of prepared medium

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

Reaction

Reaction of 5.5% 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.

Organism	Growth	Inoculum (CFU)	Recovery	Colour of Colony
Cultural Response				
Salmonella Paratyphi B ATCC 8759	luxuriant	50-100	>=50%	colourless
Salmonella Typhi ATCC 6539	luxuriant	50-100	>=50%	colourless
Salmonella Enteritidis ATCC 13076 (00030*)	luxuriant	50-100	>=50%	colourless
Staphylococcus aureus subsp. *aureus ATCC 25923* (00034*)	fair-good	50-100	30-40%	pale pink -red
Salmonella Paratyphi A ATCC 9150	luxuriant	50-100	>=50%	colourless
Escherichia coli ATCC 25922 (00013*)	luxuriant	50-100	>=50%	pink to red with bile precipitate
Enterococcus faecalis ATCC 29212 (00087*)	fair to good	50-100	30-40%	pale pink to red
Shigella flexneri ATCC 12022 (00126*)	fair to good	50-100	30-40%	colourless
# Klebsiella aerogenes ATCC 13048 (00175*)	luxuriant	50-100	>=50%	pale pink to red
Proteus vulgaris ATCC 13315	luxuriant	50-100	>=50%	colourless

Key : *Corresponding WDCM numbers. #- *Formerly known as Enterobacter aerogenes*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°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 (2,3).

Reference

1. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
2. Isenberg, H.D. Clinical Microbiology Procedures Handb0ook. 2nd Edition
3. 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.
4. MacConkey, 1900, The Lancet, ii:20.
5. MacConkey, 1905, J. Hyg., 5:333.
6. 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.
7. The United States Pharmacopoeia XXI and the National Formulary, 16th ed., 1985, United States Pharmacopoeial Convention, Inc., Washington, D.C.
8. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

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IVD	In vitro diagnostic medical device
CE	CE Marking
30°C 10°C	Storage temperature
	Do not use if package is damaged
	HiMedia Laboratories Pvt. Limited, 23 Vadhani Industrial Estate, LBS Marg,Mumbai-86,MS,India
EC REP	CE Partner 4U ,Esdoornlaan 13, 3951 DB Maarn The Netherlands, www.cepartner 4u.eu