MacConkey Agar II w/o CV

M1819

Intended Use:

Recommended for selective isolation and differentiation of lactose fermenting and lactose non-fermenting enteric bacteria.

Composition**

Ingredients	Gms / Litre
Tryptone	1.500
Peptone	1.500
Gelatin peptone	17.000
Lactose	10.000
Bile Salts	1.500
Sodium chloride	5.000
Neutral red	0.030
Agar	13.500
Final pH (at 25°C)	7.1±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 50.03 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. 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 (1). 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 (3). These media are also accepted by the Standard Methods for the Examination of Milk and Dairy Products (4) and pharmaceutical preparations.

MacConkey Agar II w/o CV is the selective and differential medium. This media is specially designed to improve the inhibition of swarming *Proteus* species and to achieve more definitive differentiation of lactose fermenters. This medium is slightly selective since the concentration of bile salts which inhibits gram-positive microorganisms, is low in comparison with other enteric plating media. Differentiation of enteric microorganisms is achieved by combination of lactose and neutral red indicator. Gram-negative bacteria are differentiated by their ability to ferment lactose. Lactose fermenting strains grow as red or pink colonies. 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 - faece, urine, pus; Food and dairy samples;Water samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (4,5).
For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,2,8).
For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(3)
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. It is a selective medium, it is less inhibitory than MacConkey Agar, allowing gram-positive organisms to grow.
2. Further biochemical and serological tests must be carried out for further identification.

Quality Control

Appearance
Light yellow to pink homogeneous free flowing powder

Gelling
Firm comparable with 1.35% Agar gel.

Colour and Clarity of prepared medium
Red with purplish tinge clear to slightly opalescent gel forms in Petri plates.

Reaction
Reaction of 5.00% 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
Escherichia coli ATCC 25922	50-100	luxuriant	>=50%	pink to red with bile precipitate
Enterobacter aerogenes ATCC 13048	50-100	luxuriant	>=50%	pink to red
Enterococcus faecalis ATCC 29212	50-100	fair to good	30-40%	pale pink to red
Proteus vulgaris ATCC 13315	50-100	luxuriant	>=50%	colourless
Salmonella Paratyphi A ATCC 9150	50-100	luxuriant	>=50%	colourless
Shigella flexneri ATCC 12022	50-100	fair to good	30-40%	colourless
Salmonella Paratyphi B ATCC 8759	50-100	luxuriant	>=50%	colourless
Salmonella Enteritidis ATCC 13076	50-100	luxuriant	>=50%	colourless
Salmonella Typhi ATCC 6539	50-100	luxuriant	>=50%	colourless
Staphylococcus aureus ATCC 25923	>=10^4	inhibited	0%	
Escherichia coli ATCC 8739	50-100	luxuriant	>=50%	pink to red with bile precipitate
Staphylococcus aureus ATCC 6538	>=10^4	inhibited	0%	
Salmonella Typhimurium ATCC 14028	50-100	luxuriant	>=50%	colourless
Staphylococcus aureus NCIMB 9518	>=10^4	inhibited	0%	
Escherichia coli NCTC 9002	50-100	luxuriant	>=50%	pink to red with bile precipitate

Reference

1.Downes F.P. and Ito K (Eds.), 2001, Compendium of Methods For The Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C.
2.Eaton A.D, Clesceri L.S. and Greenberg A.E., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st ed, APHA, Washington DC
3.MacConkey, 1900, The Lancet, ii:20.
4.MacConkey, 1905, J. Hyg., 5:333.

Revision : 1 / 2011