TM 349 - MacCONKEY AGAR (W/O CV, W/ 0.15% BILE SALTS & NaCl)

INTENDED USE

For isolation and differentiation of lactose fermenting and lactose nonfermenting enteric bacteria.

PRODUCT SUMMARY AND EXPLANATION

MacConkey Agar is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of clinical specimens. Subsequently MacConkey Agar and Broth have been recommended for use in microbiological examination of foodstuffs and for direct plating / inoculation of water samples for coliform counts. These media are also accepted by the Standard Methods for the Examination of Milk and Dairy Products Original medium contains protein, bile salts, sodium chloride and two dyes. MacConkey Agar w/o CV w/ 0.15% Bile Salts is a modification of the original medium with the exception of crystal violet.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	17.000
Proteose peptone	3.000
Lactose	10.000
Bile salts	1.500
Sodium chloride	5.000
Neutral red	0.030
Agar	15.000

PRINCIPLE

Peptone and proteose peptone serves as a source of carbon, nitrogen, long chain amino acids and other essential growth nutrients. The selective action of this medium is attributed to bile salts, which is inhibitory to most species of gram-positive bacteria. 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 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.

INSTRUCTION FOR USE

- Dissolve 51.53 gm of medium in 1000 ml purified/distilled water.
- Heat to boiling with gentle swirling to dissolve the agar completely.
- Sterilize by autoclaving at 15 psi 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).

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to pink homogeneous free flowing powder.
Appearance of prepared medium : Orange red coloured clear to slightly opalescent gel forms in Petri plates.
pH (at 25°C) : 7.1±0.2

INTERPRETATION

Cultural characteristics observed after an incubation.

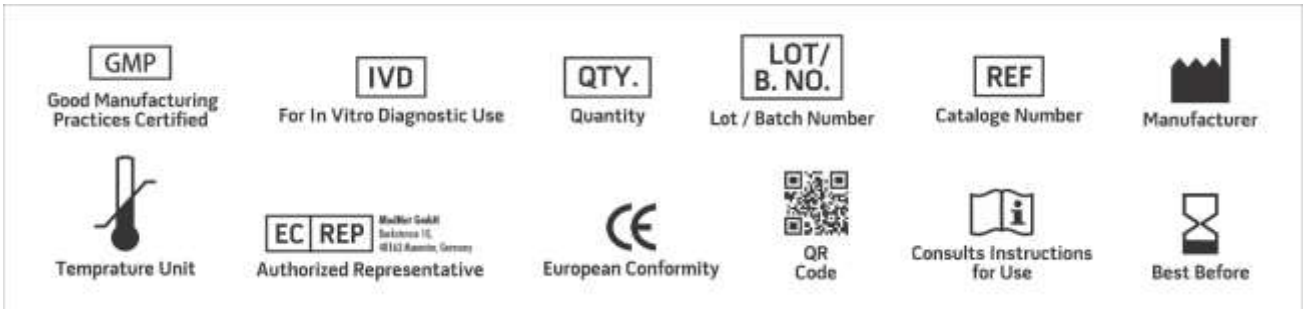
Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of Colony	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	Luxuriant	>=70 %	Pink to red with bile precipitate	35-37°C	18-24 Hours
Klebsiella aerogenes	13048	50-100	Luxuriant	>=70 %	Pink to red	35-37°C	18-24 Hours
Enterococcus faecalis	29212	50-100	None-poor	0-10%	Pale pink to red	35-37°C	18-24 Hours
Proteus vulgaris	13315	50-100	Luxuriant	>=70 %	Colourless	35-37°C	18-24 Hours
Salmonella Paratyphi A	9150	50-100	Luxuriant	>=70 %	Colourless	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Fair to good	20 -40 %	Colourless	35-37°C	18-24 Hours
Salmonella Paratyphi B	8759	50-100	Luxuriant	>=70 %	Colourless	35-37°C	18-24 Hours
Salmonella Enteritidis	13076	50-100	Luxuriant	>=70 %	Colourless	35-37°C	18-24 Hours
Salmonella Typhi	6539	50-100	Luxuriant	>=70 %	Colourless	35-37°C	18-24 Hours
Staphylococcus aureus subsp. *aureus*	25923	$>=10^3$	Inhibited	0%	-	35-37°C	18-24 Hours
Staphylococcus epidermidis	12228	$>=10^3$	Inhibited	0%	-	35-37°C	18-24 Hours

PACKAGING:
In pack size of 100 gm and 500 gm bottles.

STORAGE
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL
After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES
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 Handbook. 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., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
7. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.
***For Lab Use Only**
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