

MacCONKEY AGAR (as per BIS)
TM 1036

For isolation and differentiation of lactose fermenting and non-fermenting lactose enteric bacteria

Composition

Ingredients	Gms/Ltr.
Peptic digest of animal tissue	20.00
Agar	15.00
Lactose	10.00
Sodium taurocholate	5.00
Sodium chloride	5.00
Neutral red	0.07

* Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct Sunlight.

Instructions for Use

Dissolve 55.07gms in 1000ml distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Sterilize by autoclaving at 15 psi (121°C) for 15 minutes. Cool to 45-50°C and pour into sterile Petri plates.

Appearance: Light orange to red colour, clear solution

pH (at 25°C): 7.4 ± 0.2

Principle

MacCONKEY Agar is used for isolation and differentiation of lactose fermenting and non-fermenting lactose enteric bacteria. The medium contains Peptic digest of animal tissue which provides the nitrogenous and other essential growth compounds. Sodium chloride maintains the osmotic balance of the cells. Gram-negative bacteria usually grow well on this media 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 medium turns pink in case of lactose fermenters and yellow in case of non-lactose-fermenters, due to neutral red when the pH of the media 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. Sodium taurocholate is used as a selective agent. Agar is a solidifying agent.

Interpretation

Cultural characteristics observed after inoculating (10³CFU/ml), on incubation at 35 - 37°C for 18 - 24 hours.

Microorganisms	ATCC	Inoculum (CFU/ml)	Growth	Appearance of colony
<i>Enterobacter aerogenes</i>	13048	10 ³	Luxuriant	Pale pink to red
<i>Escherichia coli</i>	25922	10 ³	Luxuriant	Pink to red with bile ppt.
<i>Shigella flexneri</i>	12022	10 ³	Fair to good	Colourless
<i>Staphylococcus aureus</i>	25923	10 ³	Fair to good	Pale pink to red

References

- Childs E, Allan LA. *J Hyg Camb*; 51: 468. (1953).



PRODUCT DATA SHEET

2. Burman NP. *Proc Soc Wat Treat Exam.*; 4: 10-26. (1955).
3. Ministry of Health The Bacteriological Examination of Water Supplies; 4th Edition, London, H.M.S.O. (1969).