

MacConkey Agar

(With Salt)

LAB 30

Description

A selective medium for the isolation of bile tolerant organisms from faeces, urine, sewage and foodstuffs. Bile-tolerant Gram positive organisms as well as Gram negative organisms will grow on this medium. This formula is recommended by W.H.O. and other bodies for the examination of water and milk. Some strains of *Proteus* spp. will spread on this medium making interpretation difficult, for this reason LAB 2 MacConkey Agar (without salt) may be preferred as it is less prone to this phenomenon.

Formula	g/litre
Peptone	20.0
Lactose	10.0
Bile Salts	5.0
Sodium chloride	5.0
Neutral red	0.05
Agar No. 2	12.0

Method for reconstitution

Weigh 52 grams of powder, disperse in 1 litre of deionised water. Allow to soak for 10 minutes, swirl to mix then sterilise by autoclaving at 121°C for 15 minutes. Cool to 47°C and mix well before pouring into Petri dishes.

Appearance: Pink/red, clear

pH: 7.4 ± 0.2

Minimum Q.C. organisms: E. coli NCIMB 50034

Storage of Prepared Medium: Plates – up to 7 days at 2-8°C in the dark.

Inoculation: Surface plating, streaking out to single colonies.

Incubation: 37°C aerobically for 24 hours.

Growth Characteristics					
organism	colony size (mm)	shape & surface	colour	other	
E. coli	2.0-3.0	CV.E.G.	Red	(ppt around colony)	
K. aerogenes	2.0-4.0	CV.E.G.	Pink/Red	(mucoid)	
Citrobacter spp.	2.0-4.0	CV.E.G.	Pink/Red	(ppt around colony)	
Proteus spp.	1.5-2.5	CV.E.G. (spreading)	Yellow		
Salmonella spp.	1.5-2.5	CV.E.G.	Colourless		
Shigella spp.	1.0-2.0	CV.E.G. (pink)	Colourless		
		Transp.			
S. aureus	0.5-2.0	CV.E.G.	White/ Pink Orange	(dependent on	
			Opaque	lactose fermentation	
				and pigment	
				production)	
Enterococcus spp.	P.P0.5	CV.E.G.	Pink/Deep Red		
			Opaque		
P. aeruginosa	1.0-3.0	F.CR.D.	Transp. Pinkish	(colonial-variation)	

References

Environment Agency: The Microbiology of Drinking Water (2002). Methods for the Examination of Water and Associated Materials. World Health Organisation (1971). International Standards for Drinking Water. 3rd Edn. W.H.O., Geneva.

Taylor, E.W. (1958). The Examination of Water and Water Supplies. 7th Edn. Churchill, London.

Cruikshank, R. (1973). A Guide to the Laboratory Diagnosis and Control of Infection. Medical Microbiology. 12th Edn. Churchill.