

MACCONKEY BROTH

REF.	Pack size
621 01 100	100 gm
621 01 500	500 gm

Intended Use

MacConkey Broth is used for selective enrichment and enumeration of coliforms such as E.coli and enteric pathogens in faeces, Sterile urine and other specimens.

Background

For the past fifty years, MacConkey Broth has been the standard medium for the primary isolation of coliform bacteria, and has been recommended for this purpose by the Public Health Laboratory Service Water Committee and the World Health Organization. The advantages of MacConkey Broth in the presumptive coliform test are the low proportion of false positive reactions and the fact that most strains of Escherichia coli produce a positive reaction within 24 hours.

Principle

Bile salt inhibits 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. 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.

Components	gm/Liter
Peptone	20.0
Lactose	10.0
Bile salts	5.0
Sodium chloride	5.0
Neutral red	0.075

Final pH (at 25°C) 7.4± 0.2

Preparation, Storage and Stability

Store the dehydrated medium at 10-30°C and use before the expiry date on the label. Store the prepared medium at 2-8°C. After the desired amount of medium is taken out, replace the cap tightly to protect from hydration.

Procedure

1. Suspend 40 g of the powder in 1 L distilled water and mix well.
2. Distribute into containers fitted with fermentation (Durham) tubes.
3. Sterilize by autoclaving at 121°C for 15 minutes.

Quality Control Appearance

- 1-Dehydrated Appearance : Straw-pink coloured, free-flowing powder
- 2- Prepared Appearance : Dark red coloured solution
- 3- Cultural Response : Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organisms

Escherichia coli
Salmonella Choleraesuis
Staphylococcus aureus

Growth

luxuriant
fair to good
inhibited

Interpretation of the results

1-Lactose non-fermenting strains, such as Shigella and Salmonella are colourless and typically do not alter appearance of the medium

Precautions

1-The neutral red indicator is carefully selected for this formulation and therefore shows no inhibitory effect.

Bibliography

1. World Health Organization (1963) International Standards for Drinking Water 2nd ed., WHO, Geneva.
2. Dept. of Health (1937) Memo 139/Foods, HMSO, London.
3. Public Health Laboratory Service Water Subcommittee (1953) J. Hyg. Camb. 51. 268-277.