

MacConkey Broth

Intended Use

Recommended for the selective enrichment of E.coli from pharmaceutical products in accordance with the microbial limit testing by harmonized methodology of USP/EP/BP/JP.

Typical Composition (g/liter)

Gelatin peptone 20.0; Lactose monohydrate 10.0; ox bile dried 5.0; bromocresol purple 0.01

Mode of Action

This medium contains gelatine peptones, which provide essential nutrients also contain lactose, which when degraded, gives acid and gas indicating the presence of E.coli. Dehydrated bile inhibits the growth of gram-positive bacteria. Lactose fermenting organisms turn the medium yellow due to the acidity produced on lactose fermentation. Bromocresol purple is the pH indicator in the medium.

Preparation

Suspend 34.51 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. Dispense into test tubes with inverted Durham tubes .pH (at 25°C) 7.3 ± 0.2

Storage

Store between 10-30°C in a tightly closed container and the prepared medium at 15 - 25°C. Use before expiry date on the label

Specimen

For pharmaceutical samples, follow appropriate techniques for sample collection, processing as per guidelines. For clinical samples, follow appropriate techniques for handling specimens as per guidelines.

Experimental Procedure and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period.

Gas and acid produced: suggests E.coli and possibly other coliform bacteria

Only acid is produced: suggests coliform bacteria without E.coli

Quality Control

Organism	Inoculum	Growth	Acid	Gas
Escherichia coli ATCC 25922	50 - 100	Luxuriant	Positive reaction, yellow color	Positive reaction
Escherichia coli NCTC 9002	50 - 100	Luxuriant	Positive reaction, yellow color	Positive reaction
Klebsiella aerogenes ATCC 13048	50 - 100	Luxuriant	Positive reaction, yellow color	Positive reaction
Salmonella Choleraesuis ATCC 12011	50 - 100	Fair - Good	Negative reaction	Negative reaction
Staphylococcus epidermidis ATCC 25923	$\geq 10^3$	Inhibited	-	-

Reference

1. British Pharmacopeia, 2016, the stationery office British Pharmacopeia
2. European Pharmacopeia II, Chapter VIII, 10
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition
4. The United States Pharmacopoeia, 2019, The United States Pharmacopoeia Convention. Rockville, MD