

## TM 1238 - MacCONKEY BROTH W/ NEUTRAL RED (IS : 5887 (Part I and II) 1976, reaffirmed 2005)

### INTENDED USE

For selective enrichment and enumeration of coliforms.

### PRODUCT SUMMARY AND EXPLANATION

MacConkey Broth is a differential medium used for detection and enumeration of coliforms from a variety of foodstuffs, water samples & clinical specimens. The medium differentiates the organisms on the basis of lactose fermentation which is indicated by a colour change. This medium is recommended by BIS committee under the specifications IS:5887(Part I and Part II) -1976.

### COMPOSITION

Ingredients	Gms / Ltr
Peptic digest of animal tissue	20.000
Lactose	10.000
Sodium taurocholate	5.000
Sodium chloride	5.000
Neutral red	0.075

### PRINCIPLE

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. The selective action of these media is attributed to the presence of bile salts, which are inhibitory to most species of gram-positive bacteria. Gram-negative bacteria usually grow well on these media and are differentiated by their ability to ferment lactose. The colour change of the medium shown by lactose fermenters is due to production of acid from lactose and a subsequent colour change of the indicator dye when the pH of the media falls below 6.8. The medium turns pink in case of lactose fermenters and yellow in case of non- lactose fermenters, due to neutral red. Organism producing gas can be observed in preparation with Durham tubes.

### INSTRUCTION FOR USE

- Dissolve 40.07 grams in 1000 ml distilled water.
- Gently heat to boiling with gentle swirling and dissolve the medium completely.
- Dispense into test tubes with inverted Durham's tube.
- Sterilize by autoclaving at 15 psi (121°C) for 15 minutes.
- Cool the tubes before inoculation.

### QUALITY CONTROL SPECIFICATIONS

Appearance of Dehydrated powder	:	Pale yellow to pink, homogeneous free flowing powder
Appearance of Prepared medium- Basal medium	:	Red colored, clear solution
pH (at 25°C)	:	7.5± 0.2

### INTERPRETATION

Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Acid production	Gas production	Incubation Temperature	Incubation Period
<i>Klebsiella aerogenes</i>	13048	50-100	Luxuriant	Positive reaction	Positive reaction	35-37°C	18-24 Hours
<i>Escherichia coli</i>	25922	50-100	Luxuriant	Positive reaction	Positive reaction	35-37°C	18-24 Hours
<i>Enterococcus faecalis</i>	29212	50-100	None-Poor	Positive reaction	Negative reaction	35-37°C	18-24 Hours
<i>Proteus mirabilis</i>	25933	50-100	Luxuriant	Negative reaction	Negative reaction	35-37°C	18-24 Hours
<i>Salmonella Choleraesuis</i>	12011	50-100	Fair to Good	Negative reaction	Negative reaction	35-37°C	18-24 Hours
<i>Klebsiella pneumoniae</i>	13883	50-100	Luxuriant	Positive reaction	Positive reaction	35-37°C	18-24 Hours
<i>Staphylococcus aureus</i>	25923	≥1000	Inhibited	-	-	35-37°C	18-24 Hours

### PACKAGING

In 100 & 500 gm packaging size.

### STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°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.

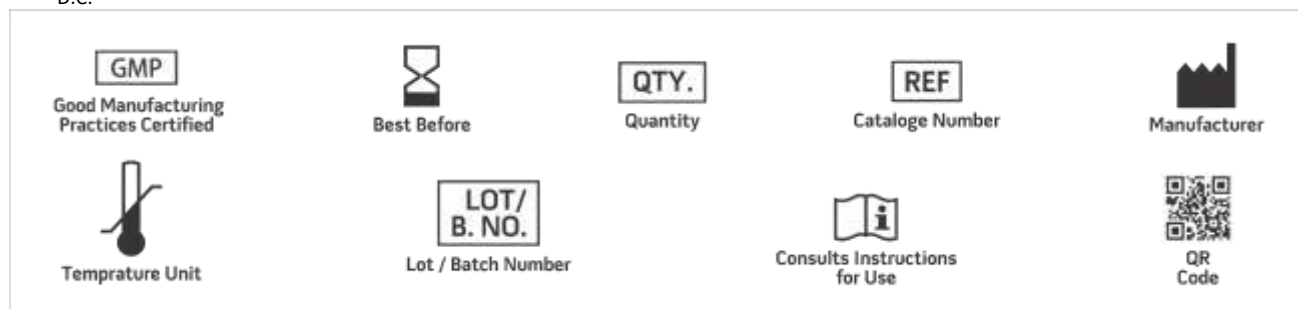
**Product Deterioration:** Do not use powder if they show evidence of microbial contamination, discoloration, drying, or other signs of deterioration.

### DISPOSAL

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

### REFERENCES

1. Bureau of Indian Standards IS :5887 (Part II)- 1976, reaffirm 1986.
2. MacConkey, 1905, J. Hyg., 5:333.
3. MacConkey, 1900, The Lancet, ii:20.
4. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
5. 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.



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

**\*For Lab Use Only**  
**Revision: 05<sup>th</sup> Oct. 2019**

