

**INTENDED USE**

For selective isolation and differentiation of coliforms and other enteric pathogens.

**Composition**

Ingredients	Gms/Ltr.
Pancreatic digest of Gelatin	17.00
Agar	15.00
Lactose	10.00
Sodium chloride	5.00
Peptic digest of animal tissue	1.50
Casein enzymatic hydrolysate	1.50
Bile powder	1.50
Neutral red	0.03
Crystal violet	0.001

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

**PRODUCT SUMMARY AND EXPLANATION**

MacConkey Agar (W/0.15% Bile Salts, CV & NaCl) is used for selective isolation and differentiation of coliforms and other enteric pathogens. The medium can be used for the direct plating of water samples for coliform bacilli, for the examination of food samples for food poisoning organisms and for the isolation of *Salmonella* and *Shigella* species in cheese. USP recommends this medium for use in the performance of Microbial Limit Tests.

**PRINCIPLE**

The medium consists of Peptic digest of animal tissue, Peptic digest of Gelatin and Casein enzymatic hydrolysate as the sources of nitrogen, carbon and amino acids for the growth of organisms. Medium incorporated with two types of dyes, Crystal violet & Neutral red. Many of the gram-positive bacteria are inhibited by the action of Bile salt & Crystal violet. Lactose is a fermentable sugar. Lactose fermenting bacteria grow as red or pink and may be surrounded by a zone of acid precipitated bile. 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. Lactose nonfermenting strains, such as *Salmonella* are colourless and transparent and typically do not alter appearance of the medium. *E.coli* may appear as small, lactose fermenting colonies after incubation at room temperature with good growth of colonies having pink to red in colour.



## PRODUCT DATA SHEET

### INSTRUCTIONS FOR USE

- 1) Dissolve 51.50gms in 1000 ml of distilled water.
- 2) Gently heat with gentle swirling to dissolve the medium completely.
- 3) Sterilize by autoclaving at 15psi (121°C) for 15 minutes.
- 4) Cool the medium at 45-50°C.
- 5) Mix well and pour into sterile Petri plates.

### QUALITY CONTROL SPECIFICATIONS

**Appearance Dehydrated powder:** Light yellow to pink homogeneous free flowing powder

**Appearance of the prepared medium:** Red with purple tinge colour, clear to slightly opalescent gel

**pH (at 25°C):** 7.1±0.2

### CULTURE RESPONSE

Cultural characteristics observed after incubation at 35± 2°C for 18 – 24 hours.

Microorganisms	ATCC	Inoculum (CFU/ML)	Growth	Recovery	Appearance
<i>Escherichia coli</i>	25922	10 <sup>3</sup>	Luxuriant	≥ 50%	Pink to red with bile ppt.
<i>Enterobacter aerogenes</i>	13048	10 <sup>3</sup>	Luxuriant	≥ 50%	Pink to red colour
<i>Salmonella typhimurium</i>	14028	10 <sup>3</sup>	Fair to good	≥ 30-40%	Colourless
<i>Salmonella typhi</i>	6539	10 <sup>3</sup>	Luxuriant	≥ 50%	Colourless
<i>Enterococcus faecalis</i>	29212	10 <sup>3</sup>	Inhibited	0%	Inhibited
<i>Staphylococcus aureus</i>	25923	10 <sup>3</sup>	Inhibited	0%	Inhibited

### STORAGE & STABILITY

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.

### REFERENCES

1. MacConkey. The Lancet, ii: 20. (1900).
2. MacConkey, J. Hyg., 5:333. (1905).
3. Murray P. R, Baron E, J., Jorgensen J. H., Pfaller M. A., Tenover F. C., Tenover F. C., (Eds.), 8th Ed., Manual of



## PRODUCT DATA SHEET

- Clinical Microbiology, ASM, Washington, D.C. (2003).
4. FDA Bacteriological Analytical Manual, 18th Ed., AOAC, Washington, D.C. (2005).
  5. Downes F. P and Ito K. (Ed.), Compendium of Methods for the Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C. (2001).
  6. Greenberg A. E., Clesceri L. S. and Eaton A. D., (Eds.), Standard Methods for the Examination of Water and Wastewater, 21st ed., APHA, Washington, D.C. (2005).
  7. Wehr H. M. and Frank J. H., Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C. (2004).
  8. The United States Pharmacopoeia XXI and the National Formulary, 16th ed., United States Pharmacopoeial Convention, Inc., Washington, D.C. (1985).