

# TECHNICAL DATA SHEET

## MACCONKEY AGAR PLATES

P90/MAC - 20

### INTENDED USE

MacConkey agars are slightly selective and differential media mainly used for the detection and isolation of gram-negative organisms from industrial samples.

### TYPES OF SAMPLE

- Clinical
- Food
- Pharmaceutical
- Water

### PRINCIPLE

MacConkey Agar contains crystal violet and bile salts that inhibit gram-positive organisms and allow gram-negative organisms to grow. Isolated colonies of Coliform bacteria are brick red in colour and may be surrounded by a zone of precipitated bile. This bile precipitate is due to a local pH drop around the colony due to lactose fermentation. Peptones are sources of nitrogen and other nutrients. Lactose is a fermentable carbohydrate. When lactose is fermented, a local pH drops around the colony causes a color change in the pH indicator (neutral red) and bile precipitation. Bile salts no.3 and crystal violets are selective agents that inhibit growth of gram-positive organisms. Sodium chloride maintains osmotic balance in the medium. Agar is the solidifying agent.

### INGREDIENTS

Approximate Formula Per Liter	
Pancreatic Digest of Gelatin	17.0 g
Peptones (meat and casein).	03.00 g
Lactose	10.0 g
Bile Salts No. 3	1.5 g
Sodium Chloride	5.0 g
Agar	13.5 g
Neutral Red	0.03 g
Crystal Violet	1.0 mg

- Final pH  $7.1 \pm 0.2$  at  $25^{\circ}\text{C}$

### PHYSICAL PARAMETERS OF PREPARED PLATES

- Appearance: 90 mm petri plates with a smooth surface and absence of any particles, cracks, or bubbles.
- Colour: Reddish Purple
- Clarity: Slightly Opalescent
- Volume: 20-22 ml

### STERILITY CHECK

Sterility of the plates is checked by incubating the plates at  $35 \pm 2^{\circ}\text{C}$  for 3 days.

### MICROBIAL PERFORMANCE DATA

Culture characteristics observed after inoculating 50-100 CFU and incubate at  $35 \pm 2^{\circ}\text{C}$  for 24-48 hours. Examine plates after 24 to 48 h for amount of growth, colony size and colour.

Test Strains	ATCC No.	Growth	Colour of the Colony
<i>Escherichia coli</i>	ATCC 25922	Good	Pink to red with bile precipitation
<i>Proteus mirabilis</i>	ATCC 25933	Good	Colourless
<i>Salmonella typhimurium</i>	ATCC 14028	Good	Colourless
<i>Enterococcus faecalis</i>	ATCC 29212	Marked To Complete Inhibition	-
<i>Staphylococcus aureus</i>	ATCC 25923	Inhibited	-

### LIMITATIONS & COMPLEMENTARY TESTS

- Only presumptive identification is possible by observing colony morphology. However, for the final identification, they have to be sub-cultured, and confirmation tests should be done.
- The final identification must be confirmed by biochemical tests, immunological tests or by mass spectrophotometry. They can be done directly from the suspicious colonies observed on the medium.

### PRECAUTIONS

- For in-Vitro diagnostic use. Read the label details and storage before opening the pack.
- Wear protective gloves / protective clothing / eye protection / face protection.

- Follow good microbiological lab practices while handling specimens and culture.

## **PACK SIZE AND PACKAGING**

20 plates per kit packed with gamma irradiated packing material.

## **STORAGE & SHELF LIFE**

- Store at 10 -15 °C.
- Use before the expiry date mentioned on the label.
- Product is temperature sensitive; protect from direct sunlight, excessive heat, moisture, and freezing.

## **DISPOSAL**

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Materials that have come in contact with infectious / clinical samples must be decontaminated and disposed of in accordance with current laboratory techniques and regulations.

## **REFERENCE**

- Levine, M., and H.W. Schoenlein. 1930. A compilation of culture media for the cultivation of microorganisms. The Williams & Wilkins Company, Baltimore
- Baron, E.J., L.R. Peterson, and S.M. Finegold. 1994. Bailey & Scott's diagnostic microbiology, 9th ed. Mosby-Yearbook, Inc., St. Louis.
- BD Raw Material Technical literature.