

## Technical Information

### M-MacConkey Broth

#### Product Code: DM 2125

**Application:** - M-MacConkey Broth is used for detection of lactose fermenting and non fermenting enteric bacteria using membrane filter technique.

#### Composition\*\*

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Bile salts	4.000
Sodium chloride	5.000
Lactose	30.000
Bromocresol purple	0.120
Final pH ( at 25°C)	7.4±0.2

\*\*Formula adjusted, standardized to suit performance parameters

#### Principle & Interpretation

M-MacConkey Broth is used for the detection and enumeration of lactose fermenting enteric bacteria from milk and water using membrane filter technique (3). Saturate sterile absorbent cotton - pads with M-MacConkey Broth. The membrane filter is then aseptically placed on the saturated sterile absorbent cotton pads.

MacConkey broth is widely used as a differential medium for detection and enumeration of coliforms from wide variety of clinical samples, food, water etc. which can be identified by colour change of the medium specific to the indicator used (1,2). Peptic digest of animal tissue supplies necessary nitrogen source. Lactose acts as fermentable carbohydrate source. Sodium chloride maintains osmotic balance of the cells. The selective action of this medium is attributed to bile salts, which are inhibitory to most species of gram-positive bacteria. Gram-negative bacteria usually grow well on the medium and are differentiated by their ability to ferment lactose. The colour change of the medium shown by lactose fermentors is due to production of acid from lactose and a subsequent colour change of the dye when the pH of medium falls below 6.8. Lactose non-fermenting strains, such as *Shigella* and *Salmonella* do not alter the appearance of the medium. Due the presence of bromocresol purple in the medium, *Escherichia coli* changes the colour of the medium to yellow due to lactose fermentation and colourless to slight pink in case of nonfermenters.

#### Methodology

Suspend 49.12 grams of dehydrated powder media in 1000 ml distilled water. Mix thoroughly & heat if necessary to dissolve the medium completely. Distribute into tubes with inverted Durham tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

#### Quality Control

##### Appearance

Cream to yellow homogeneous free flowing powder

##### Colour and Clarity

Purple coloured clear solution without any precipitate

##### Reaction

Reaction of 4.91% w/v aqueous solution at 25°C. pH : 7.4±0.2

##### pH Range

7.20-7.60



Dehydrated Culture Media  
Bases / Media Supplements

### Cultural Response

DM 2125: Cultural characteristics observed after an incubation at 35 - 37°C for 18 - 24 hours.

Organism	Inoculum (CFU)	Growth	Colour of colony (on membrane filter)
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	yellow
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	yellow
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	fair - good	colourless to slightly pink
<i>Staphylococcus aureus</i> ATCC 25923	$\geq 10^3$	inhibited	-

### Storage and Shelf Life

**Dried Media:** Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

**Prepared Media:** 2-8° in sealable plastic bags for 2-5 days.

### Further Reading

1. MacConkey, 1900, The Lancet, ii:20.
2. MacConkey, 1905, J. Hyg., 5:333.
3. Harrigan W.F. and McCance M.E. (Eds.), 1976, Laboratory Methods in Food and Dairy Microbiology, Academic Press, London.

### Disclaimer :

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