



M-MacConkey Broth

M1125

M-MacConkey Broth is recommended for detection of lactose fermenting and nonfermenting 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

Directions

Suspend 49.12 grams in 1000 ml distilled water. 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.

Principle And Interpretation

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 provides necessary nitrogen source. Lactose serves 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.

M-MacConkey Broth is recommended 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.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

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

7.20-7.60

Cultural Response

M1125: 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

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

Reference

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.

Revision : 2 / 2015

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.