M-MacConkey Broth

M-MacConkey Broth is recommended for detection of lactose fermenting and nonfermenting enteric bacteria using membrane filter technique.

**Composition**

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

**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.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Colour of colony (on membrane filter)</th>
</tr>
</thead>
</table>

Please refer disclaimer Overleaf.
### Escherichia coli ATCC 25922
- **50-100 luxuriant yellow**

### Enterobacter aerogenes ATCC 13048
- **50-100 luxuriant yellow**

### Salmonella Typhimurium ATCC 14028
- **50-100 fair - good colourless to slightly pink**

### Staphylococcus aureus ATCC 25923
- **>=10³ 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

Revision: 2 / 2015