M-FC Agar Base

Intended Use:
Recommended for detection and enumeration of faecal coliforms using membrane filtration technique at higher temperature (44.5°C).

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tryptose</td>
<td>10.000</td>
</tr>
<tr>
<td>Proteose peptone</td>
<td>5.000</td>
</tr>
<tr>
<td>Yeast extract</td>
<td>3.000</td>
</tr>
<tr>
<td>Lactose</td>
<td>12.500</td>
</tr>
<tr>
<td>Bile salts mixture</td>
<td>1.500</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Aniline blue</td>
<td>0.100</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</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 52.1 grams in 1000 ml purified / distilled water containing 10 ml 1% Rosolic Acid (FD058). Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation
M-FC Agar Base, designed by Geldreich et al (5) is used for the detection and enumeration of faecal coliforms using the membrane filter technique. This medium is based on the property of faecal coliforms to grow at 44-45°C (1). M-FC Agar Base is recommended by APHA (4) and by various other standards for detection of faecal coliforms (2,8,9). APHA recommends the membrane filtration procedure and delayed incubation for faecal coliforms.

Proteose peptone, tryptose and yeast extract provide necessary nutrients for the growth of faecal coliforms. Lactose is the carbon source as well as fermentable carbohydrate in the medium. Bile salts inhibit the growth of contaminating gram-positive microorganisms. Aniline blue is a triphenyl methane dye which suppresses the growth of many gram-positive microorganisms. Aniline blue along with rosolic acid forms the indicator system of the medium.

Membrane filters, through which water sample is passed are aseptically placed onto M-FC Agar base plates. If total coliforms are to be estimated, incubation is carried out at 35-37°C whereas if faecal coliform count is to be estimated, incubation is done at 44-45°C. Coliforms will form blue colonies whereas non-coliforms will form gray coloured colonies on M-FC Agar Base.

Type of specimen
Water samples

Specimen Collection and Handling:
For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(1) After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions:
Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations:
1. Due to nutritional variations certain strains may show poor growth.
Performance and Evaluation
Performance of the medium is expected when used as per the direction on the label within the recommended temperature.

Quality Control

Appearance
Light yellow to greyish yellow, may have slight green or blue tinge homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
After Addition of 1% Rosolic Acid : Red coloured slightly opalescent gel forms in Petri plates

Reaction
Reaction of 5.21% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH
7.20-7.60

Cultural Response
Cultural characteristics observed with added 1% Rosolic Acid (FD058) after an incubation at different temperatures for 22-24 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth at 35-37°C</th>
<th>Growth at 45.5°C</th>
<th>Colour of colony (on membrane filter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterococcus faecalis ATCC 29212 (00087*)</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>inhibited</td>
<td></td>
</tr>
<tr>
<td>Escherichia coli ATCC 25922 (00013*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>luxuriant</td>
<td>light blue</td>
</tr>
<tr>
<td>Salmonella Typhimurium ATCC 14028 (00031*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>inhibited</td>
<td>pinkish</td>
</tr>
<tr>
<td>Shigella flexneri ATCC 12022 (00126*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>inhibited</td>
<td>pinkish</td>
</tr>
</tbody>
</table>

Key : *Corresponding WDCM numbers.

Storage and Shelf Life
Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle inorder to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal
User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (6,7).
Reference


Disclaimer:

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