Monsur Medium is used for selective isolation and differentiation of *Vibrio cholerae* and other *Vibrio* species from pathological samples.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casein enzymic hydrolysate</td>
<td>10.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>10.000</td>
</tr>
<tr>
<td>Sodium taurocholate</td>
<td>5.000</td>
</tr>
<tr>
<td>Sodium carbonate</td>
<td>1.000</td>
</tr>
<tr>
<td>Gelatin</td>
<td>30.000</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</td>
</tr>
<tr>
<td><strong>Final pH (at 25°C)</strong></td>
<td>8.5±0.2</td>
</tr>
</tbody>
</table>

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

**Directions**

Suspend 7.1 grams in 100 ml warm distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 115°C (10 lbs pressure) for 20 minutes. Cool to 50°C. Aseptically add 0.5 ml sterile 1% Potassium Tellurite Solution (FD052). Mix well and pour into sterile Petri plates.

**Principle And Interpretation**

*Vibrio* are fairly easy to isolate from both clinical and environmental material, though some species may require growth factors and/or vitamins. *Vibrio parahaemolyticus* is the leading cause of bacterial diarrhoea associated with the consumption of contaminated food products. *Vibrio cholerae* is a non halophilic *Vibrio* which cannot grow in media with a concentration of sodium chloride greater than 5-6% and is able to grow in media lacking NaCl (2). Human disease is associated with ingestion of contaminated water or food. *V. cholerae* is the etiological agent of a secretory diarrhea spread by the faecal-oral route. The most critical virulence factor of *V. cholerae* is CT (cytotoxin), which is responsible for the main symptom of the cholera disease (1). Monsur Medium was formulated by Monsur (3) and recommended by WHO (4) for the isolation of *V. cholerae* and other *Vibrio* species from pathological samples like faeces or rectal swabs. This medium is also known as Taurocholate Tellurite Gelatin Agar. On this medium, the colonies are often surrounded by a gelatin liquefaction halo, which becomes definite and clearly visible after 48 hours incubation.

Casein enzymic hydrolysate in the medium supplies essential nutrients. Sodium taurocholate inhibits the contaminating gram-positive bacteria. Potassium tellurite is a selective and differential agent. It inhibits many gram-positive bacteria and due to the reduction reaction the colonies form a grey to black colour. Sodium chloride maintains the osmotic equilibrium while sodium carbonate helps in maintaining the elevated pH of the medium. Gelatin acts as an additional carbon and energy source. The high pH and potassium tellurite are inhibitory to most *Enterobacteriaceae* and gram-positive bacteria, though *Proteus* may form grey centered colonies without a halo. After 24 hours *Vibrios* show small translucent colonies with a grey-black center and a turbid halo, at 48 hours and longer, colonies become black centered with a well-defined halo.

**Quality Control**

**Appearance**

Cream to greenish yellow coarse free flowing powder

**Gelling**

Firm, comparable with 1.5% Agar gel and 3.0% Gelatin gel

**Colour and Clarity of prepared medium**

Yellow coloured clear to slightly opalescent gel forms in Petri plates

**Reaction**

Reaction of 7.1% w/v aqueous solution at 25°C. pH : 8.5±0.2
HiMedia Laboratories

Technical Data

**pH**

8.30-8.70

**Cultural Response**

M474: Cultural characteristics observed after an incubation at 35-37°C for 18–48 hours with added 1% Potassium Tellurite Solution (FD052).

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Recovery</th>
<th>Colour of colony</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Proteus mirabilis</em> ATCC 25933</td>
<td>50-100</td>
<td>none-poor</td>
<td>&lt;=10%</td>
<td>black</td>
</tr>
<tr>
<td><em>Vibrio cholerae</em> ATCC 15748</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
<td>grey</td>
</tr>
<tr>
<td><em>Vibrio parahaemolyticus</em> ATCC 17802</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
<td>light grey</td>
</tr>
</tbody>
</table>

**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 : 1 / 2011

Disclaimer:

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