AC Agar

AC Agar is recommended for cultivation of wide variety of microorganisms particularly for sterility testing.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proteose peptone</td>
<td>20.000</td>
</tr>
<tr>
<td>Beef extract</td>
<td>3.000</td>
</tr>
<tr>
<td>Yeast extract</td>
<td>3.000</td>
</tr>
<tr>
<td>Malt extract</td>
<td>3.000</td>
</tr>
<tr>
<td>Dextrose</td>
<td>5.000</td>
</tr>
<tr>
<td>Ascorbic acid</td>
<td>0.200</td>
</tr>
<tr>
<td>Agar</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Final pH (at 25°C): 7.2±0.2

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

**Directions**

Suspend 35.2 grams in 1000 ml of distilled water. Heat to boiling to dissolve the medium completely. Distribute in tubes or bottles to give the desired depth and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

If the medium is not used on same day, it is advisable to drive off dissolved gases by boiling or steaming in the autoclave and cool without agitation.

**Principle And Interpretation**

AC Medium support an early and luxuriant growth of aerobic, anaerobic and microaerophilic microorganisms. Many pathogenic and saprophytic aerobes can also be isolated and cultivated using AC Medium (1). This medium can also be used for sterility testing of solutions and biological products not containing mercurial preservatives. AC Agar does not exhibit the toxicity shown by some media containing sodium thioglycollate for some organisms as reported by Christensen (2) and Malin and Finn (3). Earlier studies performed have reported the usefulness of using this medium for the cultivation of a wide variety of organisms (4, 5). Kolb and Schneither (6) used AC Agar to test the viability of Bacillus anthracis after exposure to methyl bromide to test the efficiency of methyl bromide as a germicidal and sporicidal agent.

Proteose peptone, beef extract, yeast extract and malt extract serve as the carbon and nitrogen sources in addition to being a source of vitamins and cofactors. Dextrose serves as the fermentable carbohydrate source of energy. Ascorbic acid in the media helps to improve the clarity of the medium.

**Quality Control**

**Appearance**

Cream to yellow homogeneous free flowing powder

**Gelling**

Semisolid, comparable with 0.1 % Agar gel.

**Colour and Clarity of prepared medium**

Medium amber coloured clear to slightly opalescent solution

**Reaction**

Reaction of 3.52% w/v aqueous solution at 25°C. pH : 7.2±0.2

**pH**

7.00-7.40

**Cultural Response**

M337: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours (Clostridium species incubated anaerobically).
<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Clostridium perfringens</em></td>
<td>50-100</td>
<td>luxuriant</td>
</tr>
<tr>
<td>ATCC 12919</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Escherichia coli</em> ATCC 25922</td>
<td>50-100</td>
<td>luxuriant</td>
</tr>
<tr>
<td><em>Neisseria meningitidis</em> ATCC 13090</td>
<td>50-100</td>
<td>luxuriant</td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em> ATCC 25923</td>
<td>50-100</td>
<td>luxuriant</td>
</tr>
<tr>
<td><em>Streptococcus mitis</em> ATCC 9811</td>
<td>50-100</td>
<td>luxuriant</td>
</tr>
<tr>
<td><em>Streptococcus pneumoniae</em> ATCC 6503</td>
<td>50-100</td>
<td>luxuriant</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 label.

**Reference**