Nutrient Gelatin

Nutrient Gelatin is recommended for detection of gelatin liquefaction by proteolytic microorganisms.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peptic digest of animal tissue</td>
<td>5.000</td>
</tr>
<tr>
<td>Meat extract</td>
<td>3.000</td>
</tr>
<tr>
<td>Gelatin</td>
<td>120.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>30.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.0±0.2</td>
</tr>
</tbody>
</table>

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

**Directions**

Suspend 158 grams in 1000 ml of warm (50°C) water. Heat to 50°C to dissolve the medium completely. Dispense into test tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 12 minutes.

**Principle And Interpretation**

Nutrient Gelatin is prepared as per the formulation recommended by BIS (1). Gelatin liquefaction is one of the essential tests for the differentiation of enteric bacilli (2). This medium can also be used for the microbial plate counts of water.

Peptic digest of animal tissue and meat extract supply nutrients for the growth of nonfastidious organisms. Organisms produce gelatinase, a proteolytic enzyme active in the liquefaction of gelatin.

To test gelatin liquefaction the strains are stab inoculated in Nutrient Gelatin. Many species require prolonged incubation (3, 4) for gelatin liquefaction. Gelatin is solid at 20°C or less temperature and liquid at 35°C or higher temperature. Gelatin liquefies at about 28°C, so incubation is carried out at 35°C but kept in a refrigerator for about 2 hours before interpretation of the results (3). Liquefaction of gelatin occurs on the surface layer, so care should be taken not to shake the tubes (5). Control is run along with every testing as gelling ability of gelatin varies (3) and also the gelatin concentration should not exceed 12% as it may inhibit growth (6). For plate counts of water, the incubation is carried out at 20-22°C upto 30 days.

**Quality Control**

**Appearance**

Cream to yellow coloured homogeneous free flowing slightly coarse powder

**Gelling**

Semisolid, comparable with 12% Gelatin gel.

**Colour and Clarity of prepared medium**

Light amber coloured clear to slightly opalescent gel forms in tubes

**Reaction**

Reaction of 15.8% w/v aqueous solution at 25°C. pH : 7.0±0.2

**pH**

6.80-7.20

**Cultural Response**

M060S: Cultural characteristics after 1 to 7 days at 35 - 37°C.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Gelatinase</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Clostridium perfringens</em> ATCC 12924</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>Positive reaction</td>
</tr>
<tr>
<td><em>Bacillus cereus</em> ATCC 10876 50-100</td>
<td></td>
<td>good-luxuriant</td>
<td>Positive reaction</td>
</tr>
</tbody>
</table>
Bacillus subtilis ATCC 6633 50-100 good-luxuriant Positive reaction
Escherichia coli ATCC 25922 50-100 good-luxuriant Negative reaction
Proteus vulgaris ATCC 13315 50-100 good-luxuriant Positive reaction
Staphylococcus aureus ATCC 25923 50-100 good-luxuriant Positive reaction

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

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