Actinomycete Isolation Agar is used for isolation and propagation of *Actinomyces* from soil and water.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium caseinate</td>
<td>2.000</td>
</tr>
<tr>
<td>L-Asparagine</td>
<td>0.100</td>
</tr>
<tr>
<td>Sodium propionate</td>
<td>4.000</td>
</tr>
<tr>
<td>Dipotassium phosphate</td>
<td>0.500</td>
</tr>
<tr>
<td>Magnesium sulphate</td>
<td>0.100</td>
</tr>
<tr>
<td>Ferrous sulphate</td>
<td>0.001</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</td>
</tr>
<tr>
<td><strong>Final pH (at 25°C)</strong></td>
<td>8.1±0.2</td>
</tr>
</tbody>
</table>

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

**Directions**

Suspend 21.70 grams in 1000 ml distilled water containing 5 ml glycerol. Heat to boiling to dissolve the medium completely. Dispense as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

**Principle And Interpretation**

*Actinomyces* are gram-positive bacteria, which show marked chemical and morphological diversity but form a distinct evolutionary line of organisms that range from coccoid and pleomorphic forms to branched filaments (1). *Actinomyces* form an integral part of soil, water and vegetation. *Actinomyces* development leads to the formation of volatile metabolites (2). Traces of these volatile metabolites are sufficient to impart disagreeable odour to water or a muddy flavour to fish (3). *Actinomyces* also cause disruptions in wastewater treatment by forming massive growths, which are capable of producing thick foam in the activated sludge process (4, 5). Actinomyces Isolation Agar used for isolation and propagation of *Actinomyces* from soil and water was formulated by Olsen (6).

Actinomycete Isolation Agar contains sodium caseinate as nitrogen source. Asparagine in addition to being an amino acid is also a source of nitrogen. Sodium propionate is used as a substrate in anaerobic fermentation. Dipotassium phosphate provides the buffering system. The sulphates serve as source of sulphur and metallic ions. Glycerol serves as an additional source of carbon.

Inoculate the plates with 1 drop of diluted culture or specimen and spread over the surface using a sterile bent glass rod. Incubate at 35-37°C for 40-72 hours. The media can be used for long term storage after sufficient growth is obtained. Agar slants are used for maintenance of cultures over a shorter period of time.

**Quality Control**

**Appearance**

Cream to yellow homogeneous free flowing powder

**Gelling**

Firm, comparable with 1.5% Agar gel

**Colour and Clarity of prepared medium**

Yellow to light amber coloured opalescent gel forms in Petri plates

**Reaction**

Reaction of 2.2% w/v aqueous solution containing 0.5% v/v glycerol at 25°C. pH : 8.1±0.2

**pH**

7.90-8.30

**Cultural Response**

M490: Cultural characteristics observed after an incubation at 35-37°C for 40-72 hours.

**Organism**

Growth
Nocardia asteroides ATCC 19427
good-luxuriant

Escherichia coli ATCC 25922
inhibited

Streptomyces albus subsp albus ATCC 3004
good-luxuriant

Streptomyces lavendulae ATCC 19247
good-luxuriant

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