Mueller Tellurite Agar Base

Mueller Tellurite Agar Base is used for the isolation, cultivation and differentiation of *Corynebacterium diphtheriae*.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casein acid hydrolysate</td>
<td>20.000</td>
</tr>
<tr>
<td>Casein powder</td>
<td>5.000</td>
</tr>
<tr>
<td>Potassium dihydrogen phosphate</td>
<td>0.300</td>
</tr>
<tr>
<td>Magnesium sulphate, heptahydrate</td>
<td>0.100</td>
</tr>
<tr>
<td>L-Tryptophan</td>
<td>0.050</td>
</tr>
<tr>
<td>Agar</td>
<td>20.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.4±0.1</td>
</tr>
</tbody>
</table>

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

**Directions**

Suspend 45.45 grams of dehydrated media in 975 ml distilled water. Gently heat and bring to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool quickly to 50°C and aseptically add 25 ml Mueller Tellurite Serum (FD100). Mix thoroughly to distribute into sterile Petri plates. Allow the surface of the plates to dry by partially removing the covers during solidification.

**Principle And Interpretation**

*Corynebacterium diphtheriae* is gram-positive, facultative anaerobic, non-motile bacteria. It is the etiological agent for diphtheria. Many species of Corynebacteria can be isolated from various places such as soil, water, blood, and human skin. Pathogenic strains of *Corynebacteria* can infect plants, animals, or humans. Though humans are now the only known reservoir for the disease. The bacterium is generally found in temperate zones but may also be found in other parts of the world. Various tellurite media such as Mcleods (1), Hoyles (2), or CTBA (3) have been used for isolation and differentiation of *C. diphtheriae*.

Mueller Tellurite Agar has been recommended (4) for isolation, cultivation and differentiation of *C. diphtheriae*. Potassium tellurite in the medium inhibits the growth of most of the normal flora of the upper respiratory tract allowing *C. diphtheriae* and other saprophytic Corynebacteria to grow.

The serum used in medium enhances granule formulation.

Casein acid hydrolysate and L-tryptophan provide nitrogenous compounds. Magnesium sulphate supplies essential ions required by the organisms. *C. diphtheriae* forms grayish black colonies surrounded by dark brown halo due to H2S production.

**Quality Control**

**Appearance**
Cream to yellow homogeneous free flowing powder

**Gelling**
Firm, comparable with 2.0% Agar gel.

**Colour and Clarity of prepared medium**
Yellow coloured clear to slightly opalescent gel forms in Petri plates

**Reaction**
Reaction of 4.54% w/v aqueous solution at 25°C. pH: 7.4±0.1

**pH**
7.30-7.50

**Cultural Response**
M1202: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.
## Organism

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Corynebacterium diphtheriae ATCC 11913</em></td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=50%</td>
</tr>
<tr>
<td><em>Corynebacterium xerosis ATCC 7094</em></td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=50%</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


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