Pseudomonas Isolation HiCynth™ Agar Base

Pseudomonas Isolation HiCynth™ Agar Base is used for selective isolation and identification of *Pseudomonas aeruginosa* from clinical and non-clinical specimens.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>HiCynth™ Peptone No.4*</td>
<td>20.000</td>
</tr>
<tr>
<td>Potassium sulphate</td>
<td>10.000</td>
</tr>
<tr>
<td>Magnesium chloride</td>
<td>1.400</td>
</tr>
<tr>
<td>Triclosan (Irgasan)</td>
<td>0.025</td>
</tr>
<tr>
<td>Agar</td>
<td>13.600</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 45.03 grams in 1000 ml distilled water containing 20 ml glycerol. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

**Principle And Interpretation**

*Pseudomonas aeruginosa* is an important human pathogen commonly found in nosocomial infections. It successfully combines adaptability to a variety of moist environments with a collection of potent virulence factors (1). *Pseudomonas* infections usually occur at any site where moisture tends to accumulate e.g. tracheostomies, in-dwelling catheters, burns, the external ear and weeping cutaneous wounds (2). Pseudomonas Isolation HiCynth™ Agar Base is a modification of Pseudomonas Isolation Agar where animal peptones are substituted with chemically defined peptones to avoid BSE/TSE risks associated with animal peptones. It is used for the selective isolation and identification of *P.aeruginosa*, is a modification of Medium A, originally formulated by King, Ward and Raney (3). The medium contains pigment-enhancing components and the selective agents, triclosan (4) which selectively inhibits non-pseudomonads. The pigment-enhancers i.e. potassium sulphate and magnesium chloride enhance the blue or blue-green pigment production by *P.aeruginosa*, thus aiding in its identification.

HiCynth™ Peptone No.4 provides nitrogenous compounds, carbon compounds, long chain amino acids, vitamins and other essential growth nutrients. Glycerol is a source of energy and promotes pyocyanin i.e. pigment production which is characteristic of *Pseudomonas* (5, 6). Potassium sulphate and magnesium chloride enhance pyocyanin production. Triclosan (7) selectively inhibits gram-positive and gram-negative bacteria but *Pseudomonas* species are resistant to it. Some pyocyanin producing strains may also produce small amounts of fluorescein, resulting in the production of a blue-green to green pigment. Presumptive *Pseudomonas* should be further confirmed by performing biochemical tests, as some strains of *Pseudomonas* do not produce pyocyanin (8).

**Quality Control**

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

**Gelling**
Firm, comparable with 1.36% Agar gel.

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

**Reaction**
Reaction of 4.5% w/v aqueous solution at 25°C. pH : 7.0±0.2

**pH**
6.80-7.20

**Cultural Response**
Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

*Please refer disclaimer* Overleaf.
Cultural Response

<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>Escherichia coli</em> ATCC 25922</td>
<td>&gt;=10³</td>
<td>inhibited</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td><em>Proteus mirabilis</em> ATCC 25933</td>
<td>&gt;=10³</td>
<td>inhibited</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td><em>Pseudomonas aeruginosa</em> ATCC 10145</td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=50%</td>
<td>green</td>
</tr>
<tr>
<td><em>Pseudomonas aeruginosa</em> ATCC 27853</td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=50%</td>
<td>blue to blue-green</td>
</tr>
<tr>
<td><em>Pseudomonas aeruginosa</em> ATCC 9027</td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=50%</td>
<td>blue to blue-green</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 : 01/ 2015