Glutamate Starch Phenol Red Agar Base

Glutamate Starch Phenol Red Agar is used for detection of *Pseudomonas* and *Aeromonas* in foodstuffs, wastewater and equipment in food industry.

**Composition**

**Ingredients**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-Glutamate, sodium</td>
<td>10.000</td>
</tr>
<tr>
<td>Starch, soluble</td>
<td>20.000</td>
</tr>
<tr>
<td>Monopotassium phosphate</td>
<td>2.000</td>
</tr>
<tr>
<td>Magnesium sulphate</td>
<td>0.500</td>
</tr>
<tr>
<td>Phenol red</td>
<td>0.360</td>
</tr>
<tr>
<td>Agar</td>
<td>12.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.2±0.2</td>
</tr>
</tbody>
</table>

**Directions**

Suspend 44.86 grams in 1000 ml distilled water. 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 and add 100 IU/ml Penicillin G, sodium salt and if desired 10 mcg/ml Pimaricin. Mix well and pour into sterile Petri plates.

**Principle And Interpretation**

*Aeromonas* commonly contaminate fish and related seafood products since they occur widely in aquatic environment. Motile aeromonads have also been associated with refrigerated animal products such as chicken, beef, pork etc (1, 2, 3). The predominant organisms found in these foods are *Pseudomonas* species with the motile aeromonads present in low numbers (4). Glutamate Starch Phenol Red Agar Base is used for the detection of *Pseudomonas* and *Aeromonas* species in foodstuffs, waste water and equipment in the food industry. This medium is a modification of Korths Medium (5), as described by Keilwein (6).

Glutamate Starch Phenol Red Agar Base is based on the ability of *Aeromonas* to utilize starch with the subsequent production of acid, detected the pH indicator i.e. phenol red. Phenol red changes from red to yellow colour under acidic conditions. *Pseudomonas* does not utilize starch and therefore does not form yellow colonies. The medium is designed to support the growth of both *Pseudomonas* and *Aeromonas* species.

L-glutamate is a source of essential nutrients. Starch is the source of carbon. Phosphate buffers the medium whereas magnesium sulphate is a source of essential ions. Antibiotics help to improve the selectivity of the medium.

The medium may be surface inoculated or used in membrane filtration technique.

**Quality Control**

**Appearance**

Light yellow to orange homogeneous free flowing powder

**Gelling**

Firm, comparable with 1.2% Agar gel.

**Colour and Clarity of prepared medium**

Red coloured, clear to slightly opalescent gel forms in Petri plates

**Reaction**

Reaction of 4.5% w/v aqueous solution at 25°C. pH : 7.2±0.2

**pH**

7.00-7.40

**Cultural Response**

Please refer disclaimer Overleaf.
M1089: Cultural characteristics observed with added 100 IU Penicillin G, sodium salt and 10 mcg/ml Pimaricin after an incubation at 25-30°C for 48-72 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Recovery</th>
<th>Starch hydrolysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Aeromonas hydrophila</em></td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
<td>positive reaction, acid production, yellow colour</td>
</tr>
<tr>
<td>ATCC 7966</td>
<td></td>
<td></td>
<td></td>
<td>negative reaction, no acid production</td>
</tr>
<tr>
<td><em>Pseudomonas aeruginosa</em></td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
<td></td>
</tr>
<tr>
<td>ATCC 27853</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Storage and Shelf Life**

Store below 30°C in tightly closed container and prepared medium at 2-8°C. Use before expiry period on the label.

**Reference**


**Disclaimer:**

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