Perfringens Agar Base (T. S. C. /S. F. P. Agar Base) M837

Perfringens Agar Base with the addition of selective supplement and enrichment is used for the presumptive identification and enumeration of Clostridium perfringens from food.

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tryptose</td>
<td>15.000</td>
</tr>
<tr>
<td>Beef extract</td>
<td>5.000</td>
</tr>
<tr>
<td>Papaic digest of soyabean meal</td>
<td>5.000</td>
</tr>
<tr>
<td>Yeast extract</td>
<td>5.000</td>
</tr>
<tr>
<td>Sodium metabisulphite</td>
<td>1.000</td>
</tr>
<tr>
<td>Ferric ammonium citrate</td>
<td>1.000</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.6±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 23.5 grams in 475 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°) for 15 minutes. Cool to 50°C. Add 25 ml of Egg Yolk Emulsion (FD045) and rehydrated contents of 1 vial of S.F.P. Supplement (FD013) / T.S.C. Supplement (FD014). Alternatively if fluorogenic detection is desired add rehydrated contents of Clostridium perfringens supplements (FD243) instead of FD013 / FD014. Mix well before pouring into sterile Petri plates.

Principle And Interpretation

Tryptose Sulphite Cycloserine Agar (TSC) was originally formulated by Harmon et al (1) for the enumeration of C. perfringens from food. TSC Agar has been documented as one of the most useful media for the quantitative recovery of C. perfringens while suppressing growth of other facultative anaerobes (2). Perfringens Agar Base is also recommended by APHA (3). Perfringens Agar Base can be made selective either by addition of D-cycloserine (FD014) (1, 2) or Kanamycin and Polymyxin B (FD013) (4). TSC Agar Base (with FD014) or SFP Agar Base (with FD013) is comparable in performance for isolation of C. perfringens (5, 6).

Tryptose, papaic digest of soyabean meal, yeast extract, beef extract provide nitrogenous compounds, carbon, sulphur, vitamin B complex and trace elements essential for clostridial growth. Sodium metabisulphite and ferric ammonium citrate act as an indicator of sulphite reduction, indicated by black coloured colonies. D-Cycloserine (FD014), Kanamycin and Polymyxin B (FD013) help in the selective isolation of C. perfringens by inhibiting accompanying flora. Egg yolk emulsion serves as a source of lecithin utilized by C. perfringens (M837).

Quality Control

Appearance
Light yellow to brownish yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Basal medium : Amber coloured clear to slightly opalescent gel. After Addition of Egg Yolk Emulsion (FD045) : Yellow coloured opaque gel forms in Petri plates

Reaction
Reaction of 4.7% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH
7.40-7.80

Please refer disclaimer Overleaf.
Cultural Response
Cultural characteristics observed under anaerobic condition with added TSC Supplement (FD014)/S.F.P Supplement (FD013)/Clostridium Perfringens Supplement (FD243) and Egg Yolk Emulsion (FD045), after an incubation at 35-37°C for 18-24 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Recovery</th>
<th>Sulphite Reduction</th>
<th>Lecithinase/Haloes</th>
<th>Fluorescence</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Clostridium perfringens</em></td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=50%</td>
<td>positive, blackening of medium</td>
<td>Positive reaction, opaque zone around the colony</td>
<td>Positive Reaction</td>
</tr>
<tr>
<td><em>Clostridium sordelli</em></td>
<td>&gt;=10³</td>
<td>inhibited</td>
<td>0%</td>
<td></td>
<td></td>
<td></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

Disclaimer:
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