Campylobacter Enrichment Broth Base (Preston Enrichment Broth Base)

Campylobacter Enrichment Broth Base is recommended for selective enrichment and cultivation of Campylobacter species.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peptic digest of animal tissue</td>
<td>10.000</td>
</tr>
<tr>
<td>Beef extract</td>
<td>10.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.5±0.2</td>
</tr>
</tbody>
</table>

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

**Directions**

Suspend 12.5 grams in 470 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to room temperature and aseptically add sterile 25 ml lysed horse blood and reconstituted contents of 1 vial of Campylobacter Supplement IV (Preston Selective Supplement) (FD042). Mix well and dispense as desired.

**Principle And Interpretation**

Balton and Robertson (1) described this as a selective medium for the cultivation of Campylobacter species. It is recommended by APHA (2) for enrichment of thermotolerant Campylobacter species from foods. Preston Enrichment Broth has a rich basal medium to aid resuscitation of sublethally damaged Campylobacter. Preliminary incubation of the medium complete with antibiotics for 4 hours at 37°C was recommended to aid resuscitation of injured organisms followed by 42°C for 18-48 hours (3).

Peptic digest of animal tissue and beef extract in the medium provide nitrogen, vitamins and minerals necessary to support bacterial growth. Sodium chloride provides essential ions.

Preston Selective Supplement (FD042) contains antibacterial and antifungal agents. Polymyxin B is active only against gram-negative bacteria and Proteus species are sometimes resistant. Trimethoprim usually inhibits Proteus species as well as other gram-negative bacteria. Rifampicin is also active against gram-negative organisms. Cycloheximide acts as antifungal agent.

Direct plating without enrichment is adequate for fresh faecal samples, fecal contents or intestinal specimens as high numbers of the organisms may be anticipated. For food sample enrichment is required. Humphrey (1989) suggested that pre-enrichment at 37°C should be continued for 4 hours and that addition of all antibiotics should be delayed until the 4 hours pre-enrichment had been completed. Enrichment medium with rifampicin was recommended in parallel with similar plating medium.

The Campylobacter species grow well in microaerobic conditions i.e. in 5% O2 at 42°C in about 48 hours. Addition of about 4 drops of glycerol to a filter paper kept within the jar/container will hamper confluent and swarming growth of Campylobacter (3).

**Quality Control**

**Appearance**

Cream to yellow homogeneous free flowing powder

**Colour and Clarity**

Basal medium: Light yellow coloured clear solution. After addition of sterile lysed horse blood: Cherry red coloured opaque solution in tubes

**Reaction**

Reaction of 2.5% w/v aqueous solution at 25°C. pH: 7.5±0.2
pH
7.30-7.70

Cultural Response
Cultural characteristics observed with added 25ml sterile lysed horse blood and Campylobacter Supplement IV (Preston Selective Supplement),(FD042), after an incubation at 42°C for 48 hours(5% O₂ + 10% CO₂ + 85% N₂).

Cultural Response
Organism              Growth
Bacillus cereus ATCC 10876 inhibited
Campylobacter coli ATCC 35559
Campylobacter jejuni ATCC 29428
good-luxuriant
Campylobacter lari ATCC 35221
good-luxuriant
Escherichia coli ATCC 25922
Proteus mirabilis ATCC 25933
inhibited
Staphylococcus aureus ATCC 25923
inhibited

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