Karmali Campylobacter Agar Base

Karmali Campylobacter Agar is a blood free medium recommended for selective isolation and cultivation of thermotolerant *Campylobacter* species from food and animal feeds.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peptone, special</td>
<td>23.000</td>
</tr>
<tr>
<td>Corn starch</td>
<td>1.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Charcoal</td>
<td>4.000</td>
</tr>
<tr>
<td>Agar</td>
<td>12.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.4±0.2</td>
</tr>
</tbody>
</table>

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

**Directions**

Suspend 22.5 grams in 490 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 50°C. Aseptically add 5 ml Hemin solution (16 mg/5 ml) and rehydrated contents of 1 vial of Campylobacter Selective Supplement, Karmali (FD078). Alternatively, 1 vial of Campylobacter Selective Supplement w/Hemin (Karmali) (FD132) can be added instead of FD078 and Hemin. Mix well and pour into sterile Petri plates.

**Principle And Interpretation**

*Campylobacter* are carried in the intestinal tract of animals and therefore, contaminate foods of animals origin. *Campylobacter jejuni* is recognized as a leading cause of acute bacterial gastroenteritis in humans, and eating foods of animal origin has been associated with many of these illnesses (1). *Campylobacter jejuni* and *Campylobacter coli* are the most common *Campylobacter* species associated with diarrheal illness and are clinically indistinguishable (2).

Karmali Campylobacter Agar Base, recommended for the selective isolation and cultivation of *Campylobacter* species, is a modification of the original formulation of Karmali et al (3). Selectivity of the medium is achieved by the addition of selective supplement (FD078 / FD132). Campylobacter Selective Supplement with Hemin (Karmali) (FD132) has hemin, as part of the supplement whereas, while using Campylobacter Selective Supplement, Karmali (FD078), hemin has to be added separately. Karmali Campylobacter Agar Base is also recommended by the ISO Committee (4).

Peptone special, cornstarch and hemin, serve as sources of essential nutrients required for bacterial metabolism. Presence of charcoal in the medium helps to neutralize the toxic metabolic products formed in the medium. Sodium pyruvate (present in Supplement) (5) enhances, the aerotolerance of microaerophilic *Campylobacter* by quenching the toxic forms of oxygen (6). The antibiotics included in the selective supplement are vancomycin, cycloheximide and cefoperazone.

Vancomycin suppresses gram-positive organisms while cycloheximide inhibits the fungal flora. Cefoperazone has inhibitory action on gram-negative organisms other than *Campylobacter*. The inoculated plates are incubated in an atmosphere consisting of approximately 5-6% O2, 10% CO2 and 84-85% N2 at 42°C.

**Quality Control**

**Appearance**

Grey to black homogeneous free flowing powder

**Gelling**

Firm, comparable with 1.2% Agar gel.

**Colour and Clarity of prepared medium**

Black coloured, opalescent gel forms in Petri plates

**Reaction**

Reaction of 4.5% w/v aqueous solution at 25°C. pH : 7.4±0.2
**Technical Data**

**pH**
7.20-7.60

**Cultural Response**
M1222: Cultural characteristics observed with added Hemin solution and Campylobacter Selective Supplement (Karmali) (FD078) or Campylobacter Selective Supplement w/Hemin(Karmali)(FD132) after an incubation at 42°C for 42-48 hours.

**Organism**

<table>
<thead>
<tr>
<th>Organism</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campylobacter coli ATCC</td>
<td>good-luxuriant</td>
</tr>
<tr>
<td>Campylobacter jejuni ATCC</td>
<td>good-luxuriant</td>
</tr>
<tr>
<td>Escherichia coli ATCC</td>
<td>none-poor</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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