Antibiotic HiVeg Assay Medium No. 4 (Yeast Beef HiVeg Agar)

Antibiotic HiVeg Assay Medium No. 4 (Yeast Beef HiVeg Agar) is used for detection of Penicillin-G in milk samples using Bacillus stearothermophilus.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>HiVeg extract</td>
<td>1.500</td>
</tr>
<tr>
<td>HiVeg peptone</td>
<td>6.000</td>
</tr>
<tr>
<td>Yeast extract</td>
<td>3.000</td>
</tr>
<tr>
<td>Dextrose</td>
<td>1.000</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>6.6±0.2</td>
</tr>
</tbody>
</table>

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

**Directions**

Suspend 26.5 grams in 1000 ml of purified/distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

**Principle And Interpretation**

Antibiotic HiVeg Assay Medium No. 4 (Yeast Beef HiVeg Agar) is prepared by incorporating vegetable peptones in place of animal peptones, making the medium BSE-TSE risks free. This can be used for the same purpose of Antibiotic Assay Medium No. 4 (Yeast Beef Agar), which is recommended for plate counts in pharmaceutical and related products and for the microbial assay and detection of antibiotics like penicillin in milk. This medium is formulated in accordance to the specifications and procedures listed by the Food and Drug Administration (1). This medium is identical with that of Grove and Randall (2).

HiVeg peptone, yeast extract and HiVeg extracts provides nutritional requirement for growth of the indicator organisms like Bacillus stearothermophilus, Micrococcus luteus. Dextrose in the medium serves as easily available source of carbon stimulating luxuriant growth of the test organisms. Generally presence of penicillin in milk is detected by the cylinder plate method, using Micrococcus luteus as the test organism, and a by paper disk method, using Bacillus stearothermophilus as the test organism. The cylinder plate method is recommended as the standard for quantification of β-lactam residues. A description of the cylinder plate method for detecting penicillin in dry powdered milk is given by Kramer et al. (3). The same basic procedure is also recommended in the assay of penicillin in fluid milk.

Freshly prepared plates should be used for antibiotic assays. The use of this medium assures well defined zones of the test organism. All conditions in the microbiological assay must be controlled carefully. The use of standard culture medium in the test is one of the important steps for obtaining good results.

*Note: For Antibiotic Assay Methods and Selection of Antibiotic HiVeg Assay Medias Refer Section Antibiotic HiVeg Assay Media.*

**Quality Control**

**Appearance**

Cream to yellow Colour of Powder: Cream to yellow homogeneous free flowing powder

**Gelling**

Firm, comparable with 1.5% Agar gel

**Colour and Clarity of prepared medium**

Yellow coloured clear to slightly opalescent gel forms in Petri plates

**Reaction**

Please refer disclaimer Overleaf.
Reaction of 2.65% w/v aqueous solution at 25°C. pH : 6.6±0.2

pH
6.40-6.80

Cultural Response
Cultural characteristics observed after an incubation at 55°C for 18-24 hours.

Cultural Response

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Bacillus stearothermophilus</em> ATCC 7953</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
</tr>
<tr>
<td><em>Micrococcus luteus ATCC</em> 10240</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
</tr>
</tbody>
</table>

Storage and Shelf Life
Store below 30°C in tightly closed container and use freshly prepared medium. Use before expiry date on the label.

Reference

Revision : 1 / 2011