Antibiotic Assay Medium No. 5 (Streptomycin Assay Agar w/Yeast Extract)

**Intended use**

Antibiotic Assay Medium No.5 (Streptomycin Assay Agar w/Yeast extract) is used for microbiological assay of Dihydrostreptomycin, Framycetin and Kanamycin B using *Bacillus subtilis*.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peptone</td>
<td>6.000</td>
</tr>
<tr>
<td>HM Peptone B #</td>
<td>1.500</td>
</tr>
<tr>
<td>Yeast extract</td>
<td>3.000</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.9±0.2</td>
</tr>
</tbody>
</table>

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

# - Equivalent to Beef extract

**Directions**

Suspend 25.50 grams in 1000 ml purified/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. Mix well and pour into sterile Petri plates. Advice: Recommended for the Microbiological assay of Dihydrostreptomycin, Framycetin, Kanamycin.

**Principle And Interpretation**

This medium is commonly used for assaying Streptomycin by cylinder plate method using *Bacillus subtilis* as test organism. This method is used in the assay of commercial preparations of antibiotics, as well as for antibiotics in body fluids, feeds etc. Medium composition is in accordance to the specifications detailed in the FDA (5) and numerically identical to the name assigned by Grove and Randall (1).

Peptone, yeast and HM Peptone B provides nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and other necessary growth nutrients for the test organism like *Bacillus subtilis*. The medium provides solidified substratum for growth of organisms. The pH-7.9 maintained in this medium provides optimum growth conditions for *Bacillus subtilis* (4). This medium is used to prepare the base as well as seed layer in the microbiological assay of antibiotics such as Dihydrostreptomycin, Framycetin and Kanamycin B.

To perform the antibiotic assay the Base Agar should be prepared on the same day as the test. For the cylinder method, a base layer of 21 ml is required. Once the base medium has solidified, seed layer inoculated with the standardized test culture can be overlaid. Even distribution of the layer is important.

**Type of specimen**

Pharmaceutical preparations

**Specimen Collection and Handling**

For pharmaceutical samples follow appropriate techniques for handling specimens as per established guidelines (5,6). After use, contaminated materials must be sterilized by autoclaving before discarding.

**Warning and Precautions:**

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

**Limitations:**

1. Freshly prepared plates must be used or it may result in erroneous results.
Performance and Evaluation
Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control
Appearance
Cream to yellow homogeneous free flowing powder
Gelling
Firm, comparable with 1.5% Agar gel
Colour and Clarity of prepared medium
Medium amber coloured clear to slightly opalescent gel forms in Petri plates.
Reaction
Reaction of 2.55% w/v aqueous solution at 25°C. pH : 7.9±0.2
pH
7.70-8.10
Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism | Inoculum (CFU) | Growth | Recovery | Antibiotics assayed
--- | --- | --- | --- | ---
*Bacillus subtilis subsp. spizizenii* ATCC 6633 (00003*) | 50-100 | good-luxuriant | >=70% | Dihydrostreptomycin, Framycetin, Kanamycin B

Key: *Corresponding WDCM numbers.

Storage and Shelf Life
Store between 10-30°C in a tightly closed container and use freshly prepared medium. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label.

Product performance is best if used within stated expiry period.

Disposal
User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

Disclaimer:
User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.