Dextrose Agar

Intended Use:
Recommended for cultivation of a wide variety of microorganisms.

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tryptose</td>
<td>10.000</td>
</tr>
<tr>
<td>HM peptone B</td>
<td>3.000</td>
</tr>
<tr>
<td>Dextrose (Glucose)</td>
<td>10.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.3±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

Directions
Suspend 43 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. If desired, Blood Agar can be prepared by the addition of 5% v/v sterile, defibrinated sheep blood into sterile Dextrose Agar. Mix well and pour into sterile Petri plates.

Principle And Interpretation
Dextrose in culture media serves as a source of energy. A basal media with 0.5 - 1.0% dextrose, supplemented with defibrinated blood is recommended for the isolation of a wide variety of fastidious organisms (5). Dextrose Agar, recommended by APHA (7), contains 1.0% dextrose and therefore supports early and luxuriant growth of a variety of organisms including older cultures. The lag phase is comparatively reduced on this medium. But due to high concentrations of dextrose, the medium is not recommended for studying the haemolytic pattern of organism since dextrose interferes with the haemolytic reaction.

Dextrose Agar contains high concentration of dextrose as an energy source for the rapid growth of microorganisms. However this medium is not very suitable for the study of haemolysis because of high carbohydrate content. HM peptone B and tryptose serve as sources of nitrogenous compounds, sulphur, carbon, vitamins and minerals. Osmotic balance of the medium is maintained by sodium chloride.

Type of specimen
Clinical samples; Food and dairy samples; Water samples

Specimen Collection and Handling
For clinical samples follow appropriate techniques for handling specimens as per established guidelines (3,4). For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,6,8). For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(2) After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :
In Vitro diagnostic Use. 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 clinical specimens. Safety guidelines may be referred in individual safety data sheets

Limitations :
1. Further biochemical and serological tests must be carried out for further identification.
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
Basal medium: Light yellow. After addition of 5% v/v sterile defibrinated blood: Cherry red coloured, Basal medium: clear to slightly opalescent gel; After addition: opaque gel forms in Petri plates

Reaction
Reaction of 4.3% w/v aqueous solution at 25°C. pH: 7.3±0.2

pH
7.10-7.50

Cultural Response
Cultural characteristics observed 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>Growth w/ blood</th>
<th>Recovery w/ Blood</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Bordetella pertussis</em> ATCC 8467</td>
<td>50-100</td>
<td>good</td>
<td>50-70%</td>
<td>luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Neisseria meningitidis</em> ATCC 13090</td>
<td>50-100</td>
<td>good</td>
<td>50-70%</td>
<td>luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Neisseria gonorrhoeae</em> ATCC 19424</td>
<td>50-100</td>
<td>good</td>
<td>50-70%</td>
<td>luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Streptococcus pyogenes</em> ATCC 19615</td>
<td>50-100</td>
<td>good</td>
<td>50-70%</td>
<td>luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Clostridium perfringens</em> ATCC 12919</td>
<td>50-100</td>
<td>fair-good</td>
<td>40-50%</td>
<td>luxuriant</td>
<td>&gt;=70%</td>
</tr>
</tbody>
</table>

Storage and Shelf Life
Store between 10-30°C in a tightly closed container and the prepared medium 20-30°C. 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 incinerating 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 (3,4).

Reference

Please refer disclaimer Overleaf.

Disclaimer:
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