Malt Agar

Intended Use

Recommended for the detection and isolation of yeasts and moulds from dairy products, foods and other materials. Also used for carrying stock cultures of yeasts and moulds.

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malt extract</td>
<td>30.000</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</td>
</tr>
<tr>
<td>Final pH ( at 25°C)</td>
<td>5.5±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 45 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 118°C for 15 minutes. Avoid overheating, as it will result in a softer and darker agar. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Media based on malt extract may be considered as general growth substrates due to their richness and nutrient balance. They are very suitable for the cultivation of fastidious microorganisms. With acidic pH, they are used for the isolation, cultivation and maintenance of yeast and moulds.

Malt media for yeasts and moulds have been widely used for many years. In 1919, Reddish (1) prepared a satisfactory substitute for beer wort from malt extract. Malt Agar is included in Official Methods of Analysis of AOAC International (2). It is recommended by APHA (3) for use in both antibiotic and acidified standard methods for yeast and mould counts in food. This medium is also used for maintaining stock cultures of fungi.

Malt Agar contains malt extract, which provides carbon, protein and nutrient sources required for the growth of microorganisms. The acidified medium inhibits the growth of bacteria and allows good recovery of yeasts and moulds (4). Heating process during rehydration and sterilization should be for shorter period as excessive heat causes partial hydrolysis of the agar, which results in inability to gel properly when cooled. If desired additional 5 grams of agar may be added.

Type of specimen

Food and dairy samples

Specimen Collection and Handling

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (3,5,6). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

In Vitro diagnostic Use only. 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 :

This medium is general purpose medium and may not support the growth of fastidious organisms.

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 brownish yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Light amber coloured clear to slightly opalescent gel forms in tubes or Petri plates

Reaction
Reaction of 4.5% w/v aqueous solution at 25°C. pH : 5.5±0.2

pH
5.30-5.70

Cultural Response
Cultural characteristics was observed after an incubation at 25 - 30°C for 40 - 48 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>#Aspergillus brasiliensis ATCC 16404</td>
<td>50-100</td>
<td>luxuriant</td>
<td></td>
</tr>
<tr>
<td>Candida albicans ATCC 10231 (00054*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td>Saccharomyces cerevisiae ATCC 9763 (00058*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td>Penicillium chrysogenum ATCC 9179</td>
<td>50-100</td>
<td>luxuriant</td>
<td></td>
</tr>
<tr>
<td>Trichophyton mentagrophytes ATCC 9533</td>
<td>50-100</td>
<td>luxuriant</td>
<td></td>
</tr>
</tbody>
</table>

Key: (#) Formerly known as Aspergillus niger, (*) Corresponding WDCM numbers

Storage and Shelf Life
Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle inorder 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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (7,8).
Reference