MUG Plate Count HiCynth™ Agar

**Intended Use:**
Recommended for determination of plate count of microorganisms in milk and other dairy products by fluorogenic method.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>HiCynth™ Peptone No.3*</td>
<td>5.000</td>
</tr>
<tr>
<td>HiCynth™ Peptone No.5*</td>
<td>2.500</td>
</tr>
<tr>
<td>Dextrose (Glucose)</td>
<td>1.000</td>
</tr>
<tr>
<td>4-Methylumbelliferyl β-D-Glucuronide (MUG)</td>
<td>0.100</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.0±0.2</td>
</tr>
</tbody>
</table>

**Directions**
Suspend 23.6 grams in 1000 ml purified / distilled water. Heat gently 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.

**Principle And Interpretation**
Plate Count Agar is a general-purpose cultivation medium used for a wide variety of organisms and is recommended by APHA (1, 5, 6) and AOAC (2).

MUG Plate Count Agar, which is Plate Count Agar supplemented with MUG, is used for determining plate count of microorganisms in milk and other dairy products by fluorogenic method. The medium does not contain any inhibitor or pH indicator. It is used to determine the total microbial count of milk, dairy products (5), water (1) and other materials. Organisms like *Escherichia coli* can be identified by the formation of fluorescent colonies visualized on exposure to UV light (366nm). MUG Plate Count HiCynth™ Agar is prepared by replacing animal and vegetable peptones with chemically defined peptones to avoid BSE/TSE risks associated with animal peptones.

**Type of specimen**
Dairy samples, Water samples

**Specimen Collection and Handling**
For Dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (5,7).
For Water samples, follow appropriate techniques for sample collection and processing as per guidelines (1).
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. Some strains of *E. coli*, however, are MUG-negative and do not fluoresce under UV light.

**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
Yellow coloured clear to slightly opalescent gel forms in Petri plates.

Reaction
Reaction of 2.36% w/v aqueous solution at 25°C, pH : 7.0±0.2

pH
6.80-7.20

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>Fluorescence (under UV)</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Escherichia coli</em> ATCC 25922</td>
<td>50-100</td>
<td>luxuriant</td>
<td>positive</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em> subsp. aureus ATCC 25923 (00034*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>negative</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Bacillus subtilis</em> subsp. spizizenii ATCC 6633 (00003*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>negative</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Streptococcus pyogenes</em> ATCC 19615</td>
<td>50-100</td>
<td>luxuriant</td>
<td>negative</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Enterococcus faecalis</em> ATCC 29212</td>
<td>50-100</td>
<td>luxuriant</td>
<td>negative</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Lactobacillus casei</em> ATCC 9595</td>
<td>50-100</td>
<td>luxuriant</td>
<td>negative</td>
<td>&gt;=70%</td>
</tr>
</tbody>
</table>

Key: (*) Corresponding WDCM numbers.

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

Reference