Tryptone Glucose Yeast Extract HiCynth™ Agar (Tryptone Glucose Extract HiCynth™ Agar)

**Intended use**
Tryptone Glucose Yeast Extract HiCynth™ Agar is recommended for enumeration of bacteria in water, air, milk and dairy products.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>HiCynth™ Peptone No.2*</td>
<td>5.000</td>
</tr>
<tr>
<td>HiCynth™ Peptone No.5*</td>
<td>3.000</td>
</tr>
<tr>
<td>Glucose</td>
<td>1.000</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 24 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.

**Principle And Interpretation**
Tryptone Glucose Yeast Extract Agar was originally developed by Bowers and Hucker (3) which they called as Tryptone Glucose Skim Milk Agar. Tryptone Glucose Yeast Extract HiCynth™ Agar is prepared by completely replacing peptones (animal or vegetable based) with chemically defined peptones to avoid BSE/TSE/GMO risks associated with animal and vegetable peptones. Later on it was modified to the present composition for the cultivation and enumeration of bacteria in air, water (2), milk and dairy products (8). Various authors have studied different aspects of this medium like study of thermophilic bacteria in milk (7), influence of incubation temperature (4) etc. It is used as a standard medium for the bacteriological plate count of milk and dairy products (1).

HiCynth™ Peptone No.2 and HiCynth™ Peptone No.5 provide nitrogenous and carbonaceous compounds, long chain amino acids, vitamin B complex and other essential growth nutrients. Glucose is the energy source. For the enumeration purposes, pour plate method is suggested. Medium must be quickly poured into Petri dishes if milk sample is to be tested, because the milk may get flocculated if the medium remains hot for longer period of time.

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

**Specimen Collection and Handling**
For dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (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**
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. 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 yellow homogeneous free flowing powder

**Gelling**
Firm, comparable with 1.5% Agar gel

**Colour and Clarity of prepared medium**
Light yellow coloured clear to slightly opalescent gel forms in Petri plates.

**Reaction**
Reaction of 2.4% 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 18-48 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Bacillus subtilis subsp. spizizenii ATCC 6633</em> (0003*)</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td># <em>Klebsiella aerogenes</em> ATCC 13048 (00175*)</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Escherichia coli ATCC 25922</em> (00013*)</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Enterococcus faecalis ATCC 50-100</em> 29212 (00087*)</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Lactobacillus casei ATCC 9595</em></td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Pseudomonas aeruginosa ATCC 27853</em> (00025*)</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=70%</td>
</tr>
<tr>
<td><em>Staphylococcus aureus subsp.aureus ATCC 25923</em> (00034*)</td>
<td>50-100</td>
<td>good-luxuriant</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 (5,6).
Reference


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