SS HiCynth™ Agar (Salmonella Shigella HiCynth™ Agar)  MCD108

**Intended Use:**
Recommended for the isolation of *Salmonella* and some *Shigella* species from pathological specimens, suspected foodstuffs etc.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>HiCynth™ Peptone No.3*</td>
<td>11.500</td>
</tr>
<tr>
<td>HiCynth™ Peptone No.6*</td>
<td>5.000</td>
</tr>
<tr>
<td>Lactose</td>
<td>10.000</td>
</tr>
<tr>
<td>Synthetic detergent</td>
<td>2.000</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>10.000</td>
</tr>
<tr>
<td>Sodium thiosulphate</td>
<td>8.500</td>
</tr>
<tr>
<td>Ferric citrate</td>
<td>1.000</td>
</tr>
<tr>
<td>Brilliant green</td>
<td>0.00033</td>
</tr>
<tr>
<td>Neutral red</td>
<td>0.025</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>

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

*Chemically defined peptones.

**Directions**
Suspend 63.02 grams in 1000 ml purified /distilled water. Boil with frequent agitation to dissolve the medium completely. DO NOT AUTOCLAVE OR OVERHEAT. Overheating may destroy selectivity of the medium. Cool to about 45-50°C. Mix and pour into sterile Petri plates.

**Principle And Interpretation**
SS HiCynth™ Agar medium is prepared similar to SS agar wherein animal based peptones are completely replaced with chemically defined peptones to avoid BSE/TSE/GMO risks associated with animal peptones. SS HiCynth™ Agar medium is recommended as differential and selective medium for the isolation of *Salmonella* and *Shigella* species from pathological specimens (5) and suspected foodstuffs (1, 8, 2, 9) and for microbial limit test (7). It is a moderately selective medium in which gram-positive bacteria are inhibited by synthetic detergent, brilliant green and sodium citrate. HiCynth™ Peptone No.3 and HiCynth™ Peptone No.6 provides nitrogen and carbon source, long chain amino acids, vitamins and essential growth nutrients. Lactose is the fermentable carbohydrate. Brilliant green, synthetic detergent and thiosulphate selectively inhibit gram-positive and coliform organisms. Sodium thiosulphate is reduced by certain species of enteric organisms to sulphite and H₂S gas and this reductive enzyme process is attributed by thiosulphate reductase. Production of H₂S gas is detected as an insoluble black precipitate of ferrous sulphide, formed upon reaction of H₂S with ferric ions or ferric citrate, indicated in the center of the colonies.

The high selectivity of Salmonella Shigella HiCynth™ Agar allows the use of large inocula directly from faeces, rectal swabs or other materials suspected of containing pathogenic enteric bacilli. On fermentation of lactose by few lactose-fermenting normal intestinal flora, acid is produced which is indicated by change of colour from yellow to red by the pH indicator-neutral red. Thus these organisms grow as red pigmented colonies. Lactose non-fermenting organisms grow as translucent colourless colonies with or without black centers. Growth of *Salmonella* species appears as colourless colonies with black centers resulting from H₂S production. *Shigella* species also grow as colourless colonies which do not produce H₂S.

**Type of specimen**
Clinical: faeces, blood, rectal swabs; Suspected food stuffs.

**Specimen Collection and Handling**
For clinical samples follow appropriate techniques for handling specimens as per established guidelines (2,3,4).
For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,6,8,9).
**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. The medium is highly selective and may be toxic to certain *Salmonella* or *Shigella* species. Hence it is recommended to use to inoculate plates of less inhibitory media parallel to SS HiCynth™ Agar, such as Hektoen Enteric HiCynth™ Agar (MCD467) or Deoxycholate Citrate HiCynth™ Agar (MCD065) for easier isolation of *Shigella* species (6).

**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**  
Light yellow to pink homogeneous free flowing powder

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

**Colour and Clarity of prepared medium**  
Reddish orange coloured clear to slightly opalescent gel forms in Petri plates

**Reaction**  
Reaction of 6.3% 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>Recovery</th>
<th>Colour of colony</th>
</tr>
</thead>
<tbody>
<tr>
<td><em># Klebsiella aerogenes</em> ATCC 13048 (00175*)</td>
<td>50-100</td>
<td>fair</td>
<td>20-30%</td>
<td>cream pink</td>
</tr>
<tr>
<td><em>Escherichia coli</em> ATCC 25922 (00013*)</td>
<td>50-100</td>
<td>fair</td>
<td>20-30%</td>
<td>pink with bile precipitate colourless with black centre</td>
</tr>
<tr>
<td><em>Salmonella Choleraesuis</em> ATCC 12011</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
<td>colourless with black centre</td>
</tr>
<tr>
<td><em>Salmonella Typhi</em> ATCC 6539</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
<td>colourless</td>
</tr>
<tr>
<td><em>Enterococcus faecalis</em> ATCC 29212 (00087*)</td>
<td>50-100</td>
<td>none-poor</td>
<td>&lt;=10%</td>
<td>colourless, may have black centre</td>
</tr>
<tr>
<td><em>Proteus mirabilis</em> ATCC 25933</td>
<td>50-100</td>
<td>fair-good</td>
<td>30-40%</td>
<td>colourless, may have black centre</td>
</tr>
<tr>
<td><em>Shigella flexneri</em> ATCC 12022 (00126*)</td>
<td>50-100</td>
<td>good</td>
<td>40-50%</td>
<td>colourless</td>
</tr>
<tr>
<td><em>Salmonella Typhimurium</em> ATCC 14028 (00031*)</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
<td>colourless with black centre</td>
</tr>
<tr>
<td><em>Salmonella Enteritidis</em> ATCC 13076 (00030*)</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
<td>colourless with black centre</td>
</tr>
</tbody>
</table>

Key: *Corresponding WDCM numbers.

# Formerly known as *Enterobacter aerogenes*
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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3)

Reference

Revision: 03/2019
In vitro diagnostic medical device

CE Marking

Storage temperature

Do not use if package is damaged

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