**HiCrome™ Improved Salmonella Agar**

**Intended Use:**
Recommended as an improved selective and differential medium for *Salmonella* species from clinical and non-clinical samples.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peptone, special</td>
<td>8.000</td>
</tr>
<tr>
<td>Yeast extract</td>
<td>2.000</td>
</tr>
<tr>
<td>Sodium deoxycholate</td>
<td>1.000</td>
</tr>
<tr>
<td>Chromogenic mixture</td>
<td>3.250</td>
</tr>
<tr>
<td>Agar</td>
<td>12.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.3±0.2</td>
</tr>
</tbody>
</table>

**Directions**

Suspend 26.25 grams in 1000 ml distilled water. Gently heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

**Principle And Interpretation**

*Salmonella* species have been isolated from humans and almost all animals throughout the world. They cause many types of infections from mild, self-limiting gastroenteritis to life threatening typhoid fever. *Salmonella Typhi* and *Salmonella Paratyphi A & B* cause gastroenteritis, bacteremia and enteric fever, *Salmonella Choleraesuis* causes gastroenteritis and enteric fever, especially in children. *Salmonella Typhimurium* is the most frequently isolated serotype of *Salmonella* (1).

HiCrome™ Improved Salmonella Agar is a modification of the original formulation of Rambach (2) and is used for the differentiation of *Salmonella* species from other enteric bacteria. Rambach formulation differentiates *Salmonella* based on propylene glycol utilization and presence of a chromogenic indicator. However, HiCrome Salmonella Agar, Modified uses only a chromogenic mixture which contains chromogenic substrate and indicator dye for identification and differentiation of *Salmonella* species.

Peptone special and yeast extract provides nitrogenous, carbonaceous compounds, long chain amino acids, vitamins and other essential growth nutrients. *Escherichia coli* and *Salmonella* are easily distinguishable due to their colony characteristics. All *Salmonella* species isolated from food or clinical sample exhibit pink to red colonies including *Salmonella Typhi*. *E. coli* exhibits a characteristic blue to purple colour, due to presence of the enzyme specific for chromogenic substrate. Sodium deoxycholate inhibits gram-positive organisms.

**Type of specimen**

Clinical samples: faeces, urine; Food samples; Water samples

**Specimen Collection and Handling**

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (3,4).

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (5).

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

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*Please refer disclaimer Overleaf.*
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

1. The medium is selective for Salmonella may not support the growth of other microorganisms.
2. Most of the Salmonella strains show pink-red colonies except few which may show colorless colonies.
3. Due to nutritional variations, some strains may show poor growth.
4. Final confirmation of suspected colonies must be carried out by serological and biochemical tests.

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 1.2% Agar gel.

Colour and Clarity of prepared medium
Reddish pink coloured, slightly opalescent gel forms in Petri plates

Reaction
Reaction of 2.62% 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 24-48 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Growth</th>
<th>Inoculum (CFU)</th>
<th>Recovery</th>
<th>Colour of Colony</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacillus subtilis subsp. spizizenii ATCC 6633 (00003*)</td>
<td>inhibited</td>
<td>&gt;=10³</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Escherichia coli ATCC 25922 (00013*)</td>
<td>luxuriant</td>
<td>50-100</td>
<td>&gt;=50%</td>
<td>green to blue</td>
</tr>
<tr>
<td>Salmonella Typhimurium ATCC 14028 (00031*)</td>
<td>luxuriant</td>
<td>50-100</td>
<td>&gt;=50%</td>
<td>pink to red</td>
</tr>
<tr>
<td>Salmonella Enteritidis ATCC 13076 (00030*)</td>
<td>luxuriant</td>
<td>50-100</td>
<td>&gt;=50%</td>
<td>pink to red</td>
</tr>
<tr>
<td>Proteus vulgaris ATCC 13315</td>
<td>good</td>
<td>50-100</td>
<td>40-50%</td>
<td>light brown</td>
</tr>
<tr>
<td>Salmonella Typhi ATCC 6539</td>
<td>good-luxuriant</td>
<td>50-100</td>
<td>&gt;=50%</td>
<td>light pink</td>
</tr>
<tr>
<td>Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)</td>
<td>inhibited</td>
<td>&gt;=10³</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

Key: (*) Corresponding WDCM numbers

Please refer disclaimer Overleaf.
Storage and Shelf Life
Store dehydrated powder and prepared medium at 2-8°C. Use before expiry period on the label. 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 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 (3,4).

Reference