HiCrome™ Rapid MRSA HiCynth™ Agar Base

Intended Use:
Recommended for Rapid isolation and identification of Methicillin Resistant *Staphylococcus aureus*.

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>HiCynth™ Peptone No.2*</td>
<td>20.000</td>
</tr>
<tr>
<td>HiCynth™ Peptone No.5*</td>
<td>20.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>8.500</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>14.000</td>
</tr>
<tr>
<td>Phenol red</td>
<td>0.025</td>
</tr>
<tr>
<td>Chromogenic mix</td>
<td>6.500</td>
</tr>
<tr>
<td>Amino-Vitamin mix</td>
<td>1.200</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.4±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

* Chemically defined peptones

Directions
Suspend 85.23 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to 45-50°C. Aseptically add sterile rehydrated contents of 1 vial of MRSA Selective Supplement (FD319). Mix well and pour into sterile Petri plates.

Principle And Interpretation
MRSA is a resistant variation of the common bacterium *Staphylococcus aureus*. It is an invasive pathogen that can cause disease in almost any tissue or organ in the human body, primarily in compromised individuals (2). Staphylococcal infections were earlier treated using Penicillin. But over the years resistance to this drug developed. Methicillin was the next drug of choice. While methicillin is very effective in treating most Staphylococcus infections some strains have developed resistance to methicillin and can no longer be killed by this antibiotic. These resistant bacteria are called Methicillin Resistant *Staphylococcus aureus* (MRSA) (5). Patients with breaks in their skin due to wound, indwelling catheters or burns are those with certain risk of developing MRSA infection (1). HiCrome™ Rapid MRSA HiCynth™ Agar Base is prepared by replacing animal and vegetable peptones with chemically defined peptones to avoid BSE/TSE risks associated with animal peptones. HiCynth™ Peptone No.2, HiCynth™ Peptone No.5 and amino-vitamin mix provides essential nutrients for growth. Carbohydrate is the source of carbon and energy. Phenol red is the pH indicator. The chromogenic mixture incorporated in the medium is specifically cleaved by *Staphylococcus aureus* (MRSA) to give greenish yellow coloured colonies. Sodium chloride in the medium helps to maintain the osmotic equilibrium of the medium. High concentration of sodium chloride also helps in inhibiting the accompanying microflora. Agar acts as solidifying agent.

Type of specimen
Clinical samples - Tissue samples.

Specimen Collection and Handling
For clinical samples follow appropriate techniques for handling specimens as per established guidelines (3,4). 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:**
1. Certain strains of MRSA which are intermediate may show poor growth. Further incubation up to 48 hours should be carried out.
2. Some strains may show poor growth due to varying nutritional requirements.
3. Further sensitivity can be carried out to ascertain the extent of resistance.
4. Further biochemical tests must be carried out to differentiate between MRSA and MRSE.

**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 beige homogeneous free flowing powder

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

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

**Reaction**
Reaction of 8.52% w/v aqueous solution 25°C. pH: 7.4±0.2

**pH**
7.20-7.60

**Cultural Response**
Cultural characteristics observed with added MRSA Selective Supplement (FD319) 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>Staphylococcus aureus</em>, MRSA ATCC 43300 (00211*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=50%</td>
<td>greenish yellow (Note: Green colour may develop after 48 hours)</td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em> ATCC 25923 (00034*)</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em> ATCC 6538 (00032*)</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td><em>Escherichia coli</em> ATCC 25922 (00013*)</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td><em>Candida albicans</em> ATCC 10231 (00054*)</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

Key: (*) Corresponding WDCM numbers.

**Storage and Shelf Life**
Store dehydrated 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 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 (3,4).
Reference

1. Dr. Alan Johnson, methicillin resistant staphylococcus aureus (MRSA) infection. The Support group for MSRA sufferers and Dependents, Aug 1st, 2005.

Disclaimer:
User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.