HiCrome™ Universal Agar Plate

Intended Use:
Recommended for presumptive identification of microorganisms from clinical and non-clinical specimens.

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peptone</td>
<td>15.000</td>
</tr>
<tr>
<td>Chromogenic mixture</td>
<td>2.500</td>
</tr>
<tr>
<td>Tryptone</td>
<td>4.000</td>
</tr>
<tr>
<td>Agar</td>
<td>13.500</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.2±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

Directions
Either streak, inoculate or surface spread the test inoculum (50-100 CFU) aseptically on the plate.

Principle And Interpretation
HiCrome™ Universal Differential Medium is a modification of the medium formulated on basis of the work carried out by Pezzlo (8), Wilkie et al (12), Friedman et al (3), Murray et al (7), Soriano and Ponte (9) and Merlino et al (6). HiCrome™ Universal Differential Medium is recommended for the presumptive identification of microorganisms from clinical and non-clinical specimens where the medium has broader application as a general nutrient agar for isolation of various microorganisms. This medium helps in the identification of some gram-positive bacteria and gram-negative bacteria on the basis of different colony colours exhibited by them. These colours are formed due to the reactions of genus or species specific enzymes with the two chromogenic substrates incorporated in the medium. Enterococcus species, Escherichia coli and coliforms produce enzymes which specifically cleave these chromogenic substrates to give characteristically distinctive colony colours. Peptones in the medium serve as sources of amino acids like phenylalanine and tryptophan which aids in indicating tryptophan deaminase activity, thereby facilitating the identification of Proteus species, Morganella species and Providencia species. One of the chromogenic substrate is cleaved by ß-glucosidase enzyme possessed by Enterococci resulting in the formation of bluish green colonies. Escherichia coli possesses the enzyme ß-galactosidase which specifically cleaves the other chromogenic substrate resulting in the formation of purple coloured colonies. Escherichia coli can be differentiated and confirmed from other similar coloured colonies, by performing the indole test. Coliforms cleave both the chromogenic substrates forming blue to purple coloured colonies. Colonies of Proteus, Morganella and Providencia species appear brown due to tryptophan deaminase activity. Peptone and tryptone provide nitrogenous, carbonaceous compounds, essential growth nutrients and also serve as a source of amino acids.

Type of specimen
Clinical samples: urine, faeces, Food and dairy samples, Water samples.

Specimen Collection and Handling
For clinical samples follow appropriate techniques for handling specimens as per established guidelines (4,5).
For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,10,11).
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
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.

Please refer disclaimer Overleaf.
Limitations

1. Since it is an enzyme-substrate based reaction, the intensity of colour may vary with isolates.

2. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium

3. Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user’s unique requirement.

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
Sterile HiCrome™ Universal Agar, Levine in 90mm disposable plates.

Colour of medium
Light amber coloured

Quantity of medium
25ml of medium in disposable plate

Reaction
7.00-7.40

Sterility test
Passes release criteria

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>Colour of Colony</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterococcus faecalis ATCC 29212 (00087*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>blue, small</td>
</tr>
<tr>
<td>Escherichia coli ATCC 25922 (00013*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>purple</td>
</tr>
<tr>
<td>Klebsiella pneumoniae ATCC 13883 (00097*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>blue -green, mucoid</td>
</tr>
<tr>
<td>Pseudomonas aeruginosa ATCC 27853 (00025*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>colourless (greenish pigment may be observed)</td>
</tr>
<tr>
<td>Proteus mirabilis ATCC 12453</td>
<td>50-100</td>
<td>luxuriant</td>
<td>light brown</td>
</tr>
<tr>
<td>Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>golden yellow</td>
</tr>
<tr>
<td>Salmonella Typhi ATCC 6539</td>
<td>50-100</td>
<td>luxuriant</td>
<td>colourless</td>
</tr>
<tr>
<td>Salmonella Typhimurium ATCC 14028 (00031*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>colourless</td>
</tr>
</tbody>
</table>

Key: *Corresponding WDCM numbers.

Storage and Shelf Life
On receipt store between 2-8°C 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 4,5).

Reference


Revision : 00/ 2019