Urea Indole Medium

Intended Use
To differentiate micro-organisms especially *Enterobacteriaceae* on the basis of their ability to hydrolyze urea and indole production.

**Composition**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Gms/Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>L- Tryptophan</td>
<td>3.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Potassium dihydrogen phosphate</td>
<td>1.000</td>
</tr>
<tr>
<td>Dipotassium hydrogen phosphate</td>
<td>1.000</td>
</tr>
<tr>
<td>Urea</td>
<td>20.000</td>
</tr>
<tr>
<td>Phenol red</td>
<td>0.012</td>
</tr>
</tbody>
</table>

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

**Direction**
Label the ready to use LQ126 bottle. Inoculate the sample and Incubate at specified temperature and time.

**Principle and Interpretation**
Strains of *Enterobacteriaceae* are associated with abscesses, pneumonia, meningitis, septicemia and infections of wounds, the urinary tract and the intestine. They are a major component of the normal intestinal flora of humans but are relatively uncommon at other body sites. Of clinically significant isolates, *Enterobacteriaceae* may account for 80% of gram-negative bacilli and 50% of all clinically significant isolates in clinical microbiology laboratories (1). Urea Indole Medium is used for the identification of *Enterobacteria* on the basis of *Urease* and indole production and the transdeamination of tryptophan.

This medium is very useful in the identification of *Proteus* species from *Salmonella* and *Shigella* species. The results for *urease* production should be noted prior to indole reaction, as addition of Kovacs reagent, decolourizes the medium, due to drop in pH. L- Tryptophan is an essential amino acid and is converted to skatole and indole, which is detected by the addition of Kovacs Reagent (R008). Sodium chloride maintains the osmotic balance. The phosphates helps in the buffering of the medium. Microorganisms that possess the enzyme urease hydrolyse urea, releasing ammonia, which is detected by the pH indicator phenol red. The alkalinity so developed imparts pink colour to the medium (2).

**Type of specimen**
Clinical isolates

**Specimen Collection and Handling**
For clinical samples follow appropriate techniques for handling specimens as per established guidelines (4,5).
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. All urea test media rely on the alkalinity formation and so they are not specific for determining the absolute rate of *urease* activity.
2. Further biochemical and serological tests must be carried out for complete identification.

Please refer disclaimer Overleaf.
**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 clear Urea Indole Medium in bottles.

**Colour**
Yellow to light coloured medium

**Quantity of medium**
3 ml of medium in bottles.

**pH of the medium**
6.60 - 7.00

**Sterility testing**
Passes release criteria

**Cultural Response**
Cultural characteristics observed after incubation at 35-37°C for 18-24 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Urease</th>
<th>Indole</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Escherichia coli</em> ATCC 25922 (00013*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>Negative reaction, no change</td>
<td>Positive reaction, red colour at the interface of the medium after addition of Kovacs reagent (R008)</td>
</tr>
<tr>
<td><em>Proteus mirabilis</em> ATCC 12453</td>
<td>50-100</td>
<td>luxuriant</td>
<td>Positive reaction, Pink colour</td>
<td>Negative reaction, no change</td>
</tr>
<tr>
<td><em>Proteus vulgaris</em> ATCC 13315</td>
<td>50-100</td>
<td>luxuriant</td>
<td>Positive reaction, Pink colour</td>
<td>Positive reaction, red colour at the interface of the medium after addition of Kovacs reagent (R008)</td>
</tr>
<tr>
<td><em>Salmonella Typhimurium</em> ATCC 14028 (00031*)</td>
<td>50-100</td>
<td>luxuriant</td>
<td>Negative reaction, no change</td>
<td>Negative reaction, no change</td>
</tr>
</tbody>
</table>

Key: (*) Corresponding WDCM numbers.

**Storage and Shelf Life**
Store between 2-8°C. Use before expiry date on the label.

**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**

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Disclaimer:

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