MIU Medium

For detection of motility, urease and indole production.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casein enzymic hydrolysate</td>
<td>10.000</td>
</tr>
<tr>
<td>Dextrose</td>
<td>1.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Phenol red</td>
<td>0.010</td>
</tr>
<tr>
<td>Agar</td>
<td>2.000</td>
</tr>
<tr>
<td>FD048</td>
<td>1.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>6.8±0.2</td>
</tr>
</tbody>
</table>

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

**Directions**

Label the ready to use LQ092 bottle. Stab the sample and Incubate at specified temperature and time.

**Principle And Interpretation**

MIU Medium Base is formulated to detect motility, urease and indole production in single tube. Casein enzymic hydrolysate provide amino acids and other nitrogenous substances. Sodium chloride maintains osmotic equilibrium. Dextrose is fermentable carbohydrate. Phenol red is the pH indicator which turns pink-red in alkaline conditions. The test cultures are stab-inoculated. Motility and urease reactions are read before testing Indole production. Motile organisms show either diffused growth or turbidity extending away from stab inoculation line while nonmotile organisms grow along the stabline. Organisms that utilize urea, produce ammonia which makes the medium alkaline, showing pink-red colour by change in the phenol red indicator (1). Indole is produced from tryptophan present in casein enzymic hydrolysate (2,3). The indole produced combines with the aldehyde present in the Kovac's reagent to form a red complex.

**Quality Control**

**Appearance**

Sterile MIU Medium in bottles.

**Colour**

Orange coloured opalescent butts.

**Quantity of Medium**

10ml of medium in bottles.

**Reaction**

6.60 - 7.00

**Sterility test**

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>Growth</th>
<th>Motility</th>
<th>Indole</th>
<th>Urease</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Escherichia coli ATCC</em> 25922</td>
<td>Luxuriant</td>
<td>Positive</td>
<td>Positive</td>
<td>Negative</td>
</tr>
<tr>
<td><em>Klebsiella pneumoniae ATCC 13883</em></td>
<td>Luxuriant</td>
<td>Negative</td>
<td>Negative</td>
<td>Weakly positive</td>
</tr>
</tbody>
</table>
**Proteus vulgaris ATCC 13315**
- Luxuriant
- Positive
- Positive
- Positive

**S. serotype typhimurium ATCC 14028**
- Luxuriant
- Positive
- Negative
- Negative

**Proteus mirabilis ATCC 25933**
- Luxuriant
- Positive
- Negative
- Positive

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

### Reference

Revision: 1 / 2011