Kirchner Medium Base

**Intended Use:**
Recommended for cultivation of *Mycobacterium tuberculosis* with added Poctri supplement (containing Polymyxin B, Amphotericin B, Carbenicillin & Trimethoprim).

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium hydrogen phosphate</td>
<td>3.000</td>
</tr>
<tr>
<td>Potassium dihydrogen phosphate</td>
<td>4.000</td>
</tr>
<tr>
<td>Magnesium sulphate</td>
<td>0.600</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>2.500</td>
</tr>
<tr>
<td>L-Asparagine</td>
<td>5.000</td>
</tr>
<tr>
<td>Horse serum</td>
<td>100.000</td>
</tr>
</tbody>
</table>

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

**Directions**
Label the ready to use LQ105 bottle. Inoculate the sample and Incubate at specified temperature and time.

**Principle And Interpretation**

*Mycobacterium tuberculosis* is an acid-fast gram-positive aerobic bacteria involved in most cases of tuberculosis. Humans are the only reservoir for the bacterium. Many non-pathogenic Mycobacteria are components of the normal flora of humans, found most often in dry and oily locales. Kirschner Medium was first developed by Kirschner based on the formulation of Longs Medium (1) and further modified with addition of glycerol and enrichments for the cultivation of *M.tuberculosis*.

It is widely used for antibacterial test, for antituberculosis agents and sometimes in differential culture of *M.tuberculosis* from unhealthy materials. Broth medium can give results in a week or two; hence broth medium is widely used in cases where rapid results are needed. Kirschner medium contains two phosphates, a sulphate and citrate, which buffer the medium. Hence the medium can be directly inoculated without any prior neutralization. L-asparagine in the medium supports the growth of *M.tuberculosis*, as it is a good nutrient for the organism. Horse serum also promotes the growth of the organism. Penicillin inhibits the growth of contaminating bacteria. At first stage after inoculation of *M. tuberculosis*, granular colonies are observed at the bottom of the tube and as the incubation proceeds bacterial film will be formed on the surface, rendering the medium transparent.

**Type of specimen**
Clinical samples : CSF, pus, Sputum

**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.
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Technical Data

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 to in individual safety data sheets.

Limitations
1. Some strains may show poor growth due to nutritional variations.

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
Clear, colourless to pale yellow coloured liquid

Quantity
4ml of medium in bottles.

Sterility Check
Passes release criteria

Cultural response
Cultural characteristics observed after 10-12 days at 35-37°C, with 5-10% CO2 (Observe for the growth every third day till 8th week)

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. tuberculosis H37Rv</td>
<td>Standardized inoculum giving</td>
<td>Luxuriant</td>
</tr>
<tr>
<td>ATCC 25618</td>
<td>approximately 1000000 cfu/ml</td>
<td></td>
</tr>
<tr>
<td>Mycobacterium smegmatis</td>
<td>50-100</td>
<td>good-luxuriant</td>
</tr>
<tr>
<td>ATCC 14468</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mycobacterium fortuitum</td>
<td>50-100</td>
<td>good-luxuriant</td>
</tr>
<tr>
<td>ATCC 6841</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Storage and Shelf Life
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 (2,3).

Reference
In vitro diagnostic medical device

CE Marking

Storage temperature

2°C - 8°C

Do not use if package is damaged

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