Congo red (1% aqueous) Solution

Intended Use
Congo red (1% aqueous) Solution is used as negative stain for bacteria and spirochaetes.

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congo Red</td>
<td>10 gm</td>
</tr>
<tr>
<td>Distilled water</td>
<td>1000ml</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

Directions
1. Place a drop of Congo Red solution on a clean slide.
2. Mix one or two loops of the microorganism/culture into the drop of Congo red solution.
3. Allow the smear to air-dry. NOTE: Do not heat fix the smear.
4. Rinse the smear gently with tap water and blot dry.
5. Examine the smear under oil immersion objective.

Principle And Interpretation
Negative staining is one of the many staining techniques that can be employed for viewing of bacterial cell morphology and size. The advantages of the negative stain include the use of only one stain and the absence of heat fixation of the sample. Negative staining employs the use of an acidic stain and, due to repulsion between the negative charges of the stain and the bacterial surface, the dye will not penetrate the cell. In negative staining, the results yield a clear cell with a dark background. Negative staining method also permits visualization of the usually transparent and unstainable capsule of many organisms, most importantly Cryptococcus neoformans. Congo red is the disodium salt of diphenyl-disazo-bis-1-naphthylamine-4-sulfonic acid (1). The mixture is smeared across the face of the slide and allowed to air dry. Because the stain carries a negative charge, it is repelled by the bacteria, which also have a negative charge. The stain gathers around the cell which often appears larger than stained cells.

Type of specimen
Clinical samples; food & dairy samples; Water samples

Specimen Collection and Handling:
For clinical samples follow appropriate techniques for handling specimens as per established guidelines (2, 3). For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines. For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards. 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. Negative staining does not differentiate bacteria, one can only determine morphology.
2. Certain areas might acquire more stain and therefore appear with higher contrast than would be normal.

Performance and Evaluation
Performance of the product is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.
**Quality Control**

**Appearance**
Intense red solution.

**Clarity**
Clear without any particles.

**Microscopic Examination**
Negative staining is carried out. Staining characteristics of organism is observed under microscope by using oil immersion lens.

**Results**
N\jdp\pshboj n t! !!!Colourless
'Cbdl hspvoe!!!!!!! !!!Pink

**Storage and Shelf Life**
Store between 10- 30°C in tightly closed container and away from bright light. Use before expiry date on label. On opening, product should be properly stored in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use.

**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**