

BACTERIAL MOTILITY: HANGING DROP METHOD

Objective: To observe the motility of the bacteria.

Material Required:

Cavity slide, cover slip, petroleum jelly, overnight broth culture of motile bacteria, bacteriological loop, compound microscope with low power and high power lens.

Procedure:

1. With the help of matchstick dipped in a Vaseline/petroleum jelly, a ring is outlined round the concavity of the slide.
2. Take a clean grease free cover slip, lay it on the table and place a drop of the liquid culture of bacteria at the center.
3. Invert the cavity slide over the cover slip, allowing the glass to adhere to the Vaseline/petroleum jelly and quickly turn round the slide, so that the cover slip is uppermost. The drop should then be hanging from the cover slip in the center of the concavity.
4. Place the slide on the microscope; rack down the condenser slightly and partially close the diaphragm. (**Excessive illumination renders the organism invisible**)
5. With the low power objective, focus the edge of the drop so that it appears across the center of the field.
6. Turn the high power lens into position and focus the edge of the drop. Obtain the illumination by lowering or raising the condenser and secure sharp definition by reducing the aperture of the iris diaphragm.
7. Away from the edge of the drop motile bacteria will be visible on slight fine adjustment.

Exercise

- Q1. Draw a well-labelled diagram of hanging drop preparation.
Q2. Differentiate between bacterial motility and Brownian movement.
Q3. Draw diagram of different flagellar arrangements of the bacteria with examples.
