

Saline Wet Mount Examination for Motility

I. PRINCIPLE

The saline wet mount is a quick and simple method for determining if a microorganism is motile.

II. REAGENTS AND MATERIALS

- A. Sterile 0.85% saline
- B. Glass microscope slide
- C. 22 x 22 mm coverslip
- D. Inoculating loop or applicator stick
- E. Microscope

III. QUALITY CONTROL

Ensure that the microscope is clean and in good working order.

IV. PROCEDURE

- A. Place one drop of saline on a glass microscope slide.
- B. Using a loop, pick a portion of a colony, and disperse a small amount of it into the drop of saline. Apply a coverslip.
- C. Examine the slide under high (40X) power with the condenser lowered and the iris diaphragm closed to reduce the amount of transmitted light and to improve contrast.

V. INTERPRETATION

- A. Motile
 - 1. Directional, progressive movement
 - 2. Organisms change positions with respect to each other
- B. Non-motile
 - 1. Brownian movement
 - 2. Organisms maintain the same relative positions

VI. LIMITATIONS

- A. Brownian movement, which is the result of random molecular collisions, and movement caused by the flow of liquid underneath the coverslip can be mistaken for true motility.
- B. Organisms obtained from plate media, especially older cultures, may yield false negative results. Growing the organism for 18 to 24h in soy broth and then using a drop of the broth culture for the wet mount in the place of saline will yield more accurate results.

VII. REFERENCE

- A. Koneman, E.W., S.D. Allen, W.M. Janda, P.C. Schreckenberger, and W.C. Winn. 1992. Diagnostic Microbiology. 4th ed. J.B. Lippincott Company. Philadelphia, p. 17, 196.

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