

(SOP)

**Principles and Stepwise Use of
Light Microscopy**

Department of Pathology

Faculty of Medicine

UWUSL

Standard Operating Procedure (SOP) on Principles and Stepwise Use of Light Microscopy

Title:

Principles and Stepwise Use of Light Microscopy

Issued By:

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(1). Purpose

To provide a standardized method for the correct use of the light microscope in pathology practical sessions, ensuring accurate observation and interpretation of specimens.

(2). Scope

Applicable to all medical students and staff involved in laboratory practicals of pathology

(3). Responsibilities

(3.1) Students:

- Handle the microscope carefully
- Prepare and examine slides systematically
- Record observations accurately

(3.2) Academic Staff:

- Guide students in proper microscope usage
- Ensure adherence to SOP

(3.3) Laboratory Supervisor:

- Maintain microscope functionality
- Ensure availability of materials

(4). Safety Considerations

- Handle glass slides carefully to avoid injury
- Avoid contact with biological specimens
- Clean lenses only with lens paper
- Switch off microscope after use

(5). Materials Required

- Light microscope
- Prepared slides
- Lens cleaning paper
- Immersion oil (if required)

(6). Principles of usage of Light Microscope

- Uses visible light and lenses to magnify specimens
- Total magnification = Eyepiece × Objective lens
- Resolution determines clarity of image
- Proper illumination is essential for visibility

(7). Procedure

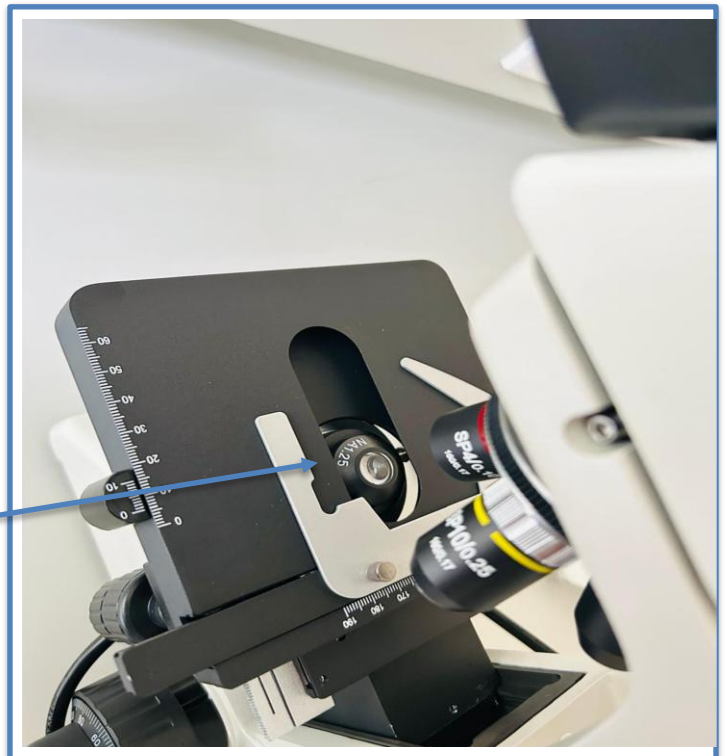
(7.1) Switching On

- Place microscope on a flat surface
- Switch on light source
- Adjust brightness



(7.2) Placement of Slide

- Place slide on stage
- Secure with clips
- Position specimen over light source



(7.3) Focusing (Low Power - 10X)

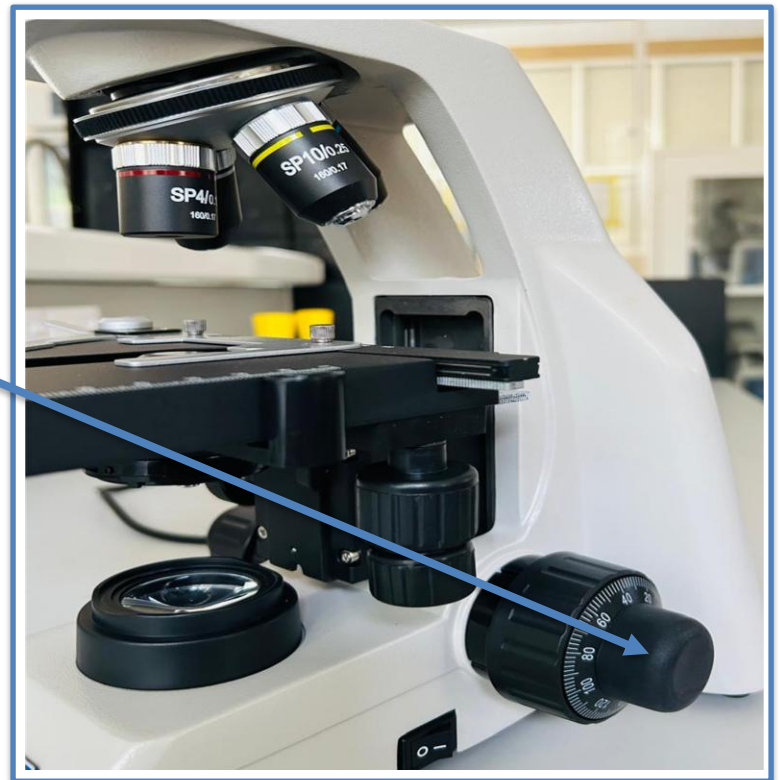
- Start with low power objective lens
- Use coarse adjustment knob to focus
- Use fine adjustment for clarity



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7.4) High Power Examination (40X)

- Rotate to high power objective lens
- Use only fine adjustment knob
- Observe details carefully



(7.5) Oil Immersion (100X, if needed)

- Place a drop of immersion oil
- Rotate oil immersion lens into place
- Use fine adjustment only

(7.6) Systematic Examination

- Scan slide from one side to another
- Avoid missing areas
- Adjust light for better contrast

(8). Recording Observations

- Note structures observed
- Draw diagrams if required
- Label findings correctly

(9). Post-Examination Procedure

- Remove slide carefully
- Clean lenses with lens paper
- Switch off and ensure the microscope is placed in a suitable location.

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