Microscopic Study of Smooth Muscle

Experiment 5 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To recognise smooth muscle in prepared histological sections.

Principle

Tissue identification links cell form and tissue arrangement to function. Non-striated spindle-shaped cells with a central elongated nucleus.

Requirements

- Authenticated prepared slides
- Compound microscope and labelled drawing sheet

Procedure

1. Survey

Focus at low power and identify a representative intact region.

2. Examine

Compare longitudinal and cross-sectional views; note that not every cut cell shows its nucleus.

3. Compare

Compare the assigned section with another tissue type and note the differences.

4. Draw

Draw a representative field and label: Spindle cells, central nuclei and absence of cross-striations.

5. Interpret

Relate the observed structure to involuntary movement in vessel and hollow-organ walls.

Observations and Record

Feature	Observation
Slide / stain / magnification	_____
Cell shape / nuclei	_____
Tissue arrangement / matrix	_____
Diagnostic feature	_____
Structure-function link	_____

Result

The section was recognised as _____ because _____. Magnification: _____.

Precautions

- Start at low power before using higher magnification.
- Do not confuse folds, tears or stain deposits with cell structures.
- Record what is visible rather than copying an atlas drawing as an observation.

Viva Questions and Answers

1. What is the main identifying pattern?

Non-striated spindle-shaped cells with a central elongated nucleus.

2. How does structure relate to function?

Involuntary movement in vessel and hollow-organ walls.

3. Why compare slides?

Comparison reveals which features distinguish one tissue from another.

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