

Dissection of mammalian kidney

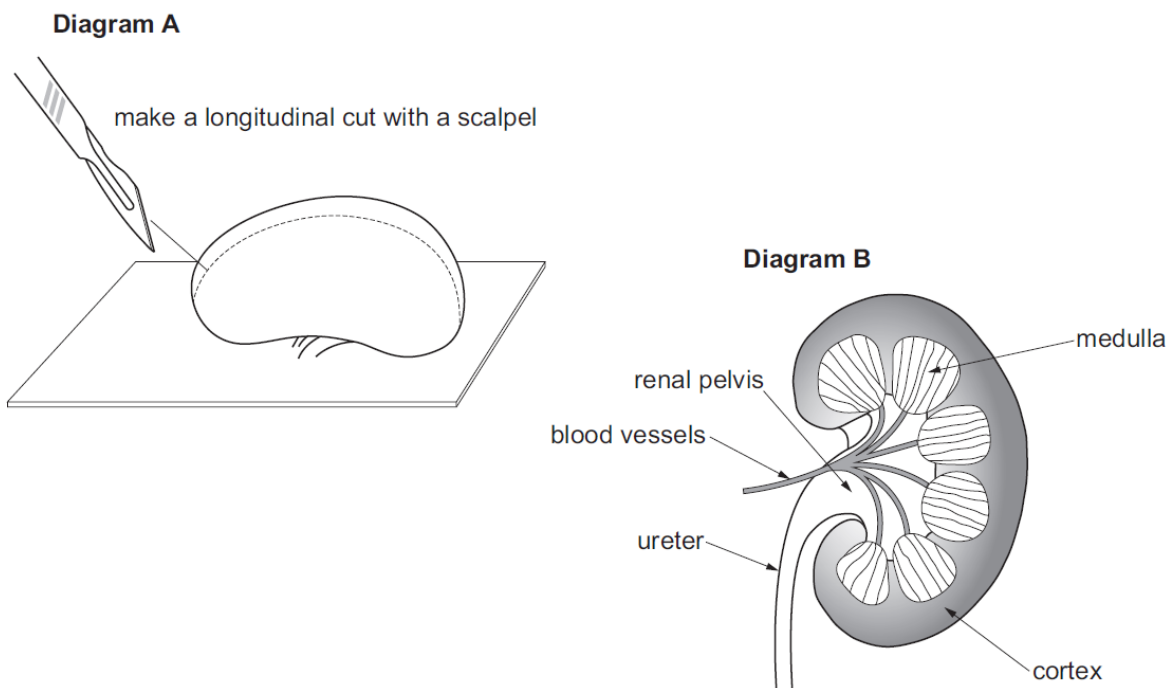
Introduction

The kidney is a vital component of the urinary system and is responsible for filtering the blood and the production of urine. In this practical you will examine the external structure and internal structure of the kidney following dissection.

Apparatus

kidney
scalpel
newspaper and dissection board
disposable gloves and goggles

Diagram of Apparatus



Method

1. Place dissection board on top of the newspaper and place the kidney on top of it.
2. **BEFORE YOU DISSECT:**
 - a. Examine the outside of the kidney. The ureter, renal artery and renal vein all enter the kidney in the same area. It may be possible to observe these structures.
 - b. Draw a diagram of the kidney.
3. Slice longitudinally through the kidney as shown in the diagram.
4. Arrange the kidney with the cut surface facing upwards.
5. Locate the cortex, which is the outer dark red / brown layer; the medulla, which is the lighter striped layer just below the cortex and the pelvis, which is the central white mass that branches out into the medulla.
6. Draw a diagram of the kidney after dissection and label the following layers: cortex, medulla and pelvis.

Risk Assessment

Hazard	Risk	Control measure
Sharp scalpel blade could cut	Cuts to the skin whilst cutting kidney	Always cut downwards onto the dissecting board
Use of animal tissue is a biohazard	Transfer of infection from animal tissue to student	Ensure cuts are covered Wear gloves

Teacher / Technician notes

Lamb or pig kidneys are widely available at a relatively low cost. Pig's kidneys are larger and therefore easier to manipulate by the student. Some pre-packed kidneys that have been freeze-thawed are often slippery to handle and difficult to dissect, therefore fresh kidneys from a butcher would be preferable to use with students.

Practical techniques covered

- B3 Use of appropriate apparatus and techniques for the observation and measurement of biological changes and or processes.
- B4 Safe and ethical use of living organisms (plants or animals) to measure physiological functions and responses to the environment.
- B7 Use of appropriate apparatus, techniques and magnification, including microscopes, to make observations of biological specimens and produce labelled scientific drawings.