

**Experiment no. :**02

**Date of experiment:**

**Aim of the experiment:** Study of plant cell structure with the help of epidermal peel of Onion (*Allium cepa*)

**Theory:** All living organisms are made up of cells. A cell is a fundamental unit of life. New cells arise from preexisting cells during cell division. A typical plant cell has an outermost layer called cell wall beneath which is a cell membrane. The cell membrane encloses cytoplasm, cell organelles and nucleus.

**Materials required:** An onion bulb, slides, cover slips, watch glass, needle, brush, forceps, razor blades, compound microscope, methylene blue (or safranin), glycerin, blotting papers.

**Procedure:**

1. Pull out the epidermal peel from onion bulb using forceps. Place the peel in a watch glass containing water and dissect into very minute pieces in rectangular shape.
2. Transfer the section of peel into a clean slide and stain with safranin (or methylene blue solution). Distain the excess stain with water and remove the excess water using filter papers.
3. Add a drop of glycerin over the section and place a clean cover slip above it. Blot dry the excess water or glycerin if remain around the cover slip area.
4. Observe the section under a compound microscope with 10X and 40X magnification and draw the details in the practical notebook.

**Results:** The stained cells appear rectangular in shape, compactly arranged without any intercellular spaces. Each cell has a distinct cell wall and a prominent nucleus.

**Precautions:**

1. Staining of the section must be appropriate. Remove excess stain if necessary.
2. Place the cover slips cautiously so that no air bubbles arise.

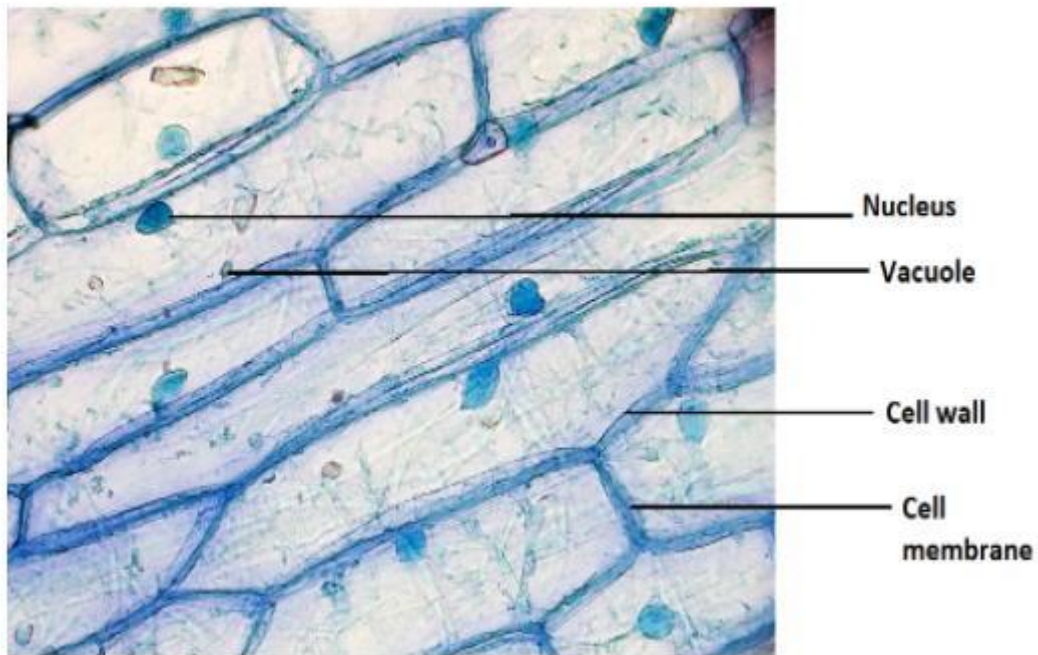


Fig 1: Epidermal peel of onion showing spherical, compact cells  
(Photo credit: Internet)