

**Practical work of Cellular Biology**

**PW N° 03: Animal and Plant cells**

**Objectives:**

- > Recognize the two types of eukaryotic cell.
- > List the different components of eukaryotic cells.
- > Observe and differentiate between animal and plant cells.

**A) Observation of plant cells with methylene blue:**

**Purpose:** Examination with methylene blue allows to observe the cell shape and some organelles (especially nucleus and cell wall).

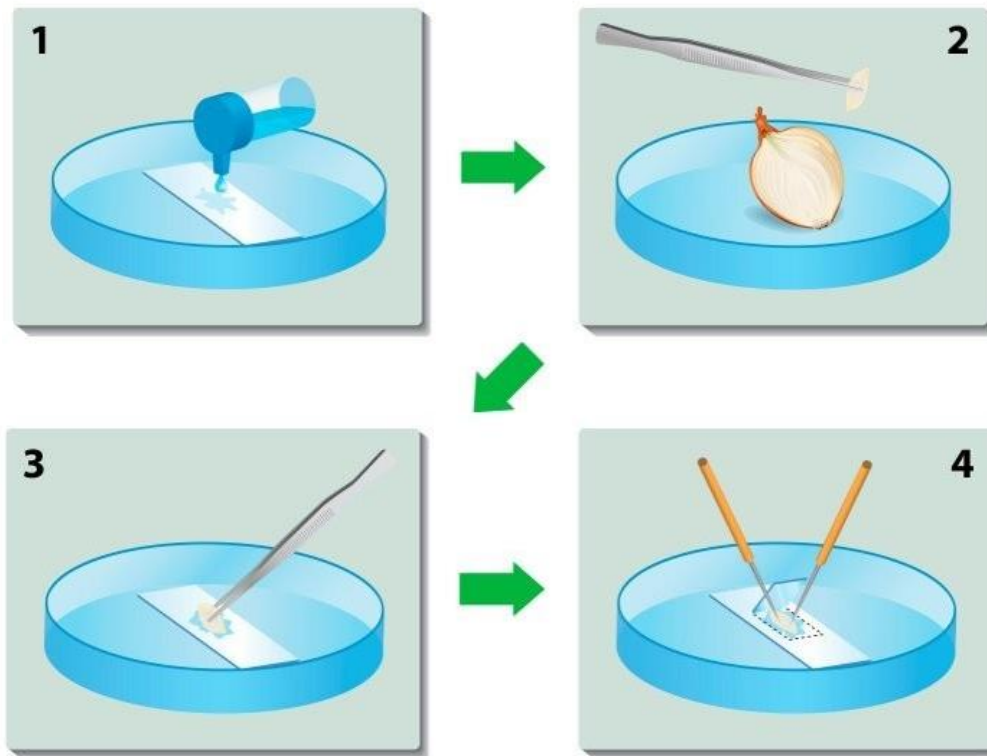
**Principle:** a temporary stained slide mount of onion cells is observed between slide and coverslip.

**Material:**

- Onion bulb
- Methylene blue stain solution
- Glass lights and coverlips.
- Dropper
- Tweezer and pin
- Sharp razor
- Paper strips
- Glycerin
- Compound light microscop

**Technique:**

- Take an outer layer of the onion bulb,
- On the concave side of this layer is located a thin transparent membranous peel of epidermal cell composed of a single layer of cells, using a blade cut a tiny square on this layer,
- using a tweezer peel off the cut epidermal layer,
- Transfer the peel on a glass light containing a drop of stain solution,
- Leave the peel in the stain for 2-3 minutes,
- Blot out the stain from the peel with paper strips and add a drop of glycerin or water to the peel,
- Gently lower a coverslip onto the peel making sure to avoid trapping any air bubbles
- Observe and study the onion peel under low and high power of microscope



### **B) Observation of Animal cells with methylene blue:**

**Purpose:** : examination with methylene blue allows to observe the cell shape and some organelles (especially nucleus and plasma membrane).

**Principle:** a temporary stained slide mount of cheek epithelial cells is observed between slide and coverslip.

#### **Material:**

- Human cheek epithelial cells
- Methylene blue stain solution
- Glass lights and coverlips.
- Dropper
- cotton bud
- Paper strips
- Glycerin
- Compound light microscope

#### **Technique:**

- Take a cotton bud or use your fingernail and gently swab the inner wall of your cheek,

- ➔ Place the scraping on a glass light,
- ➔ Add a drop of methylene solution and allow cells to take stain for 2-3 minutes,
- ➔ Carefully blot out some amount of excess stain if necessary while making sure to avoid blotting out the cheek cells as much as possible,
- ➔ Add a drop of glycerin the slide,
- ➔ Gently lower a coverslip on the specimen making sure to avoid trapping any air bubbles,
- ➔ Observe and study the slide under low and high power of microscope.

