

# Osmosis: cell wall and cover slip



**ASSIGN  
BUSTER**

Introduction: Humans sometimes don't know why phenomenon or things happen. They just accept it without knowing the cause of it. And there is no meaning in it if we just accept things without reasons. That's why this experiment is conducted so that we may know how things happen in the level of cells. Objectives: 1.

To demonstrate the principle of Osmosis and to apply it with actual life situations. Materials and Methods: •Materials: ? Compound microscope ? Glass Slide ? Cover Slip Tissue Paper ? Blade ? Rhoeo discolor Leaves ? Salt Solution •Procedures: ? Place a drop of distilled water on a clean glass slide. ? With the use of a blade, cut a thin slice of the lower epidermal leaf (red violet in color) of the Rhoeo discolor. ? Place the thin slice of the leaf on the glass slide with a cover slip and focus under LPO. Take note that the cytoplasm of the cells is red violet in color.

This is due to the pigment called anthocyanin dissolved in their cytoplasm. Draw your observation. ? Place some salt solution at the edge of the cover slip. The salt solution will seep through the specimen even without opening the cover slip. Observe the Rhoeo discolor under the microscope.

What happened to the cells? Draw your observation. ? Draw out the salt solution from the specimen by placing dry tissue paper at the edge of the cover slip. ? Place drops of pure water at the edge of the cover slip. Observe what happened to the cells. Draw your observation.

Discussion Questions: 1. What happened to the onion skin after flooding it with salt solution? What could be a possible explanation to such observation?  
oCrenation happens (where the cytoplasmic contents of the cell pull away

from the rigid cell wall) because the onion skin is exposed to a hypertonic solution (where the water solution on the cell is greater than that of the outside) and by osmosis, the water goes out of the cell, this process is called Plasmolysis. 2. What happened to the onion skin cells after replacing the salt solution with distilled water? What could be a possible explanation to such phenomenon? oThe cytoplasmic contents of the onion skin cell retained back to its original state. It is because the onion skin is exposed to a hypotonic solution (where the water solution is the same less than outside the cell) and by osmosis, the water goes inside of the cell to maintain equilibrium.

3. Which substance actually moves across the cell membrane faster, water or the salt? How can you tell? oSalt, because you don't have to wait for a few minutes to see the changes in the cell unlike in the water where you still have to wait for a few minutes. 4. Predict what would happen to freshwater algae if they were placed in the ocean.

Why? oThe freshwater algae will undergo plasmolysis and it will shrink to death, because the freshwater solution is exposed to a hypertonic solution, so it will undergo plasmolysis. 5. Explain why plants become limp when they are not watered? Describe the sequence of events that occurs after a limp plant is watered. oWhen a whole plant is short of water, all its cells are flaccid and the whole plant wilts or droops.

When you give it water, all the cells become turgid again and the plant stands up properly. Water is important to the physical strength and rigidity of plant material. Conclusion: We therefore conclude that Osmosis can greatly affect the condition of the cell, and osmosis could explain some

phenomenon that can't be explained without going into the microscopic level.