

Plasmolysis in Elodea Plant Cells

Name _____

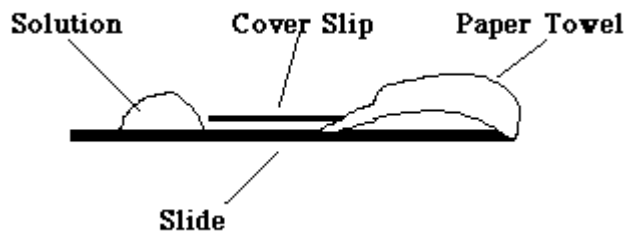
Methods

Elodea in Tap Water

1. Prepare a wet mount of an Elodea leaf with tap water. To do this, place a drop of water towards one end of the slide. Using forceps, remove a small leaf from the tip of an Elodea plant and lay it flat in the drop of water. Cover with a cover slip.
2. Observe the leaf at 40X and record your observations.
3. Increase the magnification to 100X, observe, and record your observations.

Elodea in 5% Salt Solution

1. Remove the slide from the stage of the microscope.
2. Place 2 drops of the 5% salt solution on the slide at the left edge of the cover slip.
3. Tear off a small piece of paper towel and place the torn edge on the slide at the right edge of the cover slip. The piece of towel should begin to soak up water, drawing the salt solution under the cover slip as it does so. (See Figure)



4. Return the slide to the microscope stage and observe the cells at 40X and 100X. Record your observations.

Elodea in 10% Salt Solution

1. Repeat the procedure above with 10% salt solution.
2. Observe the cells at 40X and 100X. Record your observations.

Flushing Out the Salt Solution

1. Remove the slide from the stage of the microscope.
2. Place 3-5 drops of tap water on the slide at the cover slip.
3. Draw the water through using a small piece of paper towel.
4. Observe the cells at 40x and 100x. Record your observations.

Remove the slide from the stage, clean it, and the cover slip, and put it away.

Observations

- Prepare sketches of a group of Elodea cells under each set of conditions (tap water, 5% salt solution, and 10% salt solution).
- Label the magnification under which the plant cells are being observed (40x or 100x).
- Label the sketches to note the cell structures that you can identify.
- Be sure to note any changes in the color, size, and shape of the cells.
- Make your sketches as accurate as possible.

Conclusions

Answer the following questions in your lab notebook.

1. What is the shape of a typical Elodea cell? Draw it. Your drawing should include the cell wall, chloroplasts, and central vacuole. Identify the functions for each structure.
2. What happens to the cells as the salt water flows under the cover slip?
3. What happens to the cells when the salt water is flushed out with distilled water?
4. Why did the water in the vacuole pass out of the cell?
5. Why didn't the outer boundary of the cell collapse?