

Animal versus Plant Cells Lab

Purpose: to observe differences between animal and plant cells.

Materials:

microscope	slides	coverslips	methyl blue stain
<i>Elodea</i> leaf	onion	toothpick	forceps

Procedure:

Elodea cell

1. Gently tear off a lead of the *Elodea* plant and make a wet mount
2. View the specimen at **100x and 400x, making drawings at both magnifications.**
3. On the 400x drawing, **label the cell wall and chloroplast.**
4. Throw the leaf away, clean the slide, move on.

Human Epithelial (cheek cells)

1. Place a drop of methyl blue stain on the slide.
2. With the tip of a toothpick, gently rub the inside of your cheek (inside your mouth) while rolling the toothpick back and forth.
3. Gently roll the end of the toothpick in the methyl blue drop on the slide and cover with a coverslip.
4. View at **100x and 400x, making drawings at both magnifications.**
5. On the 400x drawing, **label the cell membrane, cytoplasm, and nucleus.**
6. Clean slide, move on.

Onion Cell

1. With a scalpel and forceps, scrape a very thin layer of the white part of an onion and make a wet mount.
2. View the specimen under **100x and make a drawing. Label the cell wall, cytoplasm,** (and nucleus, if you can see it).
3. Stain the specimen with methyl blue stain without removing the coverslip by following the directions on the "how to" page.
4. View the specimen under **400x and draw and label as before** (on the 100x).
5. Clean slide, answer the questions.

Analysis Questions: to be answered on your own piece of paper and attached to your drawings.

1. What is the function of a chloroplast? How did you distinguish a chloroplast in the *Elodea* leaf?
2. What is the structure and function of a stomata? (Look it up.) Did you see any stomates in the leaf?
3. What is the function of the cell wall in a plant cell?
4. What is the function of epithelial cells (that's what your cheek cells are)?
5. What differences did you notice between the epithelial cells and the *Elodea* cells (HINT: think of the differences between any plant vs. animal cell; do NOT say one was blue and one was green!)
6. Why doesn't the onion cell have any chloroplasts? (HINT: Where do you find onions?)