

Cheek Smear Investigation

Question: Can I observe one of my own cells?

Purpose:

1. to observe your own cells under the microscope.
2. to observe the internal structures of a eukaryotic cell.

Background: the cells on the inside of your cheek are “squamous epithelial cells.” They cover many parts of your body and are constantly sloughed off to make way for new cells underneath. Alone, they are practically transparent, but with the addition of Methylene Blue (a TOXIC STAIN that attaches to any negatively charged molecules in the cell), they can be viewed under the compound microscope.

Materials:

- Glass microscope slides
- Plastic cover slips
- Paper towel
- Methylene blue solution (in dropper bottle)
- Gloves

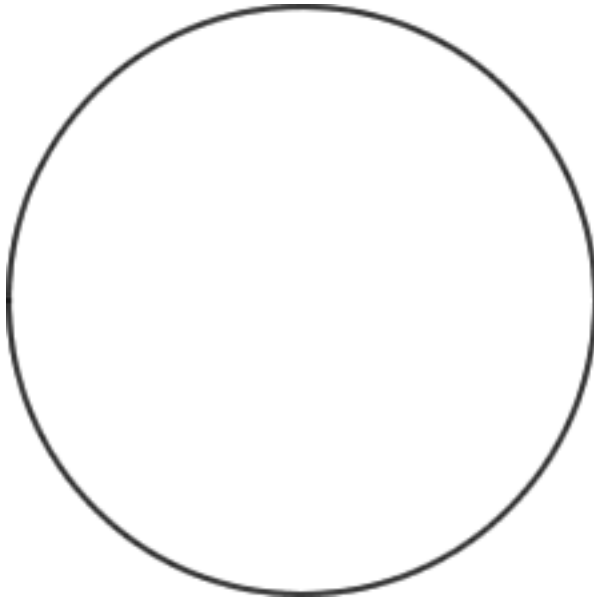
Procedure:

1. Wash and dry a set of slides and cover slips (one for each person)
2. Put on a pair of gloves.
3. Take a clean piece of paper towel and gently rub it along the inside of your cheek.
4. Remove the paper towel from your mouth, being careful to not let it touch ANYTHING except for the clean slide.
5. Smear the sample on the centre of the slide for 2 to 3 seconds.
6. Add a drop of methylene blue solution on the area you smeared, and place the cover slip on it using proper wet mount technique.
7. Remove any excess solution by touching a paper towel to the edge of the cover slip.
8. Place the slide on the microscope and view the cell(s). Each person can view their own cell(s).
9. Sketch the cell(s) at Medium and High Power in the “Data” section below:
10. Clean your slides off and dry on a piece of paper towel.
11. Throw out your gloves when finished with the materials.

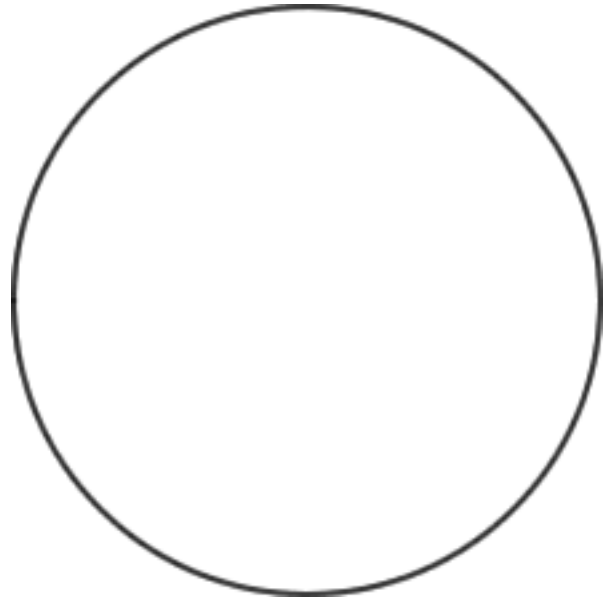
Data:

1. Sketches:

Medium Power:



High Power:



2. Label the **nucleus**, **cytoplasm**, and **cell membrane** of a single cell.

Analysis:

1. How do your answers in question 1 compare to each other?
2. Why is the methylene blue necessary?
3. Not all organelles were visible in the cells at the magnifications available. List 2 organelles that weren't visible, but should be present in a cheek cell.
4. Is the cheek cell a prokaryote or a eukaryote? How do you know?