Investigating Plant Cells: Comparing Plant and Animal Cells

All organisms are made up of cells. All cells have some things in common. However, some key
differences exist between the cells that make up plants and the cells that make up animals. In this lab,
you will examine plant cells and animal cells, noting their similarities and differences.

**Materials**
- safety goggles
- lab coat or apron
- tweezers
- onion
- glass slide
- dropper bottle of iodine solution
- coverslip
- microscope
- prepared slide of human cheek cells

**Procedure**
1. Put on safety goggles and a lab coat or apron.
2. Using tweezers, peel a small, thin piece of tissue from an inside section of the onion.
3. Place the piece of onion tissue on a glass slide. Be sure the piece of onion is small enough to fit
   on the slide. **Safety Alert:** Handle glass microscope slides with care. Dispose of broken glass
   properly.
4. Add one drop of iodine solution to the onion piece on the slide. **Safety Alert:** Iodine stains skin
   and clothing. It is a poison and an eye irritant.
5. Hold a coverslip at a 45° angle at the edge of the drop of iodine solution. Gently lower the
   coverslip.
6. Look at the onion cells under the microscope. Observe the cells at various magnifications until you
   get a clear, sharp image.
7. Make a drawing of what you see under the microscope. Label your drawing.
8. Next, look at the prepared slide of human cheek cells under the microscope. Make a drawing of
   what you see. Label your drawing.

**Cleanup/Disposal**
Before leaving the lab, clean up your materials and wash your hands.
Investigating Plant Cells: Comparing Plant and Animal Cells, continued

Analysis
1. Which cell parts were you able to identify in the onion and cheek cells?
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2. What differences did you observe between the two types of cells?
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Conclusions
1. Which organelles were you not able to find as you observed the cells?
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Why do you think you could not find them?
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2. How do the differences in the two types of cells reflect the differences in the organisms the cells belong to?
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Explore Further
Observe cells from other sections of the onion. How do they compare with the first cells you observed?
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