

Laboratory 3

Chemical Composition of Cells

Student Tip Sheet

Learning Objectives/Introduction:

- Always read the learning objectives for each lab. Don't skip this introductory material. Often answers to evaluation questions are found here.
- The term *monomer* is used in the Learning Objectives. Do you know the definition of *monomer*? If not, define this term before you begin.
- Your lab manual includes a brief introduction to Laboratory 3, Chemical Composition of Cells. In this introduction, note the term *shell* is used to describe the layers of electrons surrounding the nucleus of an atom. Another term commonly used for this layer is *orbital*. Either term will describe the location of electrons around a particular atom.
- Note especially each class of organic molecule, i.e. proteins, carbohydrates, and fats. You will be studying and testing for each one of these.

Experimental Procedure:

- The control portion of your experiment is the basis for all of your test results. Usually you will use distilled water as the control test solution. Remember that water is most always negative for everything, so if there is a change from the water test results, then you have a positive test. Don't forget to always label a "control" in your experiment and use it as a basis for comparison.
- Remember that this lab is designed to study some of the different chemicals found in living organisms. It is very easy for you to get so involved in the details of labeling test tubes properly and writing observations that you can actually forget what the experiment is all about. Step back and look at the title of each individual test and remember what the test is trying to illustrate. As you write down "test solution turns purple" or "test solution remains blue" as an observation, always include a conclusion for each result. The conclusion will tell why each observation occurs and is really the reason for the experiment.
- Read each experiment completely. Locate all test solutions and indicators. Do you know what you are going to do first? Second?
- Be organized and label everything carefully.
- Follow directions to the letter.
- Wash test tubes carefully with test tube brushes and the soap solution provided.
- Prepare your work area for the next group of students.
- Accurately record your results. Remember to record your results as compared to the control portion of your experiment.
- Draw conclusions from all of the data that you collect.