

# Basic chemistry for investigating living things assignment



**ASSIGN  
BUSTER**

Sugar Is test us sat b once present/ Light blue Glucose orange blue Onion  
Small amount present Data Table 4: Lipid Test Results Macromolecule Being  
Tested Hypothesis: Contains lipids, or not? Results from Test Potato Starch  
Stayed in circle Vegetable Oil Spread outside circle Distilled Water Data  
Table 5: Testing the Chemical Composition of Cells Indicate a + mark if the  
reagent reacts with test substance Indicate a - mark if the reagent does NOT  
react with test substance Test Substance Beirut Solution Iodine Stain  
Benedicts Reagent

Sudan III Protein (Albumen) Lipid Questions Exercise 1: Testing for the  
Presence of Proteins in Cells A. What is the test substance? B. Which test  
tube represents the control? The one with water. C. Why? When protein  
molecules are present, Beirut Reagent reacts with the protein to form a  
purple color. Tube number one is the control tube because it is distilled  
water and has no protein; the tube has no color. C. Which test tube  
contained the most test substance? Amylase D. Other than the control,  
which test tube contained the least test substance?

Hard to say because the other nest didn't have much of a color, so it didn't  
seem like there was much protein at all. E. Did the results agree with your  
initial hypothesis in every case? Yes F. Why or why not? Starches and sugars  
are helped by protein enzymes and Amylase is an enzyme. Good source of  
protein, so I thought Albumen would have protein Eggs are a F What are your  
conclusions about your results? There is a lot to protein in cert. foods, but  
the Beirut reagent isn't strong enough to pick up small amounts G. If the  
color change is not as you expected, what might be the reasons?

Intimidation H. Add another 5 drops of Beirut Reagent to each test tube and  
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stir as before. Do your results change? I didn't notice any change Discussion  
A. What is the purpose of this exercise? To use color to detect if substances have protein since Beirut reagent would react with a protein to form a purple color B. Why is it important to clean droppers and equipment between chemical uses? To avoid cross contamination C. What other types of foods or substances contain high levels of protein? Meat or fingernails D. Suggest a situation where you might use the Beirut Reagent colorimetric test.

It could be used to kidney disease test for protein in your urine. The test could be used to check for E. What other types of analytical procedures detect the presence of proteins? The Lowry Method Exercise 2: Testing for the Presence of Starch in Cells A. What is the test substance? Starch B. Which test tube represents the control? Water C. Why? Water has no starch and it turned amber, so if your color was amber, you had no starch D. Which test tube contained the most test substance? Potato starch Other than the control, which test tube contained the least test substance?

Albumen and amylase E. Did the results agree with your initial hypothesis in each case, why or why not? Known to have starch, and they did. I didn't expect the proteins Yes, potatoes are to have starch F What are your conclusions about the results? Carbohydrates make up a lot of sources, but they're not in every natural food source G. If the color change is not as you expected it to be, what might be the reasons? That items I did not think had starch, actually did have it. A. What is the purpose of this exercise?

Iodine reacts with carbohydrates to form a dark blue color, so you would know if the substance had carbohydrates based on the color it turned. B. What

other types of foods or substances contain high levels of starch? Wheat grain

C. Suggest a situation where you might use the iodine colorimetric test.

Testing for thyroid issues D. What other types of analytical procedures

detect the presence of starch? Detect the presence of starch by using the

chemical method Exercise 3' Testing tort the Presence to Sugar in A. What is

the test substance? Sugar C. Why? There is no sugar in water, and it turned a

light blue.

Any test with that color loud mean that there was no sugar C. Which test

tube contained the most test substance? Glucose D. Besides the control,

which test tube contained the least test substance? Potato starch D. Did the

results agree with your initial hypothesis in every case? Yes E. Why or why

not? The test specifically looks for glucose, so other carbohydrates and

starches that don't have glucose, will not show sugar F. What are you

conclusions about the results? Glucose will react with Benedicts reagent G. If

the color change is not as expected, what might be the reasons?

Contamination