Osmosis lab report assignment

The result was that the more sucrose in the bag, the greater the final mass. Introduction: The reasons for doing this lab are so that we can learn about osmosis with a model similar to a cell and so that we can have a better understanding of the process and nature of osmosis. Osmosis is diffusion but with water molecules. A concentration gradient exists and because of this, diffusion of solutes can’t happen. Very select things can pass in and out, such as water, oxygen, and carbon dioxide.

In this situation, a large molecule of starch would be dissolved in eater because the molecule is too big to fit through the membranes pores. Since the membrane in permeable to water molecules, it causes the water molecules to diffuse from an area of high water concentration to an area of low water concentration. This movement itself is osmosis. To determine if the concentration of solutions is isotonic (solute is equal to the cell), hypotonic (solute is lower outside of the cell), or hypersonic (solute is higher outside of the cell), you measure the total amount of particles in the solution.

My hypothesis is: if the alkalis tubing that is filled with sucrose solution and fully emerged in a beaker of distilled water, then the water will seep into the dialysis tubing and the tubing will become a greater mass. The independent variables in this lab are the beakers of distilled water, and the amount of sucrose (0. 2-1 MM). The dependent variables are the final mass of the bag, the change in the mass of the bag, and % change in the mass of the bag. The control is the amount of sucrose solution and distilled water (ml). Methods and Materials: 1. Time Period: * One class period (approximately Air and mini) 2.

Subject Studied: * % Change in the mass of the bag 3. Materials Used: * 6 beakers * 1 funnel * CACM soaked dialysis tubing * 12 pieces of string * Balances * Distilled water * Mimi 0. MM Sucrose Solution * 1 mom 0. MM sucrose solution * Mimi 0. MM Sucrose Solution * 1 Iron 0. MM Sucrose Solution * Mimi 1 -MM Sucrose Solution * Mimi Distilled water 4. Procedure: * Number the beakers 1-6. * Gently rub the dialysis tubing between your fingers to open the tubing up. Tie one end of the tubing with a piece of string and fill the tubing with water to test and see if it leaks.

Empty out the tubing. Repeat for all six of the dialysis tubing. * Use the medicine cup given to you to measure out ml of each of the solutions and put into its corresponding dialysis bag: Bag to be put in cup # Solution to be put in bag I 1 | Distilled Water I 2 | 0. MM Sucrose I 3 | 0. MM Sucrose I 4 | 0. MM sucrose I 5 | 0. MM Sucrose I 6 | 1. MM Sucrose I * Rinse out the medicine cup between solution uses. Don’t forget to gently squeeze out the excess air in bags. * Tie off the other end of all dialysis tubing with a piece of string. Run the bag under water for just a moment.

After, gently squeeze the bag to check if it is leaking. If there’s a leak, be sure to retie it tightly/ tighter. * Dry the outside of the tubing with a paper towel and use the balance to measure the mass of all 6 bags separately. Record the masses. * Place the bags into their corresponding beakers and fill the beakers with distilled water enough that the dialysis tubing is completely submerged in the distilled water. Wait 30 minutes to let osmosis happen. * After the time’s up, remove the bag from the beakers, wipe off excess liquid gently, and record the bags’ masses separately. Record the masses.

For all solutions, subtract the initial mass from the final mass to get the change in mass of the bag. Record the positive or negative results. * For all solutions, take the results from the last step and divide it by the initial mass, then multiply it by 1 00 to get the percent change in mass for each bag. Record the percentages. * Calculate the class average % change in mass for each solution. Record results. Results: Discussion: The data is stating that the mass has risen after the 30 minute time period. Osmosis has occurred, because the water molecules have diffused into the dialysis tubing.

I have concluded that my hypothesis was correct, since the date reinforces that the mass is greater after being put into the beakers of distilled water. Some sources of error could've been when we found out that one of our bags was leaking, another would be when the sucrose solution was spilled out of the dialysis tubing and it got all over the outside and we mightn't not wiped off all of the solution off. More errors could be not covering the bags completely with distilled water or not leaving the bags in the beakers for exactly 30 minutes.

Some modification that could be made to the lab to improve it could be having he same length of tubing/string, and stopwatches for timing 30 minutes exactly. Also, putting the tubing in at the same time so the timing is all on point could help with accuracy. Questions that came to mind during this lab were; Is the timing correct and how much will it affect the results? Are the solutions of sucrose sitting in the bags waiting while we fill the others going to change/be affected? Are any of the bags leaking or have any excess solution outside of the bag?