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Bio/Anatomy Lab 2311-OL26
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Osmosis and Diffusion Lab report

Introduction: The experiment that had taken place had to do obviously with diffusion and Osmosis which is the diffusion of water. When it comes to diffusion and Osmosis what happens is water from a level of high concentration goes to a level of low concentration. Same with diffusion except that diffusion takes place with different molecules like salt or carbon dioxide. What is being tested in this lab is which one of the solutants has a larger permeability then the other.

Purpose: The purpose of this is to be able to find out which solutants have a certain permeability. As some of these solutions are contained in the body and through certain chemical reactions what occurs in this lab to an extent occurs in every human's body. The question I want answered is how diffusion actually takes a molecule from a high point of concentration and inserts that molecule in a place of low concentration or is it just something that occurs without much changing chemically.

Hypothesis: Essentially what i think is going to happen is If i put the dialysis bag of the glucose solution into the distilled water what will happen is the concentration of low molecules which is the dialysis bag filled with solution will have some molecules diffuse into the bag potentially making it weight more, for the 40% glucose solution if the solution in the dialysis bag gets put into a beaker with 40% glucose solution then not much is going to happen because they even themselves out. For the 10% NaCl I think it will come out weighing more. That is because 10% of salt solution is put into a beaker with distilled water. I believe there is a higher concentration of molecules surrounding the salt solution with the beaker being filled with distilled water. Lastly for the 40% sucrose solution i think that again there will be an evening out of molecules therefore the sack wont get anymore heavier.

Materials: 4 sacks(dialysis plastic tubing) , 4 beakers (cups) , 20% glucose solution (20 ml), 40% glucose solution (20 ml), 10% NaCl (salt) solution (20 ml), 40 % sucrose solution (20 ml).

Procedure: First thing in this lab is you will fill up the 4 sacks with the respected solutions. After that the weight of each sack is taken. Then the sacks are inserted into each one of the beakers that the solution pertains to. After that you will put a timer on for 45 minutes and wait it out. After the 45 minutes are up you will take out each of the respected sacks from their beakers and weigh them a second time. You will record the weights before and after and you will also record your observations to see if your hypothesis was correct.

Results: The results were not too shocking to see at all. The first sack which contained 20ml of the 20% glucose solution started at a weight of 7.1 gm before the timer was set and it was put

into the beaker. When the 45 minutes were up the sack weight 8.0 gm an increase of about .9 would indicate that some distilled water was able to diffuse through. The second solution containing 40% glucose and which was also 20ml weighed 6.9 gm before being placed in a beaker of 40% glucose too, after the 45 minutes were up the weight was taken and it stayed at 6.9 gm indicating that there wasn't any area of low or high concentration for diffusion to take place. The third solution containing 10% of NaCl(salt) also 20ml weighed 7.2 gm prior to being set in the beaker of distilled water for 45 minutes. After the timer was up the bag was weighed at 7.8 gm indicating an increase of 0.6 also indicating osmosis occurred. Last solution was 40% sucrose 20 ml , this sack weighed at 7.1 gm prior to being set in the beaker of distilled water for 45 min. After the timer went off the new weight of the bag 8.0 gm indicating that osmosis did occur showed by a .9 gm increase in weight.

Results					
Beakers	Distilled water	40% glucose	10% NaCl	40% sucrose	Distilled water
Beaker	Beaker 1	Beaker 2	Beaker 3	Beaker 4	Beaker 5
Initial weight (g)	7.1	6.9	7.2	7.1	7.1
Final weight (g)	8.0	6.9	7.8	8.0	7.1
Change in weight (g)	0.9	0	0.6	0.9	0
Result (Osmosis/Diffusion)	Positive	Positive	Positive	Positive	Positive
Beaker 1	Distilled water	40% glucose	10% NaCl	40% sucrose	Distilled water
Beaker 2	Distilled water	40% glucose	10% NaCl	40% sucrose	Distilled water
Beaker 3	Distilled water	40% glucose	10% NaCl	40% sucrose	Distilled water
Beaker 4	Distilled water	40% glucose	10% NaCl	40% sucrose	Distilled water
Beaker 5	Distilled water	40% glucose	10% NaCl	40% sucrose	Distilled water

Conclusion: What was being investigated was which one of these solutions would have osmosis or diffusion occur when put into a beaker of water. This was represented by the solutions that were the independent variable in the experiment and whether their weight went up or stayed the same after being submerged in a beaker of either distilled water or a glucose solution. The dependent variable being the water or glucose that is being used to submerge the solutions.