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Ions With Distilled Water as an Ambient Environment Throughout the process of the experiment, various concentrations of a solution of Sucrose and Water were placed into hydrolysis tubing and placed into an ambient environment of sterile water.

An observation of a Starch solution in an ambient solution of sterile water and iodine was done to check for a chemical reaction of starch and iodine indicating diffusion. Also an observation of two segments of carrot placed each in Distilled and in Salt Water, to determine whether or not osmosis is taking place...

" In an attempt to satisfy my hypothesis that when one placed a set amount of various molar concentrations of a solution of sucrose and distilled water into an ambient solution of distilled water, diffusion into the hydrolysis tubing with the solutions will occur, causing the tubes to gain weight. Also that a solution of starch and water in hydrolysis tubing placed in a Water/Iodine solution would generate a chemical reaction within the tube between the starch and the iodine, also indicating diffusion. And lastly that two pieces of carrot, one placed in water, the other in salt water, would reveal that the salt water would draw moisture out of the carrot into the salty environment, causing the carrot in the salt water to become limp the opposite would occur in the other carrot." Throughout the process of the experiment, various concentrations of a solution of Sucrose and Water were placed into hydrolysis tubing which in turn are placed into an ambient environment of sterile water. Also, an observation of a Starch solution in an ambient solution of sterile water and iodine was done to check for a chemical reaction between the starch and iodine indicating diffusion. Last, an observation of

two segments of carrot placed one each in Distilled and in Salt Water, was done to determine whether or not osmosis is taking place between the carrots and the solution or the solution and the carrots. Materials

Required Four 5" lengths of hydrolysis tubing Two segments of carrot, sliced lengthways and about 3" long Four Small cups, labeled Starch, 1M, . 4M and H₂O Iodine Pipette or eyedropper Scales measuring grams about 5oz of each solution > 1M sucrose/water, . 4M sucrose/water, distilled water, 50% starch/water Two 30 minute Timers Two 20oz Open Beakers with one filled with Distilled Water, and the other Salt Water (about 15oz) Rubber bands or string to tie off tubing

Procedure First, 2 lengths of carrot, cut down the middle lengthways, are placed one each in a beaker of distilled water and the other in salt water and allowed to set. In the first experiment, 3 lengths of hydrolysis tubing with one end tied off securely, approximately 5 inches long, were filled each with one of 3 solutions, distilled water, . 4M solution of sucrose and water, and 1M solution of sucrose and water. Then all air in the tube was removed, and the other end was tied off securely. 3 Small cups were then filled with distilled water and labeled with one of the 3 solutions mentioned earlier. Then tubing with the solutions inside are then dried completely and all excess solutions cleaned off from the exterior. The weights of the tubes in grams was then recorded and the tubes are placed in their respective cups of sterile water and allowed to set for thirty(30) minutes. While the first observation is setting, another 5 inch length of hydrolysis tubing is tied off at one end and fill with 10? 15ml of a 50% solution of Starch and distilled water. The air is removed from the tube, and the other end is tied off securely, and all excess starch is removed from the exterior of the bag to prevent the occurrence of starch in the ambient

solution, giving the appearance of diffusion into the ambient solution.

Another cup is filled with distilled water, and approximately 15 drops of pure iodine is added. The tube with the starch solution should be placed into the cup filled with iodine solution and allowed to set for 30 minutes. Next, while both solution sets are setting, an observation was made of the carrot pieces that were placed