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Lab2- Molecular activity and Membrane transport

Molecular activity and membrane transport

In this lab we will observe and document; this lab will show us passive transport which occurs with constant movement of molecules. We will also see Diffusion the movement of particles from higher to lower concentrations. The basic properties of passive transport include diffusion, osmosis, and differential permeability; also, the concepts of filtration and the effect of tonicity on cells.

We will be using a significant about of material for these experiments since we will be completing multiple for lab 2. I completed these labs with my partner along with several classmates to complete all 6 labs. During these experiments we used petri dishes, water: which included several different temperatures, crystal of potassium, methylene, potassium permanganate, filter papers, glass funnels, charcoal, dialysis bags, 50% sucrose, 25% sucrose, beakers, 1%starch, 10% glucose all materials were used throughout all 6 labs.

Labs 1 was measurements of diffusion through the liquid we used 2 petri dishes we used three different temperatures for each dish, one was filled with 25, 5, and 45 Fahrenheit water. Then one drop of crystal potassium was dropped into each dish. We watched and waited to see which dish would move/ largest in size. Dish C was the largest at 25 Fahrenheit water, we Believe the temperature and the distance when released from the droplet into the petri is what is how we got our results.
Lab 2 Demonstration of filtration; we folded three filter papers into cones and inserted them into three separate glass bottles we were at the paper to make them stick to the glass then prepared our solution. We mixed three 100 mL solutions of charcoal and water. We made one thick, medium, and thin; then we poured 50 ML's of each solution one at a time into the funnel. We counted how many drops per solution it would take until the funnel was half filled/ empty to see if charcoal would pass into filtrate. As a result, the fasted filtration was the thin solution.

Lab 3 measurement of the osmosis; we tied the end of two dialysis bags and then filled each bag one with 50% sucrose solution and the other with 25% sucrose solution. We then inserted both bags in two separate beakers of distilled water making sure the dialysis bags are fully submerged but not touching the bottom of the beakers, we allowed five minutes for the systems to equilibrate. We have been recording the fluid levels of the glass tubes in millimeters every 10 minutes for 50 minutes. The dialysis bag filled with 25% sucrose weighting 23.42g rose to the top at five minutes, and the other bag filled with 50% sucrose weighting 47.26g rose at 45 minutes. 25% sucrose has the fastest osmosis rate; we believe it rose quicker because it weighs less.

Lab 4 measurement of differential permeability of sugar and starch

We filled a dialysis bag with one 1% starch -10% glucose solution. We tied the bag to a glass rod and suspended it in a beaker of distilled water after. After 15 minutes we check the water again for starch and sugar and how we checked for starch is we added 10 drops of Lugol's solution to 5ml of water obtained from the beaker and the result was: no starch/ sugar was present. The change of color depended in dialysis bag and it resulted in a blue color which proved no sugar. After sitting in distilled water for 60 minutes determined that sugar was moderately present in it and turned into a yellow color. As regards the permeability, the change of color depended on the dialysis bag, and it resulted in a blue color which proved to have no sugar. After sitting in distilled water for 60 minutes, it was determined that sugar was moderately present in it and turned into a yellow color. As regards the permeability of the dialysis bag we can determine that sugar was present and mixed in with distilled water.

Lab 5 The effect of tonicity on red blood cells, for this lab our professor set up for us. A wet mount slide will be made of each solution we will examine each slide under high dry lens of a compound microscope. We then observe the following: Hemolysis of a cell in hypotonic solution, maintenance of cell size in the isotonic solution, Crenation of cells in the hypertonic solution. We then made a drawing of each observation and explained each slide. We can understand the difference between passive and active transport, being able to define diffusion osmosis active transport dialysis and Filtration.