

- When the plasma becomes too concentrated, receptors in the hypothalamus causes the secretion of the hormone. This is because the receptors are sensitive to increasing plasma osmolality.
- If the blood levels returning to the heart from the veins are high, stretch receptors in the atria are activated. As the body wants to get rid of excess fluid, this prevents the secretion of ADH.
- On the other hand, If the blood levels are low, stretch receptors in aorta and carotid arteries are activated. As the body wants to maintain the volume of blood, ADH is secreted; this causes enough blood pressure to generate, to deliver blood to the tissues.

Diffusion of molecules across a selectively permeable artificial membrane

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Diffusion of Molecules across a Selectively Permeable Artificial Membrane

Introduction:

In this investigation you will be using Glucose test strips to test for reducing sugars and the Iodine test for starch to determine what happens through diffusion in three solutions. These solutions will be labelled A, B and C.

Before you start your investigation you will be shown a small demo, this will show you the positive results for both the Glucose test strips and the Iodine test.

Positive result for Glucose test Strip: Pale green - Dark brown

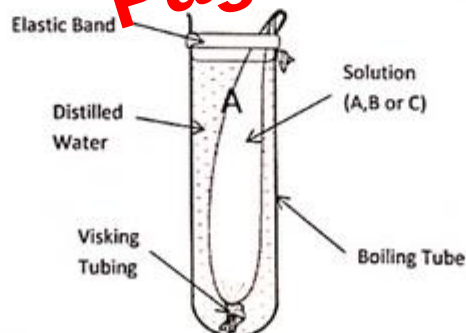
Positive result for Iodine test: Black

Materials:

- Solution A: Glucose only
- Solution B: Starch and glucose
- Solution C: Starch only
- Visking Tubing – 15cm lengths, tied at one end and pre-soaked in distilled water (on teachers bench)
- Elastic Bands/ paper clips (to secure the other end of visking tubing)
- Boiling Tubes and Racks
- Spotting tiles
- Dropping pipettes
- Stop watch
- Marker pen
- Water bath @ 30°C
- Iodine in KI solution
- Glucose Test Strips

Method:

1. Using a spotting tile test a drop of each of solutions (A, B and C) with Iodine Solution. Record the colour change, if any, in the results table.
2. Then test all 3 solutions with the glucose test strips and record the colour change, if any, in the results table.
3. Now label 3 boiling tubes with A, B, and C as well as your initials.
4. Using a pipette, fill a piece of visking tube $\frac{1}{2}$ full with solution A. Once filled, fold the open end firmly and rinse the outside of the visking tube thoroughly with water.
5. Place the visking tubing into the boiling tube, hold it, fold the end of tubing over the edge of the boiling tube and secure with an elastic band or paper clip.
6. Repeat steps 4 and 5 with solutions B and C.
7. Then add distilled water to all of your boiling tubes containing the visking tubing so it is about 2cm full. Your tubes should look like this:



8. Once your boiling tubes have been filled with water place them into a 30°C water bath and start your stopwatch.

9. After 15 minutes, test both the outside and inside solutions with iodine solution and the glucose test strips. Record the colour changes, if any, in the results tables below.

Results: