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Bio2311(OI26)
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Lab report

Diffusion and Osmosis through Nonliving membranes

Introduction

Diffusion is the movement of molecules from an area with a higher concentration to an area with a lower concentration. Osmosis is the process in which a solvent tends to pass through a semipermeable membrane from a less concentrated solution to a more concentrated solution. Both diffusion and osmosis are important processes that try to maintain equal force inside cells and organisms.

Purpose

The purpose of this lab is to observe and understand the process of both Diffusion and osmosis and the cause of the different results.

Materials

- **Beakers**
- **Dialysis Sacs**
- **Distilled water**
- **Glucose solution**
- **Sodium chloride solution**
- **Sucrose solution**
- **Test tubes**
- **Benedict's solution**
- **Test Tube Holder**

Hypothesis

If we place the sacs with glucose solution and NaCl and distilled water then the water will go mixed into the dialysis bag and diffusion will occur.

Procedure

1. Label the sacs 1A-4A
2. Label the beakers 2B-4B
3. Fill Sac 1-2 with distilled water and 40% glucose, Fill Sac 3 with 10% with NaCl solution and distilled water, Fill Sac 4 with distilled water and 40% sucrose solution
4. Record the weight at 0 minutes
5. Leave the sacs for 45 minutes
6. After 45 minutes have passed remove the sacs from the beakers and record the weight.
7. 7. Perform Benedict's test and place 5 drops of Benedict's solution in 1B,2B and 4B.
8. Test 3A and 3B for sodium chloride
9. Record the data

Beaker	Contents of Sac	Initial weight	Final weight	Weight change	Test beaker fluid	Test sac fluid	
Beaker 1 ½ filled with distilled water	Sac 1 20ml of 40% glucose solution	7.1gm	8.0g	0.9gm	Positive	Positive	
Beaker 2 ½ filed with 40% glucose solution	Sac 2,20 ml of 40% glucose solution	6.9gm	6.9gm	0gm	Positive	Positive	

Beaker 3 ½ filled with distilled water	Sac 3, 20ml of 10% NaCl solution	7.2gm	7.8gm	0.6gm	Positive	Positive	
Beaker 4 ½ filled with distilled water	Sac 4, 20ml of 40% sucrose solution	7.1gm	8.0gm	0.9gm	Negative	Positive	

Conclusion

In conclusion, diffusion and osmosis occurred in all beakers and sacs except beaker 4. Both diffusion and osmosis did not occur in 4 because sucrose is too large of a substance for it to go through the dialysis bag. In hypotonic solutions 1A,1B,3A,3B,4A,4B there was a weight gain but in isotonic solutions like 2A and 2B there was not a weight gain. The weight stayed the same.