Lab 3: Membrane Transport

Activity 1 Diffusion

Questions:

1. What kinds of molecules are in the “sack”?

2. What kinds of molecules are in the beaker?

3. Of all the molecules listed above, which do you think could cross a semi-permeable membrane? Think about what you know of the structures of the molecules…

4. Based on your answers above, make a prediction about what you expect the results to be.

5. Write a hypothesis statement based on your predictions.

Results:

Iodine can be used as a marker for starch because it turns black when it comes in contact with starch.

6. Did the starch solution in the beaker change color?

7. Did the iodine solution in the sack change color?

8. Explain your results.
Activity 2- Osmosis

Questions:

1. What kinds of molecules are in each sack? In the beaker?

2. Are any of these molecules able to diffuse through semi-permeable membranes?

3. If so, which ones?

4. Which sack has the highest concentration of sucrose? The lowest?

5. How do you expect the molecules in sack #1 to behave? Write your responses in the form of a hypothesis statement.

6. Sack #2?

7. Sack #3?

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Results:

8. Did any of the sacks gain weight? If so, which one(s)?

9. What kind of molecules made them gain weight? How?

10. Did any of the sack lose weight? How did that occur?

11. Were your hypotheses correct? Why or why not?

Activity 3- Osmosis in “Real” Cells

Questions:

1. What kinds of molecules are in the saline solution?

2. What kinds of molecules are in the RBC’s?

3. Which of the above molecules can diffuse through a semi-permeable membrane?

4. The concentration of saline inside of animal cells is about 0.85%. Which solution is hypertonic?
5. Which solution is isotonic?

6. Which solution is hypotonic?

7. What do you expect will happen to the RBC’s when they are placed in each solution?

Write a hypothesis statement for each.

a. Hypertonic:

b. Isotonic:

c. Hypotonic:

Results:

Record the results of the transparency test here. Describe your observations of the RBC’s in each of these solutions.

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Record the results of your microscopic observations here. Draw what you observed on each slide.

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