Argumentative essay onlab report

Business

Solute Concentration of Potatoes Lab #1 Purpose: To find the molarity/concentration of potato cytoplasm. Materials: As on page 1 in the lab handout.

Procedure: As on page 1 in the lab handout. Data and Observations: Test Tube #| Concentration of sucrose solution (mol/L)| Initial Mass (g)| Final Mass| Percentage change in mass| 1| 1. 0 mol/L| 3. 00g| 2. 25g| -25. 0%| 2| 0.

9 mol/L| 2. 70g| 2. 07g| -23. 3%| 3| 0. 8 mol/L| 2. 92g| 2.

25g| -22. 9%| 4| 0. 7 mol/L| 2. 60g| 1. 94g| -25.

4%| 5| 0. 6 mol/L| 2. 61g| 2. 04g| -21. 8%| 6| 0. 5 mol/L| 2.

68g| 2. 21g| -17. 5%| 7| 0. 4 mol/L| 2. 7g| 2. 26g| -12.

1%| 8| 0. 3 mol/L| 2. 63g| 2. 70g| 2. 70%| 9| 0. 2 mol/L| 2.

77g| 3. 17g| 14. 4%| 10| 0. 1 mol/L| 3. 10g| 3. 55g| 14.

5%| 11| 0. 0 mol/L| 2. 91g| 3. 61g| 24. 0%| Discussion: 1.

Some potatoes increased in mass while others decreased due to osmosis. Potatoes that had a higher concentration increased in mass because water passed through the membrane into the potato in an effort to dilute it. Potatoes that had a lower concentration than the solution decreased in mass because water flowed through the membrane into the solution trying to dilute the solution.

The water moves to the higher concentration to dilute it/maintain homeostasis, increasing or decreasing mass depending on whether it goes in or out. 2. According to the graphed data (attached) gathered from this lab, the approximate concentration at which the solution and potato cytoplasm is isotonic is 0.

4 mol/L. I can therefore conclude that the approximate solute concentration of potato cytoplasm is also 0. 4 mol/L. This is because the concentration of potato cytoplasm never changed throughout the experiment, but the sucrose solution did.

Seeing as isotonic means both concentrations are equal, I can conclude that the potato cytoplasm was always around 0.

4 mol/L. 3. I suspect that the mass of the potato would decrease just as it did with the sucrose solution because the solution would still be hypertonic to the potato. 4. The potato cytoplasm is permeable to water, but sugar is not.

5. Distilled water would keep the vegetables crisper. This is because the water/solution would be hypotonic to the vegetable, making the water flow into the vegetable keeping it crisp. 6.

It’s important that they are the same concentration so that they are isotonic. If the chemicals were either hypotonic or hypertonic to the blood plasma, it could result in lysis or crenation of blood cells.

7. The responding variable would be the change in mass of the potato cytoplasm, and the manipulative variable would be the solute concentration of the sucrose solution. Conclusion: In order to find the solute concentration

of the potato cytoplasm we calculated the difference in mass while controlling the concentration of the sucrose solution.

We then graphed our findings, and used a best-fit line to find the approximate concentration of potato cytoplasm. In conclusion, we found that as the concentration of sucrose decreased, the change in mass increased; the concentration of potato cytoplasm to be 4.

0mol/L, and the membrane to be permeable to water but not sugar. This can be related to every day life in understanding how a semi-permeable membrane and diffusion relate. A cell, when suspended in a hypotonic or hypertonic solution will release or absorb water to reach isotonic. A good example would be with our red blood cells.