

Lab 03 – 2/10/14
Learning Objectives

By the end of this lab you should understand:

- The processes of diffusion and osmosis
- The measurable properties of membranes in the laboratory
- The difference between a solution, a solute, and a solvent
- The purpose of each step in the DNA extraction lab

Key facts:

- Solutes diffuse through solvents, whether they be semisolids, liquids, or gases
- Water's diffusion through a membrane is called osmosis and can be visually measured if the solute concentrations are different on each side
- Cell membranes are partially hydrophilic and partially hydrophobic, and can be dispersed by mixing with another partially hydrophilic and partially hydrophobic chemical such as soap

Key skills:

- Visualize blood under a microscope
- Extract DNA from living tissue
- Diagram diffusion and osmosis

Lab Procedure:

- Collect Lab Safety/Paper Topic
- Osmosis Demonstration
- Lab #4: Cell Physiology
- Supplemental Lab: DNA Extraction

Sample lab quiz questions:

- True/False: Water cannot penetrate human skin
- The diffusion of water through a semipermeable membrane is called: _____
- Give an example of diffusion with water as a solvent
- Describe a situation in which human cells may undergo lysis
- Draw the solute concentration before and after placing a cell in a hypertonic solution