COC Biotechnology Program

Protein Extraction and Concentration Determination Post Lab

1. Using the textbook, describe four different techniques to rupture a cell.

2. Describe the roles of the following solutions:
   a. Phosphate buffer saline:

   b. Triton X-100 solution:

   c. Sodium Dodecyl Sulfate:

3. What does the process of freezing and then heating the cells in a water bath accomplish?

4. Given a protein concentration of .18mg per 1ml, and a cell count of 1.97×10^7 cells per ml, determine the protein concentration in mg protein per cell. Use dimensional analysis and show all your work.

5. Describe how the SDS solution affects the solubility of proteins. Sketch a diagram of how this interaction (SDS and protein molecules) might look in a gel in an electric field (a.k.a. gel rig).