Gel Electrophoresis Demonstration #2

Buffer solution: What is the purpose of a buffer?

Safety note: Be sure the power is turned off and the electrodes are removed from the power source before opening the chamber lids!!

Materials

gel electrophoresis chambers and power sources
distilled water
salt
buffer
pH indicator

Procedure

1. Rinse gel box thoroughly. IMPORTANT – DO NOT USE A SALT WATER MIXTURE!
2. Fill gel box with fresh water (tap water is ok) and 5g (or 1 tsp).
3. Add 1 mL of **pH indicator** to this chamber.
4. Fill a second chamber with buffer. Add **pH indicator** to this chamber.
5. Turn power on both chambers and run for about 15 minutes. Make observations and record them in your lab notebook.

Chamber filled with WATER AND SALT	Chamber filled with BUFFER

Reflection

1. What is the answer to the original research question?
2. Describe two purposes of buffer.

Gel Electrophoresis

Teacher Notes

1. Two major reasons why buffer is used in gel electrophoresis are to conduct electricity and to prevent large changes in pH in the chamber. Acidic conditions could damage the samples being processed. Students should note a change in color on one side of the chamber that has the salt water solution, while the chamber with buffer remains a consistent color throughout the entire chamber.

*2. Use **fresh** salt water in the gel box and make sure the boxes are rinsed thoroughly before beginning. If not, there could already be a pH change in the salt water which will affect the results of this experiment.*

3. It is NOT necessary to use trays in the chambers for this lab.