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The Effect of Biological and Nonbiological Material on the Reaction to a Changing pH Level This experiment was conducted to learn exactly how biological material responds to rising or dropping pH levels in comparison to how nonbiological material does. The dependent variable in this experiment was how the different materials react, and the independent variable was the type of material, biological or nonbiological. Tap water was the selected nonbiological material, and the generally known pH level for water is 7, or neutral.

Potato homogenate, liver homogenate and egg white solution was used as the biological material. A buffer solution that serves as a model of a biological material's chemical that helps it carry out homeostasis was also used in the experiment, being tested in the same manner as the other materials. This topic was tested in order to confirm a tissue's biological chemical processes, presence of buffers, and their ability to maintain its needed pH level for normal function.

For actually conducting the experiment, each material was measured out into 25 mL and put into a beaker to be measured for its pH level with pH paper. Then five drops hydrochloric acid was added to the beaker with a 0.1M dropper, and then the pH level was measured again. This process was repeated until a total of 30 drops of HCl was added to the beaker. Each material was tested in this way, and then the same was done with each material, only adding sodium hydroxide with five drops at a time as well, measuring the pH level each time in between with pH paper.

If both biological and nonbiological material are treated in the same way with hydrochloric acid and sodium hydroxide to raise or lower the pH level, then the biological material will have less of a change in its pH level, because its biological tissues have natural chemical processes that regulate the pH level. If a chemical solution that is a model of a biological buffer is treated with hydrochloric acid and sodium hydroxide to raise or lower the pH level, then it will stay generally the same pH level as its start, because a buffer's purpose is to regular the pH level of a biological material.