

Max Diaz

*The Effect of pH on Ibuprofen Solubility*

The purpose of this investigation is to find out how the pH of the stomach is dependent on how fast medicine dissolves into the bloodstream. This information would be beneficial because, a person can determine out how long it would take to relieve pain. In this experiment, four types of juices represented four different levels of pH ranging from 1.8 - 4. The juices were tested to determine the time it takes to dissolve 200 mg of ibuprofen. Water was used as a control in the experiment with a pH of 7. On average, lime juice, with a pH of about 1.8 - 2, took the longest to dissolve a 200mg tablet of ibuprofen. Grapefruit juice had an average dissolution time of 2320 seconds and pH of 3-3.3. Water, the control had an average dissolution time of 693 seconds and has a pH of 7. These findings lead to the conclusion that lime juice, pH of 1- 2, does not have the quickest dissolution time. Grapefruit juice, pH less acidic than lime juice, had the quickest average dissolution time of all juices tested. Water had the quickest average dissolution time of all liquids. Grapefruit juice and orange juice have the closet pH to water. Although, grapefruit juice was the quickest in dissolving ibuprofen, orange juice was not, as compared to water. Therefore, the results were inconclusive in determining which pH would dissolve ibuprofen the quickest.