CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
Tess E. Armstrong

Project Number
J0502

Project Title
Succor or Sucker?

Abstract

Objectives/Goals
This experiment was to determine if over-the-counter antacids were actually basic! The medicines chosen were name brand (no generics), original-strength products that listed relief of heartburn/acid indigestion as their first indication for use.

Methods/Materials
The five products tested were: Rolaids, Pepto-Bismol, Mylanta, Maalox, and Tums. All products were tested using both a digital pH meter and pH test paper. Care was taken to assure both equal volume and therapeutic dose. The tablets were broken-up, dissolved in water, stirred, and filtered. The liquids were shaken well and filtered. The resulting filtrate was pH tested.

Results
The pH testing showed following:
Rolaids: 8.58, Pepto-Bismol: 4.55, Mylanta: 7.96, Maalox: 7.82, Tums: 7.95

Conclusions/Discussion
The active ingredients were reviewed to determine the difference in acidity between Pepto-Bismol and the others. The active ingredient in Pepto-Bismol is bismuth subsalicylate which, like salicylic acid, lowers the pH. I concluded that not all over-the-counter antacids are basic. This indicates that symptoms of heartburn/acid indigestion can be relieved by a product that is an acid. I have done research to understand how and why these products work as well as the actions and effectiveness of other pharmaceutical treatment options for heartburn. Come by and see what I discovered!

Summary Statement
To determine if there is a connection between the pH of over-the-counter antacids and their effectiveness in treating heartburn.

Help Received
Mother taught me how to use pH meter.