



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

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Project Title Which Antacid Is Most Potent in Neutralizing the Acid in Lemon Juice?	
Abstract Objectives/Goals The objective of my project was to determine which antacid is most potent in neutralizing the acid in lemon juice. Methods/Materials Four brands of antacids with identical strength were tested with grape and lemon juice. The antacids tested were Roloids, Equate, Up & Up, and Gaviscon. First, ten drops of grape juice were added to each test tube. Grape juice is a natural acid-base indicator, so it changes colors depending on whether the solution it is placed in is acidic or basic. Second, ten drops of lemon juice were added to each test tube. Then, each of the four antacid was added, drop by drop, to each test tube until a color change is observed. The number of drops needed to change the solution's color (neutralize the acid) was observed and recorded. The process was repeated five times for each type of antacid. Results In all five trials, Roloids had the least number of drops that were needed to change the color of the solution with an average of 6.4 drops. Gaviscon was the second antacid with least number of drops needed with an average of 10.2 drops in all trials. Equate and Up & Up were about the same in all trials with an average of 11.2 and 11.4 drops, respectively. Conclusions/Discussion The charts, tables, graphs, and analysis of the data indicate that Roloids antacid is more effective in neutralizing the acid in lemon juice. Only an average of 6.4 drops of Roloids antacid were needed to neutralize the acid in the five trials, whereas an average of ten or more drops of the other types of antacids were needed to change the color of the solution and therefore neutralize the acid. I think this happened because of the ingredients Roloids has. It has a combination of both, magnesium hydroxide, and aluminum hydroxide. Research suggests that an antacid that has calcium carbonate and magnesium hydroxide combined are more effective than those that have only one or other active ingredients. My conclusion is that Roloids antacid is most potent in neutralizing the acid in lemon juice as supported by data of this experiment. So, if you have an upset stomach or heartburn, Roloids antacid should be the top option when looking for effective antacids.	
Summary Statement My project is about determining which antacid is more effective in neutralizing the acid in lemon juice.	
Help Received My father helped me with the graphs of the data.	