



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> <b>Marlen Miranda</b>	<b>Project Number</b> <b>J0515</b>
<b>Project Title</b> <b>What Material Can Help Neutralize the Stomach Acid (HCl)?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of the experiment is to determine which materials neutralize the stomach acid. The materials that will be used to neutralize the Hydrochloric Acid are Tums, Rolaids, Antacid CVS Brand, lemon juice, and Baking Soda. <b>Methods/Materials</b> Crush one antacid tablet using a mortar and pestle. Weigh the crushed tablet. Add exactly 100mL of 0.09 M HCl to the flask and gently swirl the flask. 3 drops of methyl orange indicator solution to the flask. Titrate the solution with your standardized NaOH until the indicator just turns yellow-green. Record the volume of NaOH solution. Repeat steps 1-6 five more times using the same brand of antacid tablet. Repeat steps 1-7 using (Tums, Rolaids, Cvs Brand Antacid, Baking Soda, and Lemon). <b>Results</b> The three antacid tablets had slightly the same results. The three antacid tablets left residues in the solution. It was a difference of 0.001 mols of HCl/ 1.0 g antacid. Lemon Juice was not applicable. Baking Soda had 0.155 mols of HCl/ 1.0 g antacid and didn't left residue. <b>Conclusions/Discussion</b> The best antacid was the Baking Soda followed by Tums, CVS Brand, and Rolaids at last the Lemon juice.	
<b>Summary Statement</b> The purpose of the experiment is to determine which materials neutralize the stomach acid.	
<b>Help Received</b> Mrs. Dickerson gave her time; Saint Augustine High School provided lab and materials; Luis Miranda Jr. helped on ideas; Mrs. McHale helped supervised	