



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> <b>Haley Washburn</b>	<b>Project Number</b> <b>S1725</b>
<b>Project Title</b> <b>What Is the Effect of Different Juices and Green Tea on the Effectiveness of Antibiotics?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of my science project was to determine if different juices and green tea would help my test antibiotics create a larger area of bacterial inhibition than the antibiotics would have alone. It is commonly believed that green tea, pomegranate juice, grapefruit juice, and cranberry juice are beneficial to your health, for this reason I wanted to see what would happen if I mixed them with Penicillin and amoxicillin.</p> <p><b>Methods/Materials</b> For my control I tested the antibiotics and juices/tea individually to determine if they created an area of inhibition around a test dot. To do this I dipped an absorbent test dot in the test liquid and placed it in a petri dish that I swabbed with bacillus subtilus bacteria. After I completed my control tests I mixed 10ml of test antibiotic and 50ml of a test juice/tea in separate prescription containers. I repeated the steps I used to test my control liquids to test my mixed liquids. Each test was completed 11 times for a more accurate result. After 48 hours and again at 96 hours I measured the areas of inhibition and documented them in my log book. I had a total of 17 different test substances.</p> <p><b>Results</b> After 48 hours of incubation all of my mixed substances had larger areas of inhibition than the control substances. After 96 hours the mixed test substances still had larger areas of inhibition than the control test substances, however the overall areas of inhibition were decreasing. The addition of the test juices as well as the green tea did affect the effectiveness of both test antibiotics by creating larger areas of inhibition than the antibiotics created alone.</p> <p><b>Conclusions/Discussion</b> Through testing I discovered that these juices/tea did help the antibiotics create a larger area of inhibition, however, through my research I discovered that while these juices have health benefits on their own, they also contribute to negative drug interactions due to different enzyme suppression in the digestive system which can lead to the build up of a drug possibly causing an overdose. I feel that further investigation is needed before drinking these juices/tea while taking antibiotics.</p>	
<b>Summary Statement</b> The objective of this project was to determine if the addition of juices or green tea to antibiotics you then increase the antibiotics ability to fight bacteria.	
<b>Help Received</b> Dr. Mary F. Paine Ph.D., provided guidance and research information, Dr. John Inouye M.D. provided antibiotics, Mr. Carl Gong provided petri dishes and bacteria, My Mom photographed my experiment.	