



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Tiana N. Takenaga</b>	<b>Project Number</b> <b>S1415</b>
<b>Project Title</b> <b>The Effect of Constant Application of Different Disinfectants on the Resistance of E. coli</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of my project was to observe the effect of two applications of different disinfectants on the resistance of E. coli.</p> <p><b>Methods/Materials</b> E. coli was plated onto ten petri dishes. Antibacterials were plated onto the dishes by means of filter paper disks. The diameters of the zones of inhibition wa observed. The antibacterials was applied to the bacterial lawns once more. The zones of inhibition were observed once more to find the difference between the two rounds.</p> <p><b>Results</b> The data shows that the bacteria became resistant to the Purell. On the disks with Purell, fifty percent of the disks had overgrowth of the bacteria. The Purell was not effective at all in these cases. The conclusion that the E. coli became resistant to the Purell can be made because of the fact that every dish had a significant amount of regrowth of the bacteria. Even though some disks did not have the total overgrowth on the disks, all zones of inhibition became smaller. In the Betadine solution, the bacteria was becoming resistant to the solution, however, there were not enough trials to conclude this information. Most of the zones of inhibition were reduced. After more trials, the Betadine solution would become ineffective as an antibiotic fighting against this strain of E.coli. The Hibiclens solution was the most effective. It withstood the R plasmid in the E. coli. In most cases, the zone of inhibition stayed the same. This means that this solution would be the most effective for the longest amount of time.</p> <p><b>Conclusions/Discussion</b> Based on my observations, I can infer that the Hibiclens remained effective against the E. coli, the Betadine solution would become more resistant if given more rounds, and the Purell became ineffective against the E. coli bacteria.</p>	
<b>Summary Statement</b> This project compares the effectiveness of different antibiotics on the resistance in E. coli bacteria.	
<b>Help Received</b> Mother helped paste papers on board; Dr. Oniell let me use her classrom to conduct my experiment.	