



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> <b>Bianca L. Nurnberger</b>	<b>Project Number</b> <b>J1613</b>
<b>Project Title</b> <b>Effects of Colloidal Silver on Bacteria</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> This project is directed to find natural alternatives for prescription medication. Colloidal silver is a suspension of submicroscopic metallic silver particles in a colloidal base, it's known to naturally kill harmful bacteria while strengthening the helpful kinds, and bacteria cannot become immune to it because it attacks them in different ways.</p> <p><b>Methods/Materials</b> This project was tested by applying 0, 10, and 40 drops of 15-PPM colloidal silver water on shower door bacteria and pepper mold with 2 of each sample for accuracy and reproducibility. According to the measure of drops on the colony, the growth time will be affected. Over 9 days, the mold and bacteria colonies slowed down growth while the controlled sample with less silver continued to expand. The mold colonies with 40 drops grew on average coverage up to 65%, 10 was 85%, and the controlled was 94%. As for the shower colonies 40 drops grew to 85%, 10 to 96%, and controlled was 157% because the colony grew, it grew taller. As predicted, the samples with more drops halted growth.</p> <p><b>Results</b> These results were somewhat what expected, the colonies with more drops stopped growing while the ones with less expanded. If colloidal silver treats all infections the way it treated this experiment, drugs may be replaced by something natural. Adding more drops to get more dramatic results could change this project.</p> <p><b>Conclusions/Discussion</b> All in all this test found that colloidal silver does treat bacteria according to the amount of silver applied and the silver saturation level. This project can later be studied with more samples and different substances. As stated before, more drops added, the more dramatic results will be found.</p>	
<b>Summary Statement</b> This project is to test the efficacy of home made colloidal silver solution in retarding the growth of established bacterial colonies.	
<b>Help Received</b> Dieter Nurnberger (father) supplied materials and helped carry out the project ; Mrs. Dawn Jacobson walked me through the process of making a science fair project.	