



California Science Center  
**CALIFORNIA STATE SCIENCE FAIR**  
**2001 PROJECT SUMMARY**

<b>Your Name</b> (List all student names if multiple authors.) <b>Sharareh Shabafrooz</b>	<b>Science Fair Use Only</b>  <h1 style="margin: 0;">S1219</h1>
<b>Project Title</b> (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) <b>Silver Colloids: The New Antibacterial</b>	<b>Division</b> _ Junior (6-8) <u>X</u> Senior (9-12)
<b>Preferred Category</b> (See page 5 for descriptions.) <b>12 - Microbiology</b>	
<b>Abstract</b> (Include Objective, Methods, Results, Conclusion. See samples on page 14.) Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.	
<p>This study on the affects of silver colloids began when I became across an article that stated silver could be used as a disinfectant, as well as an antibacterial. When I went online to research more information on colloidal silver, half the article that came up claimed that silver colloids could be used to treat hundreds of diseases, while the other half of the articles stated that silver was not an affective antibacterial. The 1996 Journal of Toxicology stated that there was a lack of established effectiveness of silver colloids. However, the most frequent point I read was the fact that no clinical trials had yet been conducted to prove if colloidal silver was affective, or ineffective. (The FDA Advisory Expert Panel stated that there was a lack of human efficacy data to determine if colloidal silver was an effective antibacterial.)</p> <p>In began conducting this experiment by growing Escherichia coli on nutrient agar plates. Once there was a nice lawn of E-coli growing, I prepared silver solution at 100, 75, and 25 parts per million, (as well as a control.) I took filter paper and dipped it into a beaker with the specified parts per million of silver colloid solution. I then placed three filter paper holes onto each plate and labeled the petri dishes by the parts per million of silver solution. Once I finished doing these to all 15 plates, I placed the petri dishes in the incubator overnight, and measure the diameter of the inhibition of growth.</p> <p>After I completed measuring the inhibition of growth, I noticed that the greatest inhibition occurred on the plates with the greater parts per million of silver. The plate with 100ppm of silver showed the greatest inhibition of growth. The control, which lacked silver, lacked any inhibition of growth.</p> <p>The data I collected from conducting this experiment suggests that silver colloids can be used as an antibacterial against Escherichia coli.</p>	
<b>Summary Statement</b> (In one sentence, state what your project is about.) My project shows the effects of silver colloids on E-coli.	
<b>Help Received in Doing Project</b> (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4. Mrs. Avants taught me how to prepare agar plates, and how to work with E-coli; Used lab equipment at Clovis West under Mrs. Avants supervision.	