



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Kirsten A. Jilot</b>	<b>Project Number</b> <b>J1711</b>
<b>Project Title</b> <b>EDTA and Lysozymes: Weakening the Cell Walls of Gram Positive and Negative Bacteria</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of my experiment was to determine the effectiveness of antibiotics, lysozymes and EDTA (Ethylenediaminetetraacetic Acid) on weakening the antibiotic resistance of the cell wall in gram positive and negative bacteria.</p> <p><b>Methods/Materials</b> Tested gram positive bacteria (<i>Bacillus Cereus</i>) and gram negative bacteria (<i>Escherichia Coli</i>) on various combinations of lysozymes, EDTA (Ethylenediaminetetraacetic Acid) and antibiotics (Streptomycin and Ampicillin) using the kirby bauer disk diffusion method.</p> <p><b>Results</b> The combination of lysozymes, EDTA and antibiotics was the most effective at killing bacteria on both gram positive and negative bacteria. The combination of lysozymes and antibiotics came second, then just antibiotics. EDTA and lysozymes, just lysozymes and control tests did not kill any bacteria.</p> <p><b>Conclusions/Discussion</b> Without antibiotics, the lysozymes alone and the combination of lysozymes and EDTA did not kill any bacteria. The results for those tests were 0 mm showing no clearing of bacteria around the filter paper containing lysozymes and/or EDTA. However, the results indicated that lysozymes and EDTA did help eliminate bacteria with a larger diameter of clearing around the substance discs when EDTA and lysozymes were combined with antibiotics than antibiotics alone.</p>	
<b>Summary Statement</b> The purpose of my experiment was to determine the effectiveness of antibiotics, lysozymes and EDTA (Ethylenediaminetetraacetic Acid) on weakening the antibiotic resistance of the cell wall in gram positive and negative bacteria.	
<b>Help Received</b> None. I designed and conducted the experiment by myself.	