



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

<b>Name(s)</b> Lacey M. Lindsley	<b>Project Number</b> <b>J1724</b>
<b>Project Title</b> <b>Which Antibiotic Most Effectively Reduces the Amount of Bacteria?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of this experiment is to determine which antibiotic most effectively reduces the growth of bacteria. The hypothesis was that ciprofloxacin would reduce bacteria growth most effectively than amoxicillin-clavulanic acid, tetracycline, or vancomycin.</p> <p><b>Methods/Materials</b> To conduct this experiment, take antibiotic paper discs of amoxicillin-clavulanic acid, ciprofloxacin, tetracycline, and vancomycin and place them into agar plates inoculated with <i>Bacillus cereus</i>. Over a period of 12 hours, 24 hours, and 36 hours, measure and record the zone of inhibition around the antibiotic discs from all seven trials.</p> <p><b>Results</b> The results of the experiment were the ciprofloxacin was the most effective on average to the growth of the bacteria while tetracycline had little effect, vancomycin was less effective, and amoxicillin-clavulanic acid was the least effective. The results indicate that the hypothesis should be accepted as the ciprofloxacin treated dishes showed more interference with the bacteria growth, leaving the bacterium unable to form new proteins vital to its growth with the largest zone of inhibition.</p> <p><b>Conclusions/Discussion</b> Because of the results of this experiment, additional studies should be done to see if ciprofloxacin would still work most effectively if there were different types of bacteria used, and to treat bacteria with different antibiotics, as well as different substances like wine, cider, vinegar, or seaweed. Findings from this experiment could prove to be useful to those in the medical field, microbiologists, and other areas of work related to bacterial resistance and those having contact with bacteria.</p>	
<b>Summary Statement</b> To determine which antibiotic most effectively reduces the growth rate of <i>Bacillus cereus</i> .	
<b>Help Received</b> Qualified scientist inoculated the bacteria and disposed of the bacteria properly.	