



CALIFORNIA STATE SCIENCE FAIR 2003 PROJECT SUMMARY

Name(s) Wendy M. Eseau	Project Number S1308
Project Title Which Antibiotic Is Most Effective Against Escherichia coli?	
Objectives/Goals My objective is to study the effects of different antibiotics on the bacteria Escherichia coli, and to determine which antibiotic is most effective against inhibiting its growth.	Abstract
Methods/Materials Materials: 1. 1 slant of E.coli bacteria (quired with permission from the microbiology lab at Cuesta College) 2. 4 deeps of tryptic soy agar 3. 4 sterile petri dishes 4. innoculate loop 5. Bunsen burner 6. incubator 7. antibiotic disks. 8. metric measuring tape 9. digital camera 10. disk for digital camera 11. use of microbiology lab at Cuesta College.	
4 sterile petri dishes were innoculated with E.coli. Antibiotic disks were then added to two of the petri dishes. One was left without antibiotics as a control. The other one was a streak plate to ensure a sterile culture. All petri dishes were incubated at 37 degrees celcius for 48 hours. The petri dishes were then removed from teh incubator and growth or lack of growth were observed and measured.	
Results Of the antibiotics tested, the inhibition zones (if any), were measured. Ampicillin (10mm) Tetracycline (30mm) Tobramycine (20mm) Sulfisoxazole (45mm) Genamycine (25mm) Penicillin (0mm) Kanomyocin (26mm) Streptomycin (22mm) Chloramphenicol (40mm) Bacitracin (0mm) Crythromyasin (18mm) The areas of inhibition around the antibiotic discs are in the () with the measurements signifying the inhibition of bacteria growth around the antibiotic discs. The larger the inhibition zones the more effective the antibiotic is at inhibiting the growth of the bacteria.	
Conclusions/Discussion Sulfisoxazole is the most effective against E.coli bacteria, however Sulfisoxazole is a sulfa drug and therefore synthetic and not technically a true antibiotic. Chloramphenical was a close second, however it too is a synthetic drug. Tetracycline was the most effective true antibiotic tested against E.coli. In science, however, nothing is ever proven. There is always the possibility that results happened by chance. My hypotheses, however, was supported by this particular experiment.	
Summary Statement My project is about the effectiveness of different antibiotics on the bacteria Escherichia coli.	
Help Received Mother helped type report; Used lab and equipment at Cuesta College under the supervision of Mrs Cheatham;Glen Lubak let me borrow the digital camera and printer; Dan Foss helped me learn how to make a graph on the computer;Mr Bartel helped me with the grand idea .	