



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Nicole A. Sousa	Project Number S1322
Project Title Commensal E. coli Mutants, Biotypes, and You	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this project is to look at the normal human flora of the intestine for multiple E. coli strains and mutant strains in order to warn doctors of mutant strains residing within the human intestine, indicating a growing trend of antibiotic resistance.</p> <p>My hypothesis is that if genetic variation and mutations are the cause of different strains, then multiple strains of E. coli and mutant strains will be found, along with new strains over a period of time, within my intestine.</p> <p>Methods/Materials In conducting this experiment, a variety of techniques associated with isolating certain microscopic organisms were used. Also used was a variety of tests to confirm that the isolated organism was that of E. coli. This included a TSI, MRVP, Simmons Citrate, MUG/Indole Test, Oxidase test, Urease test, MIO, and an api20E test. All samples were proven to be E. coli</p> <p>Results In conducting this experiment, three different strains of E. coli were found residing within my intestine, and also isolated were two samples that are a mutant strain of E. coli resistant to four different antibiotics. Of the three strains found, two were found in the first trial of E. coli biotyping, and a third one was identified in the second trial of E. coli biotyping.</p> <p>Conclusions/Discussion In conclusion, these results support my hypothesis, and are a warning to doctors that when a patient is infected with an E. coli-related disease, an antibiogram should be done to ensure that the dispensed antibiotic will be effective against eliminating the infection, ultimately diminishing the chance of complications.</p>	
Summary Statement The purpose of this project is to look at the normal human flora of the intestine for multiple E. coli strains and mutant strains in order to warn doctors of mutant strains residing within the human intestine.	
Help Received Used lab equipment at San Jose State University; I was supervised in lab by undergraduates Sherry Li and Cheryl D'Souza; Dr. Murray and Darcy Levee of San Jose State University and Belinda Schmah of Schmah Science Workshop advised me on certain techniques and issues	