



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Erin L. Lowry	Project Number J1319
Project Title A Study of the Effects of Green Tea on Oral Bacteria	
Objectives/Goals My project was to determine if green tea inhibits the growth of oral bacteria.	
Abstract Methods/Materials Two procedures involving five test subjects were performed to determine if green tea inhibits the growth of oral bacteria. Each procedure consisted of three trials for each test subject. For procedure #1, saliva was collected from each test subject and then mixed in tubes containing melted nutrient agar. Each tube was labeled with the test subject's initials and trial number. The agar was poured into labeled petri dishes and allowed to solidify. Green test disks were dipped in green tea extracts and placed on the saliva inoculated nutrient agar. For the control, blue test disks were dipped in distilled water and placed on the agar away from the green tea test disks. The petri dishes were placed in an incubator and checked for growth and inhibition of growth around the test disks at 24, 48, and 72 hours. For procedure #2, 5 petri dishes containing plain nutrient agar and 5 petri dishes containing nutrient agar mixed with green tea were prepared for each test subject. Sterile tongue depressors were placed in the test subject's mouths and then placed gently on each of the fields of nutrient agar. Inhibition of growth was then compared between the dishes with plain agar and the dishes containing nutrient agar mixed with green tea. Each petri dish was given a score of 0-5 based on the number of bacterial colonies formed on the agar in the area where the tongue depressor was placed. A score of 0 meant no colonies were formed, a score of 1 meant 1-5 colonies, a score of 2 meant 6-10 colonies, a score of 3 meant 11-15 colonies, a score of 4 meant 16-20 colonies, and a score of 5 meant too many colonies to count.	
Results My results for procedure #1 were that green tea did not inhibit the growth of oral bacteria, but in some cases increased the growth of oral bacteria. In procedure #2, green tea did inhibit the growth of oral bacteria. The agar without tea had more bacterial growth in the areas inoculated with saliva than the agar with tea.	
Conclusions/Discussion I am unable to determine if green tea inhibits the growth of oral bacteria. The results of my two procedures were inconsistent. The first procedure failed to show inhibition of growth of oral bacteria with green tea while the second procedure did show inhibition of growth of oral bacteria, therefore my results are inconclusive.	
Summary Statement My project was a study of the effects of green tea on oral bacteria.	
Help Received My mother helped type the reports and dispose of materials. My father helped build the incubator and the board.	