



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Oanh K. Nguyen	Project Number J1321
Project Title Varying Concentrations of Ginkgolic Acid	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this project is to see how various concentration of ginkgolic acid affect the growth rate of Mycobacterium smegmatis. My hypothesis is that ginkgolic acid will have an inhibiting affect on the growth rate of the bacteria and that the stronger the concentration the greater the overall effect.</p> <p>Methods/Materials I used the seed coat of the Ginkgo biloba seeds to make the ginkgolic acid concentration, along with 1800 milliliters of distilled water for purpose of liquefying. From the initial concentration, I created 10%, 30%, 50%, 70%, and 90% solutions. I pour the concentrations and the control, which is just nutrient agar, into 90 plates, 15 plates per concentration. I placed the colony of Mycobacterium smegmatis on each of the 90 plates. I let the plates establish the growth bacteria and measured their subsequential growth. I record my data in a series of 7 days for two weeks.</p> <p>Results Average growth rate from the control plates was 4.68mm after one week and 1.87mm after two weeks. Average growth rate from 10% ginkgolic acid was 1.32mm after one week and 0.48mm after two weeks. Average growth rate from 30% ginkgolic acid was 0.48mm after one week and 0.13mm after two weeks. Average growth rate from 50% ginkgolic acid was 0.31mm after one week and 0.13mm after two weeks. Average growth rate from 70% ginkgolic acid was 0.21mm after one week and 0.08mm after two weeks. Average growth rate from 90% ginkgolic acid was 0.13mm after one week and 0.06mm after two weeks.</p> <p>Conclusions/Discussion The results of the experiment had proven that ginkgolic acid is a Mycobacterium smegmatis inhibitor. Since this strand of bacteria is very similar to the Mycobacterium tuberculosis, same genus, further experimentation would be able to prove if the ginkgolic acid would have the same effect on human tuberculosis.</p>	
Summary Statement Varying concentrations of ginkgolic acid affect upon Mycobacterium smegmatis.	
Help Received The test bacteria was established from a larger cultivation of the bacteria which came from Dr. Wright from Fresno State.	