



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Lindsey N. Drake	Project Number J1306
Project Title Which Acne Medications Are Most Effective against Propionibacterium acnes?	
Abstract Objectives/Goals The objective is to determine which acne medications are the most effective in inhibiting the growth of Propionibacterium acnes, over-the-counter or prescription. Methods/Materials The active ingredients of two prescription antibiotics, three over the counter acne medications and two plant extracts were tested in vitro in duplicate two separate times against P. acnes. The bacterium was incubated under anaerobic conditions in the presence of disks containing the study medications and a control disk. The diameter of each inhibition zone was measured to the nearest millimeter and recorded. Results Tetracycline was the most effective, with an average inhibition zone of 46.25 mm, followed by Clindamycin with a 45.5 mm inhibition zone. Surprisingly, Oregano oil had the third largest inhibition zone of 31.25 mm. Benzoyl peroxide 10%, Benzoyl peroxide 2.5%, the equal mix of Tea Tree oil and Oregano oil followed with inhibition zones of 24.75 mm, 23 mm, and 19.67 mm zones, respectfully. Lastly, with inhibition zones of 0 mm were the control, Salicylic acid, and Tea Tree oil. Conclusions/Discussion The prescription acne medications are the most effective in vitro against Propionibacterium acnes.	
Summary Statement My project compares the in vitro effectiveness of prescription verses over- the -counter acne medication against Propionibacterium acnes.	
Help Received Worked under the supervision of Dr. Dale A. Schwab and used incubator at Quest Diagnostics,Nichols Institute.	