



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Alex J. Freeman	Project Number J1409
Project Title Plaque Attack: Taking a Bite Out of K-9 Dental Disease	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals In this experiment, two different commercially-manufactured dog treats, each claiming to reduce tooth tartar, were tested to see which were more effective in cleaning dogs' teeth. The two dog treats used were Greenies Smart Treats and Nutro Tartar Control Biscuits.</p> <p>Methods/Materials Fifty-one dogs were given a 28-day supply of treats. Twenty-five dogs were given Greenies Smart Treats. Twenty-six dogs were given Nutro Tartar Control Biscuits. Evaluations of each dog's teeth was performed twice by Dr. Benita Keiss, DVM, at Pacific Beach Veterinary Clinic, San Diego, CA; once before the experiment began, and soon after each dog had completed the 28-day study. Each time, the dogs were rated on a scale of 1-6. A rating of (1) indicated that the dog had very little tartar. A rating of (6) indicated that a large amount of tartar was seen.</p> <p>Results At the beginning of the experiment, the average percent of plaque on all of the dogs that were given Nutro Tartar Control Biscuits was 57.789%. At the end of the experiment, the average percent of plaque on the dogs that were given Nutro Tartar Control Biscuits was 55.094%. Nutro Tartar Control Biscuits reduced plaque on dogs teeth by 2.695%. At the beginning of the experiment, the average percent of plaque on the dogs given Greenies was 52.989%. At the end of the experiment, the average percent of plaque on the dogs given Greenies was 40.786%. Greenies reduced plaque on the dogs' teeth by 12.203%.</p> <p>Conclusions/Discussion Nutro Tartar Control Biscuits reduced plaque on dogs teeth by 2.695%. Greenies reduced plaque on the dogs' teeth by 12.203%. This demonstrated that in the experiment, Greenies cleaned dogs' teeth better than Nutro Tartar Control Biscuits by 9.508%.</p>	
Summary Statement This project demonstrated how two popular brands of dog treats reduced plaque on dogs' teeth.	
Help Received Dr. Benita Keiss, D.V.M., for examining the dogs' teeth; Mother, for helping me organize data; Judy Roetheli, Greenies Co., and Christy Cooper, Nutro Co., for donating the supply of Greenies and Nutro Tartar Control Biscuits; the dog owners who participated in my experiment.	