



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

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Project Title Expression of Genes Associated with Orthodontic Tooth Movement and Root Resorption	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Objective: Although cDNA microarrays are a powerful tool of analysis, false positives signal are frequently encountered due to intrinsic problems with the methodology. The objective of this study is to confirm the changes in gene expression obtained from the microarrays by using real-time PCR.</p> <p>Methods/Materials Method: RNA obtained from molars and surrounding tissues of 0 day (control) and 5 days (experimental) rats subjected to orthodontic forces resulting in tooth movement (low force) and tooth movement with root resorption (high force). RNA was converted to cDNA using Reverse Transcription and used for real time PCR analysis using primers for some of the genes identified using the microarrays.</p> <p>Conclusions/Discussion Conclusions: There was a strong correlation between the data obtained from the microarrays and the data obtained from the real time PCR. We have identified some genes possibly associated with the resorption. However, a direct correlation between root resorption and the genes identified needs to be established.</p>	
Summary Statement The identification of genes associated with root resorption formed by orthodontic tooth movement.	
Help Received Dr. Reyna my mentor taught me the lab techniques and supervised my work in the lab and my PI, Dr. Zeichner-David helped me with the concepts, experiment design, and interpretation.	