



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> <b>Lianne R. Sturgeon</b>	<b>Project Number</b>  31010
<b>Project Title</b> <b>Plaque's Preference: How Do Sucrose, Honey, and Splenda Affect the Growth Rate of Streptococcus mutans?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of my experiment was to determine which commonly available food sweetener, table sugar (sucrose), Splenda (Sucralose), or honey, was least likely to promote the growth of streptococcus mutans. <b>Methods/Materials</b> Streptococcus mutans was inoculated onto plates of Trypticase Soy Agar (TSA) media with either 2% honey, 2% sucrose, or 2% sucralose. Plain plates of TSA were inoculated as a control. Plates were incubated at body temperature for 152 hours. The diameter of each of the colonies was measure to determine the amount of growth in each environment. <b>Results</b> Sucrose grew the biggest colonies of the sweeteners and honey the smallest colonies. The control grew the biggest colonies. <b>Conclusions/Discussion</b> Honey was been shown to have antibacterial properties which may have been the reason for the smaller colonies. Sucrose is a highly refined sugar which bacteria can use efficiently. Sucralose, when packaged as Splenda, has maltodextrin and dextrose added to it. The bacteria may not have used the sucralose, but grew off the added sugars instead. it is not clear why the control grew the biggest colonies unless adding sugar to the medium threw off the balance of nutrients to water.	
<b>Summary Statement</b> I wanted to see which commonly available food sweetener least promoted the growth of plaque.	
<b>Help Received</b> Used lab equipment at UCSB under the supervision of Dr. Low's technician Bruce Braaten.	