



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Filipp Kozachuk	Project Number J0413
Project Title The Effect of Temperature on Reaction Rates of Amylase and Starch	
Abstract Objectives/Goals The objective of this experiment was to gain a greater understanding of how amylase breaks down starch. I wanted to learn how our body uses saliva and pancreatic juice to break down food. I also wanted to see how temperature affects the reaction rates of amylase and starch. Methods/Materials Testubes were filled with starch and amylase. Once the iodine was inserted, I started a timer for one minute. Once at one minute, I put in iodine to stop reaction. Then I diluted with water and placed in Spectrophotometer and took reading. Each trial was brought to its initial temperature before testing of 1,5,22,37,65, and 100 °C. Results The reaction rates of amylase and starch increased as the temperature increased. The absorbance levels of the starch decreased as the temperature increased. However, after the 65-degree trial, the reaction rates started to decrease and the absorbance levels increased. This was due to the amylase denaturing and the fact that the iodine couldn't bond with the starch at such a high temperature. Conclusions/Discussion My conclusion is that the hotter the temperature of the amylase-starch solution, the faster it breaks down. It is also that at hotter temperatures, the body breaks down starch (food) faster.	
Summary Statement Testing how temperature affects the reaction rates of amylase with starch	
Help Received Used lab equipment at UCSB under the supervision of my mentor, Sean Bignami	