



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Priyanka S. Adapa	Project Number S0401
Project Title Turn Up The Heat! Does Temperature Affect Peroxidase Catalysis?	
Abstract Objectives/Goals The purpose of my project was to see whether the temperature of a substance affected the rate at which catalysis with the enzyme peroxidase occurred. Methods/Materials I used 11 pieces of meat, all of them differing in temperature by 10 degrees Celsius starting at 0 degrees Celsius and going up to 100 degrees. I then put 4 drops of the enzyme peroxidase on the meat. Once on the meat, the hydrogen peroxide reacted with another enzyme already in the meat, catalase, to form the pure form of peroxidase. I then observed the affects of the chemical reaction (bubbling and foaming on the meat's surface). Results My data showed that the higher the temperature of the meat, the faster it took for the reaction to occur, until it completely dropped off at 80 degrees and the reaction did not occur. The amount of foaming also increased along with the temperature but once again, it also dropped off at 80 degrees, producing nothing but smoke when I put peroxidase on the meat. Conclusions/Discussion My results and data show that my hypothesis is correct since the amount of heat did affect the rate at which the enzyme was able to catalyze a chemical reaction. Once the temperature became 80 degrees, the heat was to intense for the enzyme to work with. The heat broke up the ions in the enzyme, allowing no reaction to occur.	
Summary Statement My project looks at the affects of temperature (as one factor) on the enzyme peroxidase's ability to catalyze chemical reactions.	
Help Received I had no help on my project.	