CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
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Project Number
S0406

Project Title
The Effect of Temperature on the Enzyme Peroxidase

Abstract

Objectives/Goals
I tested the effects of temperature on the enzyme peroxidase.

Methods/Materials
In the presence of hydrogen peroxide, peroxidase reacts to produce visible gas bubbles. I used prepared slices of potato, with uniform size and shape, because they are a peroxidase source. The potatoes were heated/cooled to temperatures that ranged from one to one-hundred degrees Celsius. I used a pipette to apply 1 mL of hydrogen peroxide to the surface of the potato. Then I measured the area of peroxidase that reacted with the potato.

Results
I found that the amount of foam increased relative to the temperature, until it reached 62? C, at which point it dropped off to 0%.

Conclusions/Discussion
As the temperature increased, so did the amount of foam. The kenetic energy of the enzyme increased, enhancing the interation with the substrate, causing a larger reaction. However, when the enzyme reached 62? C., it became denatured and useless.

Summary Statement
I tested the effects of temperature on the enzyme peroxidase.

Help Received
I recieved no help on my project.