

Experiment 2.3: The Effect of Temperature and pH on Proteins

Data:

The potato slice that had not been heated or soaked in vinegar bubbled when hydrogen peroxide was added to it.

The potato slice that had been soaked in vinegar bubbled a little when hydrogen peroxide was added to it, but not as much as the first slice.

The potato slice that had been heated did not bubble at all when hydrogen peroxide was added to it.

Summary:

In this experiment, I cut three small slices of potato. I put one of them in a small glass. I put the second slice into a mug and added vinegar, allowing it to soak in the vinegar while I put the third slice in another mug and added water to it. I then put the mug with the water and third slice into the microwave and cooked it for two minutes.

I then used a fork to pull the second and third slice out of their mugs, and I placed them each in a separate small glass. I then added hydrogen peroxide to each of the three small glasses that held a potato slice and observed what happened.

Conclusion:

Potatoes contain a protein that breaks down hydrogen peroxide, which is why the first slice bubbled. The second slice bubbled a bit, but not much, because the low pH of the vinegar destroyed most of the protein in that potato slice. The third one didn't bubble at all because the high temperature destroyed all of the protein in that slice.