Enzyme Lab

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Data

Procedure A

Time (s)	0	15	30	45	60	75	90	105	120
H_2O_2/H_2O	24.2	21.6	20.5	20.4	20.3	20.3	20.1	20.1	20.1
H_2O_2/lj	23.5	29.1	29.9	29.3	29	29	28.8	28.2	28.2

Table 1: Table of Measurements over Time for Procedure A and Procedure B

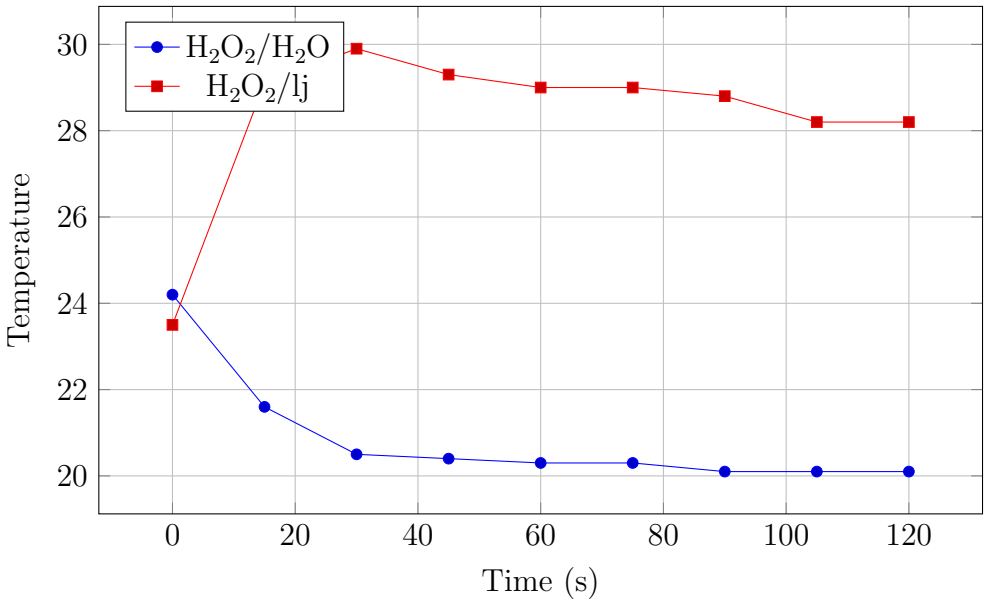

Figure 1: Graph of Measurements over Time for Procedure A and Procedure B

Time (s)	0	15	30	45	60	75	90	105	120
H_2O_2/boiled lj	22	20.5	20.1	20.1	20	20.2	20.2	20.1	20.2
H_2O_2/acid lj	22	21.5	21.5	21	21	21	21.1	21	20.9
H_2O_2/base lj	22	21.2	21.2	21.3	21.2	21.5	21.6	21.8	21.9
H_2O_2/salt lj	23	23.2	24.5	26.9	28.9	31	31.5	31.9	31.7
Boiled H_2O_2/lj	23	31	38	41	41	41	39	38	37.5

Table 2: Table of Measurements over Time for Procedure B

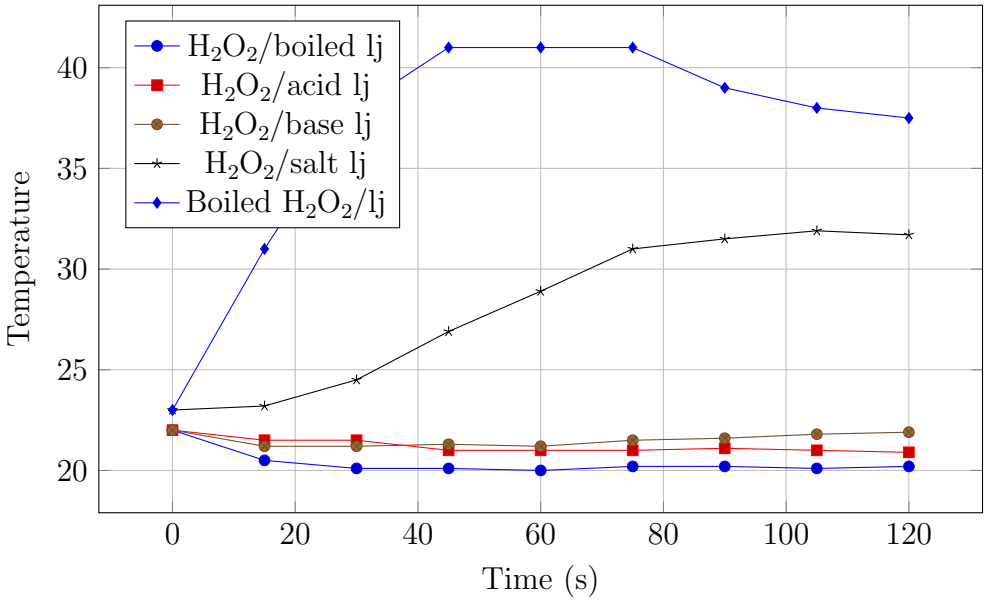

Figure 2: Graph of Measurements over Time for Procedure B

Procedure B

Procedure C

Data Analysis

Question 2

(a) The test tube with water and H_2O_2 saw a slight decrease in Temperature because the water was stored in a freezer. The test tube with serves as a control for the experiment compared to when we later added the liver juice, confirming that the temperature increase we saw was due to the liver juice reacting with the H_2O_2.

(b) We could tell a reaction was occuring in test tube B because the temperature increased.

(c) Before we added the enzyme, the reaction was occuring at a very slow rate. This is because the H_2O_2 was decomposing on its own, but at a very slow rate. When we added

Time (s)	0	15	30	45	60	75	90	105	120
1.5% H_2O_2	22	26.1	26.9	28.9	26.5	26.2	26.2	26.1	26
3% H_2O_2	23	29.1	30	29.9	29.1	29	28.9	28.5	28.2
6% H_2O_2	23	34	37	36.5	36	35.1	34.9	34.1	33.9
10% H_2O_2	23	38	43	42	41	40	39	38	37.5

Table 3: Table of Measurements over Time for Procedure C

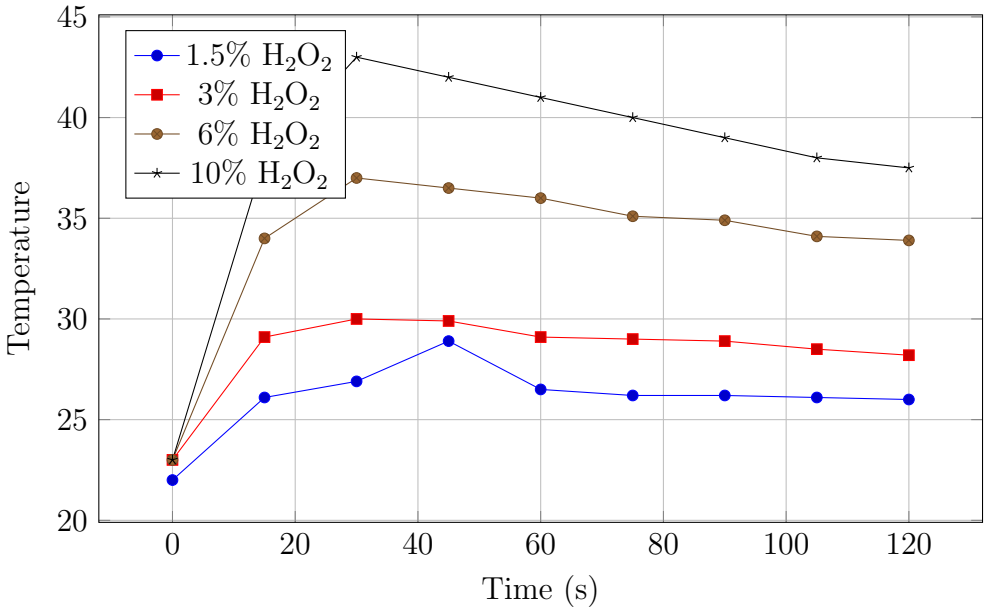

Figure 3: Graph of Measurements over Time for Procedure C

the enzyme, the reaction rate increased significantly because the enzyme was able to catalyze the decomposition of H_2O_2 into water and oxygen gas.

(d) asdf

(e) Induced fit.

The boiled H2O2 reacted faster because the water molecules are removed, thus increasing the concentration of H2O2.

The R groups sticking out of the catalayse are polar, which ...

The products don't bind very well with the enzymes. On the other hand, H2O2, specifically, it transitional state, binds best with the enzymes. However, they are unstable, which means they eventually break down.

The products aren't very harmful.

The 15 percent salt solution was not enough to denature the enzymes.