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Lab 3

10/31/2023

Title: Properties of Enzyme Action

Purpose: To see how enzymes are affected by certain chemical reactions. Learn how enzymes which are proteins are subjected to denaturing.

Procedures: 1. Add just enough litmus powder to a container of dairy cream to produce a medium blue color. Pour 3 ml of the litmus cream into 4 separate test tubes. Into two additional test tubes pour 3 ml of 2% pancreatin. Preincubate the litmus cream and the pancreatin separately in a 37°C water bath for 5 minutes. Then prepare four test tubes as follows:

Tube #1: 3 ml cream + 3 ml pancreatin

Tube #2: 3 ml cream + 3 ml distilled water

Tube #3: 3 ml cream + 3 ml pancreatin + pinch of bile salts

Tube #4: 3 ml cream + 3 ml distilled water + pinch bile salts

2. Gently shake each tube for 30 seconds to mix in the bile salts. Incubate all four tubes in a 37 degrees C water bath for 1 hour, checking every minute for the first 5 minutes or until the first tube changes color, then every 15 minutes for the rest of the hour. Record the time and number of the tube. Continue checking for the remainder of the hour.

3. Remove the tubes from the water bath. Test the pH of each tube using pH paper and note the odor and color of each tube.

NOTE: Blue litmus will turn pink in an acid environment.

4. Summarize the results in the following table:

Tube	Color.	pH	Odor	Time to change color
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#1

#2

#3

#4

5. Explain how the digestion of fat affects the pH of the solution and how bile affects the rate of digestion.

Results:

30 MIN	PH	COLOR	ODOR
TUBE 1	6	LIGHT PURPLE	CHEESY
TUBE 2	7	DARK PURPLE	LESS CHEESY
TUBE 3	5	DARKER PURPLE	REALLY CHEESY
TUBE 4	6	EMULSIFYING DARKER/PURPLE BOTTOM	LITTLE CHEESY

Discussion: While I did not attend this lab I did watch a video I found on YouTube

https://youtu.be/1rRzufWI2D8?si=I0NzJm_pZX4-tgW0. It was interesting to see the different reactions between the cream and different items added to each tube. Also the way everything interacted with temperature being a factor changed how the fat reacted.

Conclusion: In the video I watched, the person used cream, distilled water, pancreatin, and bile salts to show how fat reacted to different temperatures and solutions. At 0 degrees pancreatin did not show much change as it did when exposed to 37 degrees.