Digestive system lab report essay sample

Food & Diet

The digestive system is made up of the gastrointestinal (GI) tract—also called the digestive tract—and the liver, pancreas, and gallbladder. The GI tract is a series of hollow organs, joined in a long, twisting tube from the mouth to the anus. The hollow organs that make up the GI tract are the mouth, esophagus, stomach, small intestine, large intestine— which includes the rectum—and anus. “ food enters the mouth and passes to the anus through the hollow organs of the GI tract. The liver, pancreas, and gallbladder are the solid organs of the digestive system. The digestive system helps the body digest food. The purpose of this La is to learn the structure and function of the digestive system.

In this lab, for part 1 we had to test digestion of lipids and effects on temperature and examine our initial and final observations on each test tube that was in labeled room temperature and 37°C. For part 2, we had to test digestion of starch and effects of temperature and examine our initial observation on the appearance of each test tube that we labeled which included, 5°C, 37°C, and room temperature. For part 3, we had to test digestion of proteins and effect of pH and write down our observations on each test tube and test their pH levels.

For each tube, we had to add 1ml of distilled water, 3ml of 1% pepsin and 1 ml of 1% hydrochloric acid. For tube number 2 we had to add another 1 ml of distilled water and for test tube 3 we had to add 1 ml of 0. 1% sodium hydroxide and place a cube of boiled egg in each test tube. Our initial and final observations stayed the same, the pH level we tested were 1 for test tube 1 and 4 for test tubes number 1 and 3.

Materials

Materials needed per group:

8 Test tubes with screwcaps

5 Pipets

6 pH test strips

pH indicator chart

Hard-boiled egg

Shared Materials:

iodine solution

Olive oil

Hydrochloric acid, 1%

Sodium hydroxide, 0. 1%

Starch solution, 1%

Pancreatin solution, 2%

Phenolphthalein solution

Incubator

Ice bath

Pepsin solution, 1%

Test tube rack

Procedure:

A. Digestion of Lipids and Effects of Temperature

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1. Labeled one test tube “ Room Temperature”; labeled a second test tube “ 37°C”.

2. Added 5 ml of distilled water to each test tube.

3. Added two drops of phenolphthalein solution to each test tube.

4. Added 20 drops of 0. 1% sodium hydroxide solution to each test tube. The color of the solution in both test tubes should’ve turned light pink.

5. Added 5 ml of 2% pancreatin solution to each test tube. Capped both tubes and mixed.

6. Removed the caps from both tubes, and added 1 ml olive oil to each test tube, and loosely re-capped both tubes. Recorded the color of the solution and the observations of each tube in Table 1 in the Analysis section of the lab.

7. Placed the “ 37°C” test tube in a 37°C incubator. Left the “ Room Temperature” test tube at room temperature.

8. After an hour and a half observed the two test tubes. Recorded the observations in Table 1 in the Analysis section.

B. Digestion of Starch and Effects of Temperature

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1. Labeled one test tube “ 37°C 5°C”, another “ Room Temperature”, and the third at“ 37°C”.

2. Added 5 ml of 1% starch solution to each test tube.

3. Added 1 ml of dilute iodine to each test tube.

4. Added 5 ml of the pancreatin solution to each test tube. Capped and mixed each test tube, then loosened each cap slightly. Recorded my observation in Table 2 in the Analysis section.

5. Placed the “ 5°C” test tube in an ice water bath. Placed the “ 37°C” test tube in a 37°C incubator. Left the “ Room Temperature” test tube at room

temperature.

6. Tightened the caps on each tube, shook the test tubes, and compared the color of each solution. Recorded the color of each solution in Table 2 in the Analysis section.

C. Digestion of Proteins and Effect of pH

C. digestion of proteins and effects of pH

1. Obtained a hard-boiled egg and removed it from the shell. Removed the yolk and cut three 0. 5 cm x 0. 5 cm egg white cubes.

2. Labeled one test tube “ 1”, another “ 2”, and a third “ 3”.

3. Added 1 ml of distilled water to each test tube.

4. Added 3 ml of 1% pepsin to each test tube.

5. Added 1 ml of 1% hydrochloric acid to test tube 1.

6. Added 1 ml of distilled water to test tube 2.

7. Added 1 ml of 0. 1% sodium hydroxide to test tube 3.

8. Placed one cube of boiled egg white in each test tube.

9. Using a new pH test strip for each tube, tested the pH of the solution in all three tubes and recorded my results in Table 3 in the Analysis section. Also recorded my initial observations of each tube in Table 3.

10. Loosely capped the test tubes and placed them in a 37°C incubator.

11. Observed the egg white cubes in the test tubes for any changes and used three new pH test strips to determine the pH of the solution in each of the tubes. Recorded the pH and my

observations in Table 3 in the Analysis section. Results:

Table 1:

Test Tube Initial Observations Final Observations

Room Temperature Oil on top, clear water with particles Clear particles on the bottom

37°C Oil on top, clear water with particles A little cloudy with particles

Table 2:

Test tube Initial observations Final observations

5°C

Cloudy Less cloudy with particles on the bottom

Room Temperature

Cloudy Cloudy

37°C

Cloudy More cloudy

Table 3:

Test tube Initial pH Initial Observations Final pH Final Observations

1 1 Egg was solid and clear 1 Egg was breaking down and expanding, clear water

2 4 Egg was solid and

Clear 4 Egg expanded, clear

water

3 4 Egg was solid and

Clear 4 Egg expanded, clear

water

Conclusion

The main purpose of this lab was to understand the processes and stages involved in digestive system, also to study the activities that are involves in

digestive enzymes, As well as the effects of temperature in the activity of lipids, starch, and proteins. And their effects on pH.

Work Cited

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