

Lab 1: Digestion

Starch Digestion by Salivary Amylase pp. 151-153

Goals:

You should be able to

1. Describe the chemical process of starch digestion.
2. Explain how iodine and Benedict's reagent indicate whether starch digestion has occurred.
3. State how the digestion of starch is affected by doing the following:
 - a. presence of amylase
 - b. temperature
 - c. time

Key Terms You Should Know:

- | | |
|--------------|-------------------------|
| ✓ Digestion | amylase |
| ✓ Hydrolysis | IKI (iodine) test |
| ✓ Starch | Benedict's reagent test |
| ✓ Maltose | |

Introduction to Starch Digestion

- Read pp.151-first ½ of p. 152. Answer questions.

Experimental Procedure

- Follow Experimental Procedures on pp. 152-153. Change all "30 min." times to "20 min". Note when to do tests "immediately". Wear goggles near hot/boiling beakers. You **DO NOT** have to answer the questions.
- Fill in Table 11.1.

Conclusions and Review

1. A positive IKI (iodine) test changes the solution to the color blue/black and indicates the presence of starch. This tells us that starch digestion **has/has not** taken place.
2. A positive Benedict's reagent test changes the solution to the color orange/yellow and indicates the presence of sugar. This tells us that starch digestion **has/has not** taken place.
3. In which tubes did starch digestion occur? 3 & 4 These tubes were the control for the experiment.
4. What experimental variable was changed in Tubes 1 & 2? time
How did this variable affect the digestion of starch?
not enough time for digestion to occur
5. What experimental variable was changed in Tubes 5 & 6? temperature
How did this variable affect the digestion of starch?
Denatured or destroyed the enzyme amylase; no digestion should occur
6. What experimental variable was changed in tubes 7 & 8? presence of amylase the enzyme
How did this variable affect the digestion of starch?
No digestion occurred since the enzyme was not present
7. Name three conditions that must be met for starch digestion to occur? Enzyme present, time must elapse, temperature should be at body temperature for salivary amylase to work efficiently.

II. Fetal Pig Dissection: External Anatomy, Oral Cavity, & Pharynx

GOALS:

You should be able to

- 1. State characteristics shared by all mammals.**
- 2. Determine whether a pig is male or female.**
- 3. Identify the following structures and state their function(s):**

Umbilical chord

Nipples/mammary glands

Urogenital openings (on both male and female)

Oral cavity structures:

Teeth

Tongue

Hard palate

Soft palate

Pharynx structures:

Epiglottis

Glottis

Esophagus

trachea

Introduction & External Anatomy

- Bottom of p. 159 – 161: Read and follow all procedures to locate structures. Wear gloves and goggles!

Oral Cavity and Pharynx

- P. 162: Read and follow all procedures. Wear goggles and gloves! Use scissors and probes only.
- P. 163: Read and follow all procedures #1-3.

Review

- P. 172: Answer questions #1-5, 9, 10, 18.