**New Al Rayyan Independent School for Boys**

**Lab report 3**

**Biology department/ 1st semester (2009-2010)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Subject** | **Grade** | **Unit** | **L. R Number** | **Year** |
| **b** | **i** | **o** | **G** | **10** |  | **U** | **0** | **3** | **L** | **R** | **0** | **3** | **2** | **0** | **0** | **9** |

**File name** **/**

**Student Name: Date:27-31/ 12 /2009**

|  |  |  |  |
| --- | --- | --- | --- |
| **Lesson title** | Explaining the specificity of enzyme action | **Grade**  | **10 / 1-9** |
| **Objectives** |
| **By the end of the lesson, most students** | Will be able to show the effect of different enzymes and where they are found. |
|  |
|  |
| **Students who progress further:** | Demonstrate to other students  |

**Aim**: To show the effect of different enzymes and where they are found..

## SEC standard:

##  10A.8.2 Explain how the structure of an enzyme leads to its substrate specificity .

## 10A.1.1 Identify and develop a clearly focused research question

## 10A.1.2 Make predictions directly related to a research question.

## 10A.1.4. Work constructively and adaptively with others as a team on a scientific investigation

**Materials:**

1. Bile juice .
2. Test tubes.
3. Tube racks.
4. Droppers.
5. Vegetable oils .
6. Liver
7. Potato slices
8. Hydrogen peroxide

**Introduction:**

Enzymes are proteins that speed up or slow down a chemical reaction and are not consumed by the reaction. They play an important role in the living process. The most easily understood use of enzymes is in the digestive process. Digestion can include the breakdown of nutritious molecules .Another enzyme catalyzed reaction is the breakdown of potentially harmful molecules like hydrogen peroxide produced in cells.

**Predictions**:

1. What do you think will happen when you add water to oil in the test tube?

…………………………………………………………………………………………………………………………………………………………… (1 m)

1. What do you think will happen when you add bile juice to the test tube containing water and oil?

……………………………………………………………………………………………………………………………………………………………….. (1 m)

1. What do you think will happen when we add hydrogen peroxide to biscuits?

……………………………………………………………………………………………………………………………………………………………….. (1 m)

1. What do you think will happen when we add hydrogen peroxide to liver?

……………………………………………………………………………………………………………………………………………………………….. (1 m)

1. What do you think will happen when we add hydrogen peroxide to potato?

**Method**

Bile

2

Oil

water

3

H2O2

Biscuits

4

H2O2

Liver

5

H2O2

Potato

1

Oil

water

Oil

Water

Oil

water

Oil

Oil

water

H2O2

Biscuits

H2O2

Biscuits

H2O2

Biscuits

water

Oil

water

Results:

Tube1 : ……………………………………………………………………………………………….

Tube2 : ……………………………………………………………………………………………….

Tube3: ……………………………………………………………………………………………….

Tube4 : ……………………………………………………………………………………………….

Tube5 : ……………………………………………………………………………………………….

Analysis

1. What caused the oil and water to mix?

………………………………………………………………………………………………………………………………………………………………….

1. Write one difference between the action of the enzyme in bile and the enzyme in liver.

…………………………………………………………………………………………………………………………………………………………………………………..

1. What is the difference between results test tube 3 and 5? And why are they different?

…………………………………………………………………………………………………………………………………………………………………………………

1. Why is there no bubbling in test tube 5?

…………………………………………………………………………………………………………………………………………………………………………………..

5-Why is there more bubbling in test tube 4?

 ……………………………………………………………………………………………………………………………………………………………………………….

6-What is the gas produced by the breakdown of hydrogen peroxide?

……………………………………………………………………………………………………………………………………………………………………………………

Conclusion

……………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………