**New Al Rayyan Independent School for Boys**

**Lab report 4**

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject** | | | **Grade** | | | **Unit** | | | **L. R Number** | | | | **Year** | | | |
| **b** | **i** | **o** | **G** | **10** |  | **U** | **0** | **3** | **L** | **R** | **0** | **4** | **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 explain how the structure of an enzyme leads to its substrate specificity. | | |
|  | | |
|  | | |
| **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 .

**Introduction:**

Fats are not soluble in water so inside the living organism’s body they must be converted into another soluble substance that body fluids can deal with and transport from one place to another. Read the method bellow and make prediction about the outcome of this investigation according to the effect f bile juice on vegetable oil.

**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)

**Method**

|  |  |  |  |
| --- | --- | --- | --- |
| No | Step | Image | Marks |
| 1 | Take clean test tube. | test tube.jpg |  |
| 2 | Put about 2 cm of water in the test tube | testtube water.jpg | 1 m |
| 3 | Add few drops of vegetable oil to the test tube (using a dropper) | dropper.jpg | 1 m |
| 4 | Shake the test tube, wait a minuet | shake.jpg | 1 m |
| 5 | Record your observations and Make a conclusion in table No2 | thumbnail.jpg |  |
| 6 | Add few drops of bile juice to the test tube | bile.jpg | 1 m |
| 7 | Shake the test tube, wait a minuet | shake.jpg |  |
| 8 | Record your observations and Make a conclusion in table No3 | bile oil.jpg |  |

Table 2

**(After adding water and oil)**

|  |  |  |
| --- | --- | --- |
| **Question** | **Obs. (1m)** | **Conclusion ( 1m)** |
| **What happened to oil and water** | **Mixed □**  **Not mixed □** | **…………………………………………**  **………………………………………..** |
| **A question to help you to write your conclusion.**  **Does water and oil mix together in room conditions?** | | |

Table 3

**(After adding Bile juice to water and oil)**

|  |  |  |
| --- | --- | --- |
| **Question** | **Obs. (1m)** | **Conclusion (1m)** |
| **What happened to oil and water** | **Mixed □**  **Not mixed □** | **…………………………………………**  **………………………………………..** |
| **A question to help you to write your conclusion.**   1. **Does water and oil mix together in the presence of bile juice?** 2. **Why do you think that happened?** | | |

**Final conclusion:**

**Answer the following questions to reach to your final conclusion:**

1. **Does bile change the mixing property of oil and water?**

**……………………………………………………………………………………………………………………………………………………………………………………**

1. **Is that change (If it happened) physical or chemical change?**

**……………………………………………………………………………………………………………………………………………………………………………………**

1. **What is the importance of that change to living organisms?**

**………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………**