**Lab sheet #3**

**-Carbohydrates-II-**

**-Objective:**

1. To identify the products of hydrolysis of sucrose (disaccharide).
2. To detect the presence of starch in a sample.
3. To establish the effect of concentrated HCl on a glycosidic bond in starch.

**-Methods:**

**1-Sucrose Hydrolysis Test:**

1. Set up two tubes add to each one 2ml of a sucrose solution, Label the tube : (Sucrose with HCL (1st) , Sucrose without HCl (2ed) ).
2. To the 1st tube add 1ml of concentrated hydrochloric acid (HCl).
3. Heat both in boiling water bath for 15 minutes.
4. After 15 minutes of heating add 15 drops of concentrated NaOH to each tube.
5. Take 1ml from 1st tube + 1ml benedict’s reagent 🡺 heat in water bath for 5min.
6. Take 1ml from 1st tube + 0.5ml seliwanoff’s reagent 🡺 heat in water bath for 3min.
7. Take 2ml from 2nd tube + 2ml bendict’s reagent 🡺 heat in water bath for 5min.

**2- The Iodine/Potassium Iodide Test:**

1. Label two tubes A and B.
2. **In tube A:** add 2ml of starch and heat for 1min then add 2drops of iodine solution.
3. A positive test is indicated by the formation of a blue-black complex.
4. Place tube A in boiling water bath for 3 min. Record your observation.
5. Cool the tube under tap water. Notice the color.
6. **In tube B:** add 2ml of glucose and 2drops of iodine solution. Record your results

**3- Hydrolysis of Starch:**

1. Two ml of starch in large tube.
2. Add 1ml of con. hydrochloric acid, heated in boiling water bath for 15 mints. Then cold solution.
3. Add 15 drops of NaOH to become basic.
4. Divided in two tube (A, B).
5. In tube (A) add 3 drops of iodine solution and note the result.
6. In tube (B) add 1 ml of benedict reagent, mix and heated for 5 min and record result.

**-Results:**

**1-Sucrose Hydrolysis Test:**

|  |  |  |
| --- | --- | --- |
| **Sucrose without HCl** | **Sucrose with HCl** | |
| Benedict's test | Seliwanoff's test | Benedict's test |
|  |  |  |
| **Conclusion:** …………………………………………………………………………. | | |

**2- The Iodine/Potassium Iodide Test:**

|  |  |
| --- | --- |
| **Observation** | **Tube** |
|  | (Starch + Iodine) without heating |
|  | (Starch + Iodine) after heating |
|  | (Glucose+ Iodine) |
| **Conclusion:** …………………………………………………………………………. | |

**3- Hydrolysis of Starch:**

|  |  |
| --- | --- |
| **Starch with HCL** | |
| Iodine test | Benedict's test |
|  |  |
| **Conclusion:** …………………………………………………………………………. | |