**Lab sheet #1**

**-Qualitative test of amino acids-**

**-Objective:**

1. Investigate the solubility of selected amino acid in various solutions.
2. To detect α-L-amino acids.
3. To differentiate between aromatic amino acids which give positive results and other amino acids.
4. Detection of amino acid containing gauanidium group (test for Arginine).

**-Methods:**

**1- Solubility test:**

1. Add 4ml of different solvents in 3 clean test tubes then place 1 ml of each amino acid.

2. Shake the tubes thoroughly, and then leave the solution for about one minute.

3. Notice what happened to the solution.

4. Record your result.

**2- Ninhydrin test:**

1- Place 1 ml of each of the solutions in a test tube and add 1 ml of ninhydrin solution.

2- Boil the mixture over a water bath for 2 min.

3- Allow to cool and observe the blue-purple color formed.

4- Record your results.

**3- Xanthoproteic test:**

1- Label four tubes (1 - 4), then add 1 ml of each amino acids solutions and phenol solution to those test tubes each alone.

2- Add 1 ml of concentrated HNO3 (CARFULLY).

3-Boil the mixture over a water bath for 1min. Then record your results.

4- Now COOL THOROUGHLY under the tap and CAUTIOSLY add 5 drops of 10M

NaOH to make the solution strongly alkaline (the alkaline is added to be sure about the

nitration).

5- Record your results.

**4- Sakaguchi Test:**

1-Label 2 test tube and put in each one 2 ml of the amino acid solution .

2- Add to each tube 2ml of NaOH solution. Mix well

3- Add to each tube 5 drops of α-naphthol solution. Mix well

4- Add to each tube 5 drops of sodium hypobromite solution, and record your result.

**-Results:**

**1- Solubility test:**

|  |  |  |
| --- | --- | --- |
|  | **Glycine** | **Arginine** |
| HCl (acid) |  |  |
| NaOH (base) |  |  |
| Chloroform (organic solvent) |  |  |
| **Conclusion:** ……………………………………………………………………………………… | | |

**2- Ninhydrin test:**

|  |  |
| --- | --- |
| **Observation** | **Tube** |
|  | Glycine |
|  | Tryptophan |
|  | Proline |
| **Conclusion:** ……………………………………………………………………………………… | |

**3- Xanthoproteic test:**

|  |  |  |
| --- | --- | --- |
| **Observation** | | **Tube** |
| **+NaOH** | **+ HNO3** |
|  |  | Tyrosine |
|  |  | Tryptophan |
|  |  | Phenylalanine |
|  |  | Phenol |
| **Conclusion:** ……………………………………………………………………………………… | | |

**4- Sakaguchi Test:**

|  |  |
| --- | --- |
| **Observation** | **Tube** |
|  | Glycine |
|  | Arginine |
| **Conclusion:** ……………………………………………………………………………………… | |