**Lab Sheet 1**

**Qualitative Tests of Amino Acids**

**Objectives:**

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**Exp. 1- Solubility test:**

**Protocol:**

1. Add 2 ml of different solvents in 4 clean test tubes then place 0.5 ml of glycine.
2. Shake the tubes thoroughly, then leave the solution for about one minute.
3. Notice what happened to the solution.
4. Repeat steps 1-3 for arginine and glutamine.
5. Record your results.

**Results:**

|  |  |  |
| --- | --- | --- |
| **Amino acid** | **Solvent** | **Observation** |
| Glycine | Water |  |
| NaOH |  |
| HCl |  |
| Chloroform |  |
| Arginine | Water |  |
| NaOH |  |
| HCl |  |
| Chloroform |  |
| Glutamine | Water |  |
| NaOH |  |
| HCl |  |
| Chloroform |  |

**Table-1.1:……………………………………….**

**Experiment (2). Ninhydrin test:**

**Protocol:**

1. Label four tubes (1 - 3), then add 1 ml of each amino acid (glycine, tryptophan and proline).
2. Add 1 ml of ninhydrin solution.
3. Boil the mixture over a water bath for 2 min.
4. Allow to cool and observe the blue-purple color formed.
5. Record your results.

**Results:**

|  |  |
| --- | --- |
| **Tube** | **Observation** |
| Glycine |  |
| Tryptophan |  |
| Proline |  |

**Table-1.2:……………………………………….**

**Experiment (3). Xanthoproteic test:**

**Protocol:**

1. Label four tubes (1 - 4), then add 1 ml of each amino acid solutions (tyrosine, tryptophan and phenylalanine) and phenol solution to those test tubes each alone.
2. Add 1 ml of concentrated HNO3.
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.
5. Record your results.

**Results:**

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

**Table-…….……..:……………………………………….**

**Experiment (5). Sakaguchi test:**

**Protocol:**

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.
5. Record your result.

**Results:**

|  |  |
| --- | --- |
| **Tube** | **Observation** |
| Glycine |  |
| Arginine |  |

**Table-…….……..:……………………………………….**

**Discussion:**

1…………………………………………………………………………………………………………………………………………………………………………………………………………………………..…….

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