**Lab sheet #5**

**-Lipids-II-**

**-Objective:**

1. To distinguish between oil [neutral fat] and fatty acid [saturated and unsaturated].
2. To detect cholesterol.
3. To determine the degree of saturation of different types oils.

**-Methods:**

**1-** **Copper acetate test:**

1. Take two test tubes add 3 ml of petroleum ether and an equal volume of a solution of copper acetate.
2. In tube one add 0.5 ml of olive oil.
3. In tube two add 0.5 ml of oleic oil.
4. Shake the tube and leave it for some time.

**2- Liebermann - Burchard Test:**

1. Dissolve a few crystals of cholesterol in 2 ml of chloroform in a dry test tube.
2. Now add 10 drops of acetic anhydride.
3. Add 2 to 3 drops of conc. sulfuric acid.
4. Record your result.

**3-Unsaturation Test:**

1. Equally into 2 flask Add 10 ml of Chloroform then 10 drops of iodine reagent, the chloroform shows pink color due to presence of iodine.
2. To one test flask add the oil sample drop by drop shaking the tube vigorously for about 30 seconds after addition of each until the pink color is discharged and **count the number of drops**. (The pink color is discharged owing to the taking up of iodine by the unsaturated fatty acids of the oil).
3. Repeat the experiment using butter.
4. Compare unsaturation , it should be remembered that more the number of drops required to discharge the pink color, the less is the unsaturation.

**-Results:**

**1-** **Copper acetate test:**

|  |  |
| --- | --- |
| **Tube** | **Observation** |
| Olive oil |  |
| Oleic acid |  |
| **Conclusion:** ……………………………………………………………................ | |

**2- Liebermann - Burchard Test:**

|  |  |
| --- | --- |
| **Tube** | **Observation** |
| Cholesterol |  |
| **Conclusion:** ……………………………………………………………………... | |

**3-** **Unsaturation Test:**

|  |  |
| --- | --- |
| **Tube** | **Number of drops** |
| Olive oil |  |
| Butter |  |
| **Conclusion:** ……………………………………………………………………... | |