**Lipids (I)**

**-Objective:**

1. To test the solubility of oils in different solvent.
2. To form the soaps.
3. To investigate the effect of NaCl on soap solubility.
4. To investigate the effect of different cations on soap solubility.

**-Methods:**

**1-Solubility test:**

1. Place 0.5ml of oil in 6 test tubes clean, dry containing 4ml of different solvents.
2. Shake the tubes thoroughly, then leave the solution for about one minute.
3. Note if it separated into two layers 🡺 the oil are not dissolve; but if one layer homogeneous transparent formed 🡺 oil be dissolved in the solvent.

|  |  |
| --- | --- |
| **Tube** | **Solubility** |
| acetone |  |
| chloroform |  |
| ether |  |
| ethanol |  |
| diluted acid |  |
| dilute alkaline |  |
| **Conclusion:** ……………………………………………………………................ |

**2- Saponification test:**

1. Place 2 ml of oil in a large flask.
2. Add 4 ml of alcoholic potassium hydroxide.
3. Boil the solution for 3 minutes. After this period, make sure it is perfectly saponification process, by taking a drop of the solution and mix with the water if oil separated indicates that the non-completion of the saponification. In this case, continued to boil until all the alcohol evaporates.
4. Take the remaining solid material (soap) and add about 30 ml of water and keep it for the following tests.
5. Shake the solution after it cools and noted to be thick foam.

**Result of Saponification test: (did the soap formed)**

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**3-Separation of soap from the solution by salting out:**

1. Place about 10 ml of soap in the beaker.
2. Then add small amounts of sodium chloride in batches, stirring until saturated solution.

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| **Tube** | **Observation** |
| Soap + NaCl |  |
| **Conclusion:** ……………………………………………………………………... |

**4-Formation insoluble fatty acids salt (insoluble soaps):**

1. Add about 4 ml of distilled water to 2 ml of soap in two test tubes.
2. Add to the first tube a few drops of calcium chloride, to second tube MgCl.

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| --- | --- |
| **Observation** | **Tube** |
|  | Calcium Chloride + Soap |
|  | Magnesium Chloride + Soap  |
| **Conclusion:** …………………………………………………………………... |