**(8): Separation of a mixture of phenols by thin layer chromatography (TLC)**

**The idea of the experiment:**

Separation of a mixture of phenols (colorless compounds) by thin layer chromatography.

Observing the separated spots can be performed using:

1. UV light.
2. An iodine (I2) chamber. Iodine sublimes and will absorb to organic molecules in the vapor phase.

**Materials and tools used:**

Thin layer (a sheet of glass coated with silica gel). Phenols : phenol, catechol,pyrogallol. Unknown mixture, two mobile phases: 1- (hexane 5: 2ethylacetate), 2- (ethyl acetate 2: 5 dichloromethane ), iodine.

**Procedure:**

1. Draw a line (in pencil not pen) across the bottom edge of the plate 1 cm up from the bottom.
2. Spot three spots along the line drawn on the plate.
3. Pour 10 ml of mobile phase in the jar and leave it few minutes to help to saturate the atmosphere with solvent vapor.
4. Put the plate inside the jar.
5. Remove the plate and mark the solvent front with a pencil.
6. Allow the plate to dry for a few minutes.
7. Calculate Rf for each substance.
8. Compare between Rf values of an unknown mixture and the known phenols.
9. Determine the components of an unknown mixture of phenols.
10. Repeat the same steps with another mobile phase and compare between Rf values of two mobile phases.