**(7): Separation of a mixture of dyes by thin layer chromatography (TLC)**

**The idea of the experiment:**

Separation of a mixture of dyes by thin layer chromatography. TLC can be used to support the identity of a compound in a mixture when the Rf of a compound is compared with the Rf of a known compound.

**Materials and tools used:**

Thin layer (a sheet of glass coated with silica gel). Dyes: Bromothymol blue, Bromophenol blue, Phenol red. Unknown dye mixture, Mobile phase: (Ammonia: Ethanol: Butanol) (1: 1: 3)

**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 dye and the known dyes.
9. Determine the components of an unknown dye mixture.