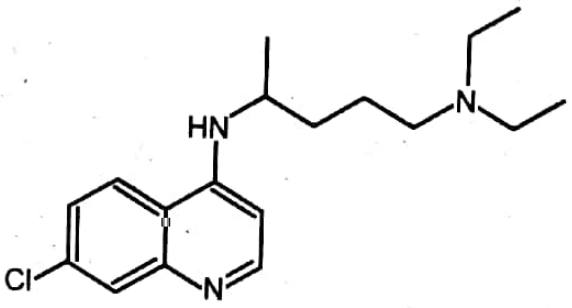
Experiment No. 8

Aim: To carry out the assay of Chloroquine IP.



Requirements:

Apparatus:

Volumetric flask, Measuring cylinder, Analytical balance, Weight box, Beaker, Burette and Conical flask.

Chemicals:

Perchloric acid, Anhydrous glacial acetic acid.

Principle:

It involves non-aqueous potentiometric titration with perchloric acid as titrant.

Preparation of Perchloric acid, 0.1 M:

Mix 8.5 ml of perchloric acid with 500 ml of anhydrous glacial acetic acid and 25 ml of acetic anhydride, cool and add anhydrous glacial acetic acid to produce 1000 ml. The prepared solution is allowed to stand for 1 day and again titrate the water content. The solution so obtained should contain between 0.02% and 0.05% of water.

Standardization of 0.1 M Perchloric acid:

Weigh accurately about 0.35 gm of Potassium hydrogen phthalate and dissolve in 50 ml of anhydrous glacial acetic acid. Add 0.1 ml of crystal violet solution as on indicator and titrate with the perchloric acid solution until the violet colour changes to emerald-green. Perform a blank determination. Each ml of 0.1 M perchloric acid is equivalent to 0.02042 g of $C_8H_5KO_4$.

Procedure:

- Weigh accurately about 0.5 gm of Chloroquine.
- Dissolve it in 50 ml of anhydrous glacial acetic acid and carry out Method A for non-aqueous titration, determining the end-point potentiometrically.
- Perform a blank determination.
- Each ml of 0.1 M Perchloric acid is equivalent to 0.0418 g of $C_{18}H_{26}ClN_3, H_2SO_4$.

Non-Aqueous Titration:

Method A:

Dissolve the prescribed quantity of the substance in a suitable volume of anhydrous glacial acetic acid, prepare a solution as directed in the monograph and determine the

equivalence point potentiometrically using 0.1 M Perchloric acid as titrant. Potentiometric titration may be carried out using a glass electrode and a standard reference electrode, e.g. Calomel reference electrode containing saturated solution of potassium chloride in water. Potentiometric titrations may also be carried out by using a glass electrode and a saturated solution of potassium chloride in water has been replaced by a saturated solution of potassium chloride in methanol. Alternatively, a combined electrode may be used.

Result:

The given sample contains ..... mg of Chloroquine.

VIVA VOCE