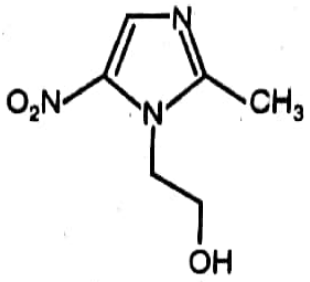
Experiment No. 9

Aim: To carry out the assay of Metronidazole Tablets.



Requirements:

Apparatus:

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

Chemicals:

Metronidazole tablets, 0.1 N Perchloric acid, Anhydrous glacial acetic acid, Brilliant green, Potassium hydrogen phthalate and Crystal violet.

Principle:

Metronidazole tablets are assayed by non-aqueous titration in which the tertiary amine group is titrated with perchloric acid using brilliant green as indicator.

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.

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 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 and powder of 20 tablets of Metronidazole.
- Weigh accurately a quantity of the powder containing about 0.2 g of Metronidazole, transfer to a glass crucible and extract with six quantities, each of 10 ml, of hot acetone.
- Cool it and add 50 ml of acetic anhydride to the combined extracts.
- Titrate with 0.1 M Perchloric acid, using 0.1 ml of 1% w/v solution of brilliant green in anhydrous glacial acetic acid as indicator to a yellowish-green end point. Carry out a blank titration.
- Each ml of 0.1 M Perchloric acid is equivalent to 0.01712 g of $C_6H_9N_3O_3$.

Result:

The given sample contains ..... mg of Metronidazole.