CHAPTER – 10

SUMMARY
10 Summary

➢ HPTLC method was developed and validated for determination of gatifloxacin in tablet formulation. The $R_f$ of gatifloxacin was $0.35 \pm 0.03$ and the linearity was in the range of $200 - 600$ ng/spot.

Nine marketed tablet formulations of gatifloxacin was assayed by proposed method. The percentage content of tablet dosage forms obtained was in the range of $94.58 - 104.53$.

➢ A spectrophotometric method was developed and validated for determination of gatifloxacin. The linearity was found to be $2 - 20 \mu g/mL$.

➢ Nine marketed tablet formulations of gatifloxacin were assayed for their content by spectrophotometric method. The percentage of gatifloxacin obtained was in the range of $95.22 - 102.45$.

➢ The developed method was applied to dissolution test of five gatifloxacin tablet dosage forms. All formulations under study show more than $90\%$ dissolution in $45$ min.

➢ In vitro evaluation of marketed gatifloxacin tablets formulations for the parameters like hardness, tensile strength, disintegration and dissolution testing were carried out. All the formulations complied with their specifications.

➢ The proposed spectrophotometric method is simple, sensitive, specific, accurate and precise for the estimation of gatifloxacin in tablet formulations.
HPTLC method was developed and validated for simultaneous estimation of gatifloxacin and ornidazole in their combined tablet dosage form. R<sub>f</sub> values for gatifloxacin and ornidazole were found to be 0.21 ± 0.02 and 0.76 ± 0.04 respectively. The linearity range for gatifloxacin was found to be 100 - 500 ng/spot and for ornidazole 250 - 1250 ng/spot.

The developed method was successfully applied for simultaneous estimation of Gatifloxacin and Omidazole in two marketed tablet formulations. The results obtained were in good agreement with their label claim.

The proposed method was found to be accurate, simple, sensitive and rapid for routine simultaneous estimation of gatifloxacin and ornidazole in their combined tablet dosage form.

Both the HPTLC and spectrophotometric method for estimation of gatifloxacin in tablet dosage forms were compared using student's unpaired t-test. No significant difference was observed between two methods.

The HPTLC method was developed and validated for the estimation of gatifloxacin in urine. The average recovery was found to be 85.62 %. The developed method was applied to pharmacokinetic analysis of gatifloxacin in urine. After single oral dose of 400 mg gatifloxacin tablet to six healthy human volunteer, the various pharmacokinetic data were calculated.

The proposed HPTLC method is simple, sensitive, specific, accurate and precise for the estimation of gatifloxacin in tablet dosage form and in human urine.