CHAPTER 10

CONCLUSION

Both the anti-inflammatory agents, FT1 and FT2, were synthesized and further methods were developed for estimation of drug. For estimation of FT1 and FT2 sample spectroscopic methods (simple and derivative UV) and HPLC method were developed. For estimation of drugs in plasma bioanalytical method was developed which was further utilized for pharmacokinetic study of both the drugs.

It can be concluded from present research work that both the developed spectroscopic methods for FT1 and FT2 can be suitably applied for the estimation of drug in chemical sample with acceptable accuracy and precision. For FT1 simple UV method was developed at 228nm and 378nm while derivative method was developed at 360.6/398.6nm. For FT2 simple UV method was developed at 229nm and 373nm while derivative method was developed at 360/396nm. Regression coefficient was found to be near to 1 at all the wavelengths for both the drugs which indicates that methods is linear. Simple UV and derivative spectroscopic methods shows %Accuracy in between 98% to 102% for both FT1 and FT2. %CV was less than 2 for all type of precision for both the drugs. Thus both Simple UV and derivative spectroscopic methods are linear within the given range, accurate and precise proving its suitability for routine analysis of both the drugs.

Reverse phase HPLC method was developed for both the drugs using C18 column and Acetonitrile:Water(90:10) as mobile phase. Present work proved that developed HPLC method is sensitive, linear, accurate, precise and robust and suitable for the estimation of FT1 and FT2. Method is sensitive as LOQ is in nanogram range for both the drugs. Method is linear and accurate. Repeatability and intermediate precision are also within the limit so method is precise. Method is robust against small change in flow rate and wavelength.

Bioanalytical method is suitable for estimation of FT1 upto 25ng/mL and FT2 upto 35ng/mL in plasma. For both the drugs the method is selective, sensitive, linear, accurate, precise, rugged and stable for long and short term.
Bioanalytical method is applicable for bioavailability study of the drugs as it was proved to be specific, sensitive, precise, accurate and stable. Pharmacokinetic parameters were obtained for FT1 and FT2 utilising this method. Time required for maximum plasma Concentration, $T_{\text{max}}(\text{h})$, Maximum plasma Concentration, $C_{\text{max}}(\text{ng/mL})$, Area Under Curve at 12h, $\text{AUC}_{0\rightarrow12}(\text{ng h/mL})$, Area Under Curve at infinite time, $\text{AUC}_{0\rightarrow\infty}(\text{ng h/mL})$, Plasma Half Life, $T_{1/2}(\text{h})$ were successfully obtained by applying this bioanalytical method.