

The work in the thesis was divided into three chapters. Chapter I: compatibility study between gatifloxacin and commonly used excipients in tablets and eye drops. The work in this chapter included the preparation and storage of drug excipient mixtures with subsequent evaluation of the possible interactions using visual examination, DSC, and IR. Chapter II: formulation, evaluation, stability and bioequivalence studies of gatifloxacin tablets. The aim of the work in this chapter was to overcome the poor flowability of the drug and to formulate it in compressed tablets. Eight formulations were prepared and tested for weight variation, content uniformity, thickness, hardness, disintegration time, accelerated stability testing, and photostability, and bioavailability. Chapter III: formulation, evaluation, and stability of gatifloxacin eye drops. Nine formulations were prepared and tested. Formulation 2 was chosen for sterility testing, eye irritation, and stability study.