PREFACE

In preformulation studies, active pharmaceutical ingredients are noticed to possess more than one polymorphic form. Each different polymorphic active pharmaceutical ingredient have different physical and chemical properties as solubility, dissolution rate, bioavailability, stability, and finally in change in the efficacy of drugs.

The main objective of the current research work was to formulate crystal tablets with the aim to enhance solubility and *In-vitro* drug release rate compared with the pure drugs. The model drugs selected for the formulations were Amlodipine besylate, Entacapone and Lomefloxacin hydrochloride. Different crystals were formed by using different solvents like ethanol, ethyl acetate, distilled water, di-methyl formide, methanol, acetone etc. The flow patterns of the obtained crystals were evaluated i.e, angle of repose bulk density tapped density, carr’s index, hausner’s ratio. The crystals were compressed directly and evaluated for post compression parameters such as thickness, hardness, friability, weight variation, disintegration time, assay, *In-vitro* drug release, stability and bioavailability studies.

In this prospective a study on “Enhancement of micromeritic, compressional properties and bioavailability of some insoluble drugs by polymorphism” has been taken up and unified in this thesis.