3. SCOPE AND OBJECTIVE

In many therapies, extended-release preparations are considered desirable. These types of formulations generally lead to delayed appearance (lag time) of effective plasma levels and they cannot provide a prompt disposition of the dose immediately after administration however for some drugs (such as NSAID’S, anti hypertensive’s, anti histaminic, anti allergic agents) a prompt disposition of a fraction of the dose should be reached in the shortest time possible to relieve the symptom of the disease and then continuation of the drug effect should be prolonged for some hours to optimize the therapy. To fulfill the specific therapeutic needs of the different disease new drug delivery devices are required for more accurate time programmed administration of active ingredients.

The development of multi particulate drug delivery systems such as mini tablets, pellets is a promising area in pharmaceutical research concerned with a high control over the release rate of drug combined with a high flexibility on the adjustment of both the initial dose and the loading for maintaining the release of the drug to achieve constant therapeutic level.

Extended release products aim at releasing the drug continuously at a predetermined rate in order to increase the patient compliance. Extended release formulations reduce frequency of drug administration and peaks are cut to prevent high concentrations, locally or systemically, which can cause undesirable side effects. At the same time the dosage forms developed have following novelties: improving GIT absorption, minimize local irritation, offers high degree of flexibility, and reduces dose dumping.

Aceclofenac was selected as a model drug for the following reasons: It is being the analgesic, expected to act quickly and for long duration. It is categorized under class II of biopharmaceutical classification and the solubility limitation was addressed by preparing the solid dispersion of the drug. Since it also has a shorter half life and lesser bioavailability, this has been considered as a suitable drug candidate for sustained release dosage form. Hence, it was proposed to make an attempt for the preparation of dual release (fast and delayed release) drug delivery systems using solid dispersion with minitablets / pellets for aceclofenac to achieve a customized in vitro and in vivo profile and therapeutic efficacy to overcome the significant variation.
in plasma drug concentration of the single unit conventional drug delivery systems and to improve patient compliance.