3.0 NEED OF STUDY:

Worldwide, the occurrence and frequency of diabetes is intensifying at an alarming rate. In human population 45 years of age and above, type-II diabetes represents almost about 98% of all diabetes cases. For diabetic-patients, medicine has becomes a significant half of life and missing dosage in treatment could cause chronic condition. Problems of medication with this disease may lead to further sickness and death has become quite common.

A combination therapy of Repaglinide (RG) and Metformin HCL (MH) attains a perfect control of glycemia; although, the immediate release/ conventional form of them must be taken several times one day, compromising the therapeutic benefits and causing inconveniences to the patients. The currently available combination of Metformin hydrochloride and Repaglinide due to their short half-life (MH/ 0.9–2.6 h, RG/1.3 h), patients have to take 2 to 3 times every day; thus, causing inconvenience to patient and fluctuations. Further Patients need to administer both drugs separately. So there is a need to develop such formulation that provide sustain release of both drug in a single formulation.

The present study is focusing towards the formulation of sustain release formulations of Metformin hydrochloride and Repaglinide in separate layer. To achieve that, the objectives of present study are

- To study the effect of different polymer in the formulation with individual API to achieve drug release for 12 hour.
- To prepare Bilayered tablets and their evaluation
- To choose best formulation from obtained data using factorial design and characterization
- To determine kinetics of drug release and stability studies
- To compare final formulation with marketed formulation
SIGNIFICANCE OF STUDY:

☑ Reduced fluctuation in drug level and hence more uniform Pharmacology response

☑ Enhance efficiency in treatment and more uniform blood concentration.

☑ Better Drug Utilization and reduction in total amount of drug

☑ Improved Patient compliance with less frequent dosing

☑ Improved adherence to therapy

Batter technology of formulation may serve reduced cost and less time for manufacture with better productivity