4. WORK PLAN & METHODOLOGY:-

1. Exhaustive Literature survey :-
   Literature will be carried out through journals and e-journal, Pharmacopoeias, patents etc.

2. Procurement of Drug(s) and Excipient(s)

3. Preliminary screening of formulation variables
   Preliminary screening to be done be doing preformulation of drug and excipient, physical properties of tablets, optimization of formulation variables

4. Optimization of formulation variables using factorial design

5. Physical Characteristics of API like
   - bulk density
   - tap density
   - water content

6. Evaluation of prepared tablets
   Physical parameter of dosage form like :-
   - Description
   - Average weight
   - Hardness
   - Thickness
   - Friability
   - Disintegration time

   Chemical parameter of dosage form like
   - Assay
   - Related substance
   - Dissolution

8. Stability study of optimized batch
   Stability study will be carried as per ICH guideline.
Methodology

Methodology for preparation of doxycycline enteric coated tablets

Preliminary screening of formulation variables

In preliminary screening, the formulations will be prepared by direct compression of the physical mixture. The granules will mixed with drug and compressed on a 10-station tablet machine (Cadmach, Ahmedabad, India) using suitable biconvex round shaped die and punches.

Preparation of coating solution :-

The core tablets will be enteric coated with different enteric coating material such as Eudragit L-30 D-55, hydroxy propyl methyl cellulose phthalate, cellulose acetate phthalate and acryl-EZE.

Evaluation of prepared tablets

Granules will evaluated for bulk density, tap density, CI and HR. Compressed tablets will be evaluated for Hardness, thickness, Distintegration, friability, diameter and weight variation. Coated tablets will be evaluated for dissolution and drug content. All these parameters will be evaluated as per standard pharmacopoeial procedure.

Methodology for preparation of Floating Drug Delivery System of Metformin Hydrochloride as Sustained Release Component And Glimepiride as Immediate Release Component

Glimepiride granules will be formulated as immediate release layer and Metformin HCl granules will be formulated as extended release layer for bilayer tablets.

Blends of the IR layer

IR layer of Glimepride will be prepared by using suitable diluents, disintegrant, lubricant, colorant.

Granulation of the SR Layer
Different excipient like HPMC K4M, HPMC K100M, Sodium bicarbonate, Sodium carbonate, Potassium carbonate, Calcium carbonate, Guar gum, Sodium alginate, Sodium carboxy methyl cellulose, Stearic acid, Carbopol 934, Carbopol 940 will be used for preparation of SR layer of Metformin HCL.

*Compression of Bilayer Tablets*

Granules of both layers thus obtained were compressed into bilayered tablets using suitable size caplet punches and corresponding dies on Bilayer tablet compression machine (Cadmach, Ahmedabad).

*Evaluation of Tablets*

Granules will be evaluated for bulk density, tap density, CI and HR. Compressed tablets will be evaluated for Hardness, thickness, Distintegration, friability, diameter, weight variation, dissolution, drug content and floating lag time. All these parameters will be evaluated as per standard pharmacopoeial procedure.