3.1 PLAN OF WORK

I. Extraction, isolation, purification and confirmation of marker compounds:

- To isolate Withaferin A from *Withania somnifera*.
- To isolate β-sitosterol - D-glucoside from *Momordica charantia*.
- To isolate Bacoside A from *Bacopa monnieri*.
- To isolate conessine from *Holarrhena antidysenterica*.
- To isolate some marker compounds from *Phyllanthus niruri*.

II. Development and Validation of HPLC/HPTLC methods using isolated markers:

- To develop and validate a HPLC method for standardization of commercial formulations of *Ashwgandha* using Withaferin A as a marker.
- To develop and validate a HPTLC method for standardization of commercial formulations of *Ashwgandha* and extract of *momordica charantia* using β-sitosterol - D-glucoside as a marker.
- To develop and validate a HPTLC method for standardization of commercial formulations of *Ashwgandha* using Withaferin A and β-sitosterol - D-glucoside as a markers simultaneously.
- To develop and validate a HPTLC method for standardization of commercial formulations of *Bhrami* using Bacoside A as a marker.
- To develop and validate a HPTLC method for standardization of commercial formulations of *Kutja* using Conessine as a marker.
- To develop and validate a HPTLC method for standardization of commercial formulations using some markers from *Phyllanthus niruri*.
III. Marker based standardisation of commercial formulation using developed and validated methods

IV. Forced degradation studies of some marker compounds using developed methods

V. Application of developed and validated method/s for estimation of some marker compound/s in plasma