Chapter 3

Objectives and Plan of Work

3.1. Objectives

- To develop RSV loaded TPGS and DSPE PEG 2000 coated solid lipid nanoparticles, PLGA:TPGS blend nanoparticles, core shell type polymer lipid hybrid nanoparticles and liposomes.

- To study the *in vitro* cytotoxic potential and cellular internalization of prepared nanoformulations in C6 glioma cell lines.

- To perform *in vitro* haemocompatibility studies to confirm the safety upon intravenous administration of the nanoformulations.

- To assess the pharmacokinetics and tissue distribution of optimized nanoformulations after intravenous administration in rats.

3.2. Plan of work

The plan for preparation and evaluations of RSV loaded TPGS and DSPE PEG 2000 coated solid lipid nanoparticles, PLGA:TPGS blend nanoparticles, core-shell type polymer-lipid hybrid nanoparticles and liposomes are shown in the following flow diagram. The list of various nanoparticle characterizations, *in vitro* and *in vivo* evaluations of prepared nanoformulations are as follows.