

Chapter 3

AIMS AND OBJECTIVES

3 Aim and Objectives

3.1 Aim

Design, optimization, and evaluation of gemcitabine and epigallocatechin-3-gallate loaded solid lipid nanoparticles (GEM-EGCG SLNs) for treatment of lung cancer.

3.2 Objectives

The following objectives were set to achieve the aim as mentioned above:

1. QbD design, optimization, development, and characterization of GEM-EGCG SLNs for micromeritic properties and physiochemical characterization.
2. *In vitro* cell line studies to evaluate the anti-cancer efficacy of GEM-EGCG SLNs against A549 lung cancer cell lines.
3. To evaluate the anti-cancer efficacy, drug targeting efficiency, and biocompatibility of GEM-EGCG SLNs against benzopyrene-induced *in vivo* lung cancer mice model.

