

CHAPTER V

CONCLUSIONS

The investigation suggests that dexamethasone loaded superparamagnetic iron oxide PLGA nanoparticles can be synthesized by double emulsion technique (W/O/W). The molecular weight of PLGA plays a crucial role in the abilities of superparamagnetic iron oxide PLGA nanoparticles, that is, high molecular weight of superparamagnetic iron oxide PLGA nanoparticle is more efficient than low molecular weight in terms of the encapsulation efficiency and the extension of sustained drug release profiles *in vitro*. Furthermore, the initial mass of dexamethasone also affects sustained drug release profiles. In particular, the increase of initial mass of dexamethasone can prolong the sustained drug release profiles of dexamethasone *in vitro*.