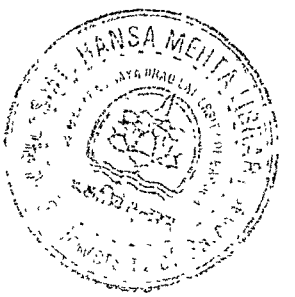


# CHAPTER I

# INTRODUCTION

Over the past decade an entirely new technique for the delivery of drugs and other biologically active agents has been developed. One of the most sought after yet elusive goals in this regard is the development of site specific or organ specific drug delivery system

The concept of drug targeting was first introduced by Paul Elrich (1909) when he reported about a 'magic bullet' which can deliver a drug selectively to the desired site of action without harming the non-target organs or tissues.

This can be achieved by associating the drug with a pharmacologically inactive carrier capable of conveying the drug selectively towards its target cells Drug targeting can be defined as the ability to direct a therapeutic agent specifically to the desired site of action with little or no interaction with non-target tissues.[2]

The main goal of a site specific drug delivery system is not only to increase the selectivity and drug therapeutic index, but also to reduce the toxicity of the drug.[3]

Handjani-vila et al[12] first reported on the formation of vesicles on hydration of mixture of cholesterol and single alkyl chain, non-ionic and non-toxic surfactant, termed as 'Niosomes' which can entrap solutes and are osmotically active and stable. Since then a number of non-ionic surfactants have been used to prepare, vesicles viz. polyglycerol alkyl

ether[12,16,17] glucosyl dialkyl ether[18], crown ethers[19], polyoxyethylene alkyl ether[20,21], ester linked surfactants, Brij[22,23] and series of Spans and Tweens[22,23,24,25]

These non-ionic surfactant vesicles can entrap both hydrophilic and lipophilic drugs, either in the aqueous layer or in the vesicular membrane made of lipid materials. They can be used to prolong the circulation of the entrapped drugs Due to the presence of non-ionic surfactant with the lipid, there is better targeting of drugs to tumour, liver and brain. Thus they may prove very useful in targeting the drug for treating cancers, parasitic, viral and other microbial diseases more effectively.