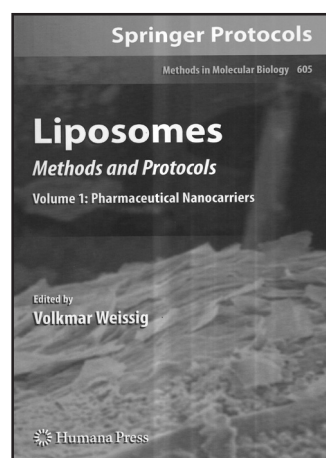


PHARMACEUTICS

WEISSIG, V. (Ed.). *Liposomes: methods and protocols*. New York: Humana Press, 2010. 2v.



This book spans two volumes, the first of which presents the cutting-edge developments of liposomes and their use in nanostructuring of drugs. In particular, site-specific, modified-release liposomes are addressed. The second volume is dedicated to the application of liposomes in studies of biochemical and biophysical membrane phenomena. In addition,

the author presents the latest in analytical technologies applied to this field. Each volume comprises 36 chapters, written by specialists in the area. The structure of the chapters consists of a summary, including key words, the list of abbreviations used, introduction, text body, conclusion and bibliographic references. With reference to the development of liposomes, the chapters of the first volume present the methods of preparation of the nanoparticle, its physico-chemical characteristics and applications in terms of drug administration routes. Furthermore, liposomes are described with regard to their non-specific interactions with biological fluids, sterically stabilized liposomes and with directional ligand incorporated into nanostructures (site specific). The book provides in-depth descriptions of tumor and gene therapies, focusing on cationic liposomes. The first three chapters present the current trends in liposome research along with the methods of preparation, including the dehydration-rehydration method. Chapter 17, entitled “*A Dock and Lock*” approach to preparation of targeted liposomes’ on targeting drugs to specific sites, outlines a novel strategy for development of targeted molecular therapy. In chapter 12, the book reveals the promising potential of liposomes in the development of vaccines, reporting their significant advantages over conventional

vaccines. The chapters of the second volume cover the application of liposomes as biological membrane models. The first major milestone in this application was reached in 1965 following the publication by Alec Bangham et al. of a study on ion diffusion through artificial lipid membranes. The cited study characterized the phospholipid vesicle system and three years later, the term liposome was coined to denote these vesicles. Given this important application, the chapters of the second volume furnish a broad overview of the analytical technologies used in the investigation of drug transport and delivery. The first chapter presents the method for estimating the transfer time of lipophilic drugs in the liposome lipid bi-layer. The use of liposomes in the study of drug metabolism and cellular osmotic sensors are presented in Chapters 2 and 3, respectively. The book also features chapters, besides those mentioned, that present different technologies for generating images of liposomes including: atomic force microscopy (Chapter 23), scanning electron microscopy (Chapter 21), and confocal microscopy (Chapter 31). The book presents the most seminal studies on the application of liposomes in the pharmaceutical area published over the past two decades. Thus, the content provides the reader with a comprehensive overview of the topic and constitutes essential reading for those working or intending to work in the development of drug nanocarriers.

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