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Book Review

Submicron Emulsions in Drug Targeting and Delivery, Simon Benita (Ed.), Harwood Academic Publishers (Gordon and Breach), 1998, ISBN 90-5702-349-0, 338 pp.

Emulsions have a long history of intravenous use since early experiments to infuse milk into animals; despite this it must be admitted that most pharmaceutical manufacturers are rarely enthusiastic about the possibility of using an emulsion as a solution for their formulation problems. The only exception to this are the manufacturers of parenteral feeding emulsions, who have little choice, and the Japanese, who have a number of viable commercial formulations. This attitude is unfortunate because emulsions have a wide range of applications, and are one of the few colloidal formulations that can be easily prepared with existing technology.

This book is a good introduction to the field and will allow new workers to become familiar with the current state of the art. Like most technical volumes it is authored on a chapter basis, and (unlike some other volumes!) the style and standard are reasonably consistent throughout. The title is slightly misleading in that the emphasis is on intravenous emulsions, and apart from the chapter on topical emulsions, no other drug delivery routes (e.g. oral delivery) are explored. This does however cover the vast majority of the applications. Quite a lot of the material can be found elsewhere but it is highly convenient to have it all in one volume, and the subject areas have been largely brought up to date by the contributors. It should be noted that the authors, like the reviewer, do not consider microemulsions in the same category as conventional emulsions, and these are not treated in this volume.

After a short editorial introduction, there is a chapter on the use of intravenous emulsions in vivo, which has a particularly interesting emphasis on structured triglycerides. There follows a fairly extensive chapter on the measurement of emulsion particle size, which briefly covers most of the available technologies, although not as completely as would be required for a full understanding of their principles. There is however a particularly useful emphasis on the problems that arise in the study of polydisperse systems and emulsions in particular. The next chapter on the biofate of fat emulsions discusses the biological processing of triglycerides and approaches to manipulating their distribution.

Chapter 5 is a comprehensive introduction to the formulation and properties of drug-containing emulsions and describes all the commercial formulations and those under development. This is followed by a short chapter on the use of submicron emulsions topically. The next three chapters discuss supercooled and solid lipid nanoparticles, followed by a final chapter on fluorocarbon oxygen transport emulsions. This is particularly comprehensive and well written, although this must be one of the most heavily reviewed areas in this field and similar reviews have appeared elsewhere.

If you are involved in drug formulation, and particularly in parenterals, then you should read this book. It will provide you with an excellent overview of what is being achieved with emulsions and how you can use the technology to solve difficult formulation problems.

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