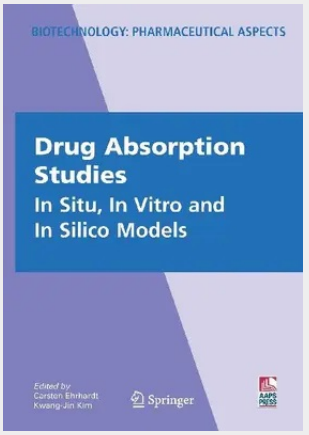
Ehrhardt / Kim

Drug Absorption Studies

In Situ, In Vitro and In Silico Models



In the last 15 years, a great number of cell- or tissue-based in vitro models have been introduced into the biopharmaceutics arena. These models mimic the different biological barriers that a drug has to overcome to finally reach its target organ/cell/receptor. These models have been found very useful in not only characterising the permeability behaviour of drugs molecules in epithelial and endothelial tissues, but also studying drug delivery systems for improved delivery and enhanced absorption. Compared to the complex situation, models offer a fast, convenient approach with cost advantages most of times. Most importantly, they can be standardised and automatised to be applicable to the high-throughput screening.

Starting at the molecular level of studies, continuing with cell monolayer models (both primary and cell lines) and in situ techniques as a final testing format, the book provides a practical approach to contemporary techniques for drug absorption studies. In addition, chapters on high-throughput assays, - correlation, bioinformatics and regulatory issues are covered, giving a comprehensive overview of available models and techniques. Moreover, an appendix comprised with a number of practical protocols is available online, updated as needed, should prove very helpful to apply the techniques directly to the benchside.

Ideal material for a huge range of professionals in drug therapeutics and research, this is a well thought-out, highly practical text covering contemporary 'in vitro' techniques for drug absorption studies. Starting at the molecular level of investigation, it continues with cell monolayer models (both primary and cell lines) and culminates with in situ techniques as a final testing format. In addition, chapters on high-throughput assays, in vitro-in vivo correlation, bioinformatics and regulatory issues are covered, giving a comprehensive overview of available models and techniques. Moreover, an appendix consisting of a number of practical protocols is available online, updated as needed, and should prove very helpful to apply the techniques directly to the benchside.

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