Applications of Microdialysis in Pharmaceutical Science

Tung-Hu Tsai (Editor)


DESCRIPTION

Discover new and emerging applications for microdialysis in drug evaluation

Microdialysis is a highly valuable sampling tool that can be used in vivo to measure free, unbound analyte concentrations located in interstitial and extracellular spaces. This book explores the full range of clinical applications for microdialysis, focusing on its use in different organ and tissue systems for pharmacokinetic and pharmacodynamic studies. Readers gain a full understanding of the underlying science of microdialysis, current techniques and practices, as well as its many applications in pharmaceutical research.

Applications of Microdialysis in Pharmaceutical Science starts with an introduction to basic principles and then covers analytical considerations, pharmacodynamic and pharmacokinetic studies, clinical aspects, and special applications. Topics include:

• Role of microdialysis in drug development, including crucial sampling considerations and applications for nervous system diseases

• Continuous measurement of glucose concentrations in diabetics

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Applications for clinical evaluation and basic research on organ systems, including monitoring exogenous and endogenous compounds in the lungs

• Pharmacokinetic and pharmacodynamic evaluation of anticancer drugs

• Comparison of microdialysis with imaging approaches to evaluate in vivo drug distribution

• Special applications of microdialysis in studies of cell culture assays, drug-drug interactions, and environmental monitoring

Throughout the book, readers will find simple models that clarify complex concepts and easy-to-follow examples that guide them through key applications in pharmaceutical research. In short, this book enables pharmaceutical researchers to take full advantage of microdialysis techniques for the preclinical and clinical evaluation of drugs and much more.

ABOUT THE AUTHOR

**Tung-Hu Tsai, PhD** is a Professor at the Institute of Traditional Medicine, National Yang-Ming University, Taiwan. He has published more than 200 papers in the field of pharmaceutical analysis, herbal medicine, and pharmacokinetics. Dr. Tsai’s current research focuses on the mechanisms of pharmacokinetic pathways, emphasizing hepatobiliary excretion and barrier transportation.

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