Physiologically Based Pharmacokinetic (PBPK) Modeling and Simulations: Principles, Methods, and Applications in the Pharmaceutical Industry, 2nd Edition

Sheila Annie Peters

DESCRIPTION

Physiologically Based Pharmacokinetic (PBPK) Modeling and Simulations

The first book dedicated to the emerging field of physiologically based pharmacokinetic modeling (PBPK)

Now in its second edition, Physiologically Based Pharmacokinetic (PBPK) Modelling and Simulations: Principles, Methods, and Applications in the Pharma Industry remains the premier reference book throughout the rapidly growing PBPK user community. Using clear and concise language, author Sheila Annie Peters connects theory with practice as she explores the vast potential of PBPK modeling for improving drug discovery and development.

This fully updated new edition covers key developments in the field of PBPK modelling and simulations that have emerged in recent years. A brand-new section provides case studies in different application areas of PBPK modelling, including drug-drug interaction, genetic polymorphism, renal impairment, and pediatric extrapolation. Additional chapters address topics such as model-informed drug development (MIDD) and expose readers to a wide range of current applications in the field. Throughout the book, substantially revised chapters simplify complex topics and offer a balanced view of both the opportunities and challenges of PBPK modelling. Providing timely and comprehensive coverage of one of the most exciting new areas of pharmaceutical science, this book:

- Describes the principles behind physiological modeling of pharmacokinetic processes, inter-individual variability, and drug interactions for small molecule drugs and biologics
• Features a wealth of new figures and case studies of the applications of PBPK modelling along the value chain in drug discovery and development

• Reflects the latest regulatory guidelines on the reporting of PBPK modelling analysis

• Includes access to a new companion website containing code, datasets, explanations of case examples in the text, and discussion of key developments in the field

• Contains a brief overview of the field, end-of-chapter keywords for easy reference, and an extensive bibliography

Physiologically Based Pharmacokinetic (PBPK) Modeling and Simulations: Principles, Methods, and Applications in the Pharmaceutical Industry, Second Edition is an indispensable single-volume resource for beginning and intermediate practitioners across the pharmaceutical sciences in both industry and academia.

prising THE AUTHOR

Sheila Annie Peters is head of Translational Quantitative Pharmacology at Merck KGaA in Darmstadt, Germany. Previously she was an Associate Principal Scientist for Discovery DMPK and Bioanalytical Chemistry at AstraZeneca and Principal Scientist at Cyprotex Discovery. She has lectured at the Regional Engineering College (Trichy, India) and University of Madras and Pondicherry University.

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