

1. Record Nr.	UNINA9910877640203321
Titolo	Physiologically based pharmacokinetic modeling : science and applications // edited by Micaela B. Reddy ... [et al.]
Pubbl/distr/stampa	Hoboken, N.J., : Wiley-Interscience, c2005
ISBN	1-280-27583-9 9786610275830 0-470-24616-2 0-471-47876-8 0-471-47877-6
Descrizione fisica	1 online resource (442 p.)
Altri autori (Persone)	ReddyMicaela B
Disciplina	615/.7
Soggetti	Pharmacokinetics Xenobiotics Toxicology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELING; CONTENTS; PREFACE; ACKNOWLEDGMENTS; CONTRIBUTORS; CHAPTER 1 INTRODUCTION: A HISTORICAL PERSPECTIVE OF THE DEVELOPMENT AND APPLICATIONS OF PBPK MODELS; 1.1 Introduction; 1.2 A Historical Perspective; 1.2.1 Responses to Inhaled Compounds; 1.2.2 Pharmaceutical Applications; 1.2.3 Occupational and Environmental Applications; 1.2.4 Digital Computation and PBPK Modeling; 1.3 Expansion of PBPK Model Applications; 1.3.1 PBPK Models for Tissue Dosimetry from Secondary Data; 1.3.2 Biological Mechanisms Underlying Pharmacokinetic Behaviors 1.3.3 Chemicals as Probes of Biological Processes 1.3.4 Risk Assessment Applications; 1.3.5 PBPK Models as Repository of Mechanistic Data on Distribution and Response; 1.4 Summary; Notation; References; PART I PBPK MODELING FOR VOLATILE ORGANIC COMPOUNDS; CHAPTER 2 HALOGENATED ALKANES; 2.1 Introduction; 2.2 PBPK Model Development for Volatile Organics; 2.2.1 Model Formulation; 2.2.2 Model Equations; 2.2.3 Model Parameterization;

2.2.4 Model Calculations; 2.3 Experimental Methods Demonstrated for Groups of Chemicals; 2.4 PBPK Models for Halogenated Alkanes; 2.4.1 Anesthetic Gases
2.4.2 Chlorofluorocarbons (CFCs), Refrigerants, and Halons
2.4.3 Halogenated Alkanes; 2.5 Summary; Notation; References; CHAPTER 3 HALOGENATED ALKENES; 3.1 Introduction; 3.2 The Chloroethylenes: Background; 3.3 Review of PBPK Models; 3.3.1 Vinyl Chloride (VC); 3.3.2 Vinyl Fluoride (VF); 3.3.3 cis-1,2-Dichloroethylene (cDCE) and trans-1,2-Dichloroethylene (tDCE); 3.3.4 Vinylidene Chloride (VDC); 3.3.5 Trichloroethylene (TCE); 3.3.6 Tetrachloroethylene (PERC); 3.3.7 Allyl Chloride (AC); 3.3.8 b-Chloroprene (CD); 3.3.9 Hexachlorobutadiene, HCB; 3.4 Summary; Notation; References
CHAPTER 4 ALKENE AND AROMATIC COMPOUNDS
4.1 Introduction; 4.2 PK and Pharmacodynamic Properties Important in PBPK Model Development for Aromatic and Alkene Compounds; 4.2.1 Metabolism and Mode of Action; 4.2.2 Model Structures; 4.2.3 PK Differences; 4.2.4 Extrahepatic Metabolism and Transport of Metabolites; 4.2.5 GSH Conjugation; 4.2.6 Endogenous Production; 4.2.7 Reactivity with DNA and Protein; 4.2.8 Inhibition of Second Oxidative Steps; 4.2.9 Variability and PK Differences; 4.2.10 Subcompartments in PBPK Models; 4.2.11 "Privileged Access" of Epoxide Hydratase to Epoxide Substrates
4.3 Review of Aromatic and Alkene PBPK Models
4.3.1 Benzene-A Known Human Carcinogen with an Uncertain Mode of Action; 4.3.2 Styrene-Early PBPK Models; 4.3.3 1,3-Butadiene; 4.3.4 Isoprene; 4.3.5 Ethylene, Propylene, and Their Oxides; 4.3.6 Naphthalene and Other PAHs; 4.3.7 Halobenzenes; 4.3.8 Miscellaneous Related Compounds; 4.4 Summary; Notation; References; CHAPTER 5 REACTIVE VAPORS IN THE NASAL CAVITY; 5.1 Introduction; 5.1.1 Nasal Effects and Risk Assessment; 5.1.2 General Models for Nasal Uptake; 5.2 No Air-Phase Models; 5.2.1 The "Perfused Nose" Model; 5.2.2 Vinyl Acetate
5.3 Creating the Air-Phase Compartments

Sommario/riassunto

A definitive, single source of information on PBPK modeling
Physiologically-based pharmacokinetic (PBPK) modeling is becoming increasingly important in human health risk assessments and in supporting pharmacodynamic modeling for toxic responses. Organized by classes of compounds and modeling purposes so users can quickly access information, this is the first comprehensive reference of its kind. This book presents an overview of the underlying principles of PBPK model development. Then it provides a compendium of PBPK modeling information, including historical development, specific models
