

Physiologically based pharmacokinetic and pharmacodynamic modeling in health risk assessment and characterization of hazardous substances

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Abstract

Recent advances in physiologically based pharmacokinetic and pharmacodynamic (PBPK/PD) modeling have introduced novel approaches for evaluating toxicological problems. Because PBPK models are amenable to extrapolation of tissue dosimetry, they are increasingly being applied to chemical risk assessment. A comprehensive listing of PBPK/PD models for environmental chemicals developed to date is referenced. Salient applications of PBPK/PD modeling to health risk assessments and characterization of hazardous substances are illustrated with examples.

Key words: PBPK/PD modeling; Health risk assessment; Extrapolation