

Development of Successful Physiologically-Based Pharmacokinetic (PBPK) Models

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DOI: <https://doi.org/10.35516/jjps.v16i2.1491>

ABSTRACT

Physiologically-based pharmacokinetic (PBPK) modeling is a strong mathematical tool that integrates body physiology, drug physicochemical properties and pharmacokinetics to predict detailed drug profiles in different parts of the body. PBPK modeling can also be used to predict the effects of drug-drug interactions and diseases on drug pharmacokinetics. The use of special modules enables the extrapolation to different routes and also different species. PBPK steps for successful modeling will be discussed with examples using GastroPlus program. Such in-silico work can minimize the number and risks of in vivo clinical studies done on healthy subjects or on patients.