Supplemental Data

Prediction of human distribution volumes of compounds in various elimination phases using physiologically based pharmacokinetic modeling and experimental pharmacokinetics in animals

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Drug Metabolism and Disposition

Supplemental Table 1. Accuracy of modeled pharmacokinetic profiles in humans after virtual intravenous administrations predicted using distribution volumes obtained using approach 1 (allometric scaling) and PBPK modeling

Compound	Prediction method of distribution volumes	
	Conventional approach 1	PBPK modeling
Diazepam	0.065	0.039
Reboxetine	0.238	0.091
Tamsulosin	0.118	0.180
Doxazosin	0.296	0.080
Bosentan	0.455	0.082
Oxprenolol	0.028	0.056
Midazolam	0.122	0.030
Telmisartan	0.031	0.047
Diltiazem	0.270	0.121
Raloxifene	0.307	0.132
Average	0.193	0.086

Prediction accuracy is shown as the residual sum of squares of observed and modeled plasma concentrations corrected with the number of observed time points (ResSS). ResSS was calculated using the following equation:

$$\sum_i \frac{1}{n}[\log(\mathrm{Obs}_i) - \log(\mathrm{Pred}_i)]^2$$

Obs_i and Pred_i represent observed and predicted concentrations at the i^{th} time point, respectively.

Supplemental Fig. 1. Preclinical concentration-time profile. Data represent mean values from 5 rats and 4 monkeys or dogs. These plasma concentrations were treated in the main analyses.