

# Report from JavaPK for Desktop

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## User Defined Bayesian Model of Enfuvirtide

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### Input variable :

Cs ( mg/L )  
Dose ( mg )  
Bw ( kg )  
Gender ( 0 for male and 1 for female )  
Tau ( hr )  
Ts ( hr )

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### Population PK parameter :

$CL_F (CL_F) = (0.99 + Bw/70 * 0.833) * (1 - Gender * 0.203) \pm 0.27 * CL_F$   
 $Vd_F (Vd_F) = 4.43 \pm 0.57 * Vd_F$   
 $ka (ka) = 0.113 \pm 0.2 * ka$

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### Cs equation : (which is a steady-state eq.)

$Cs = ka * Dose / (Vd_F * (ka - CL_F / Vd_F)) * ((1 / (1 - \exp(-CL_F / Vd_F * Tau))) * \exp(-CL_F / Vd_F * Ts) - (1 / (1 - \exp(-ka * Tau))) * \exp(-ka * Ts))$

### Dosage adjustment equation :

$Ct = ka * Dose / (Vd_F * (ka - CL_F / Vd_F)) * ((1 / (1 - \exp(-CL_F / Vd_F * Tau))) * \exp(-CL_F / Vd_F * Tau) - (1 / (1 - \exp(-ka * Tau))) * \exp(-ka * Tau))$   
 $Dose = Ct / (ka / (Vd_F * (ka - CL_F / Vd_F)) * ((1 / (1 - \exp(-CL_F / Vd_F * Tau))) * \exp(-CL_F / Vd_F * Tau) - (1 / (1 - \exp(-ka * Tau))) * \exp(-ka * Tau)))$

### **Comment :**

Reference:

Mould, D. R., X. Zhang, et al. (2005). Population pharmacokinetics and exposure-response relationship of enfuvirtide in treatment-experienced human immunodeficiency virus type 1-infected patients. *Clin Pharmacol Ther* 77(6): 515-28.

$CL_F = Cl/F$

$Vd_F = Vd/F$