

The Equations

$C_p = \frac{\text{Dose}}{V} \cdot e^{-kel \cdot t}$	$\frac{dM}{dt} = -\frac{D \cdot A \cdot (Ch - Cl)}{X}$
$C_p = \frac{k_0}{kel \cdot V} \cdot [1 - e^{-kel \cdot T}] \cdot e^{-kel \cdot (t-T)}$	$CL_L = \frac{Q_L \cdot (Ca - Cv)}{Ca} = Q_L \cdot E$
$C_p = \frac{F \cdot \text{Dose} \cdot ka}{V \cdot (ka - kel)} \cdot [e^{-kel \cdot t} - e^{-ka \cdot t}]$	$CL = \frac{Q \cdot fu \cdot CL_{int}}{Q + fu \cdot CL_{int}}$
$t_{max} = \frac{1}{ka - kel} \cdot \ln \frac{ka}{kel}$	$\alpha + \beta = kel + k_{12} + k_{21} \text{ and}$ $\alpha \cdot \beta = kel \cdot k_{21}$
$\frac{A}{V} = C_p + kel \cdot \int_0^t C_p \cdot dt$	$\alpha, \beta = \frac{(\alpha + \beta) \pm \sqrt{(\alpha + \beta)^2 - 4 \cdot \alpha \cdot \beta}}{2}$
$AUMC^{last} = \frac{C_p^{last} \cdot t^{last}}{k} + \frac{C_p^{last}}{k^2}$	$k_{21} = \frac{A \cdot \beta + B \cdot \alpha}{A + B} \quad \left \quad kel = \frac{\alpha \cdot \beta}{k_{21}}\right.$
$pKa - pH = \log \frac{[HA]}{[A^-]}$	$V_1 = \frac{\text{Dose}}{A + B} \quad \left \quad V_{area} = \frac{\text{Dose}}{\beta \cdot AUC}\right.$
$\frac{F^A}{F^B} = \frac{\text{Dose}^B \cdot kel^A \cdot V^A \cdot AUC^A}{\text{Dose}^A \cdot kel^B \cdot V^B \cdot AUC^B}$	$\text{Area} = \left(\frac{C_1 + C_2}{2} \right) \times (t_2 - t_1)$
$kel = knr + a \cdot CL_{CR}$	$V_{extrap} = \frac{\text{Dose}}{B} \quad \left \quad AUC^{last} = \frac{C_p^{last}}{k}\right.$
$D = \frac{\text{Total in blood}}{\text{Total in GI tract}}$	$CL = \beta \cdot V_{area}$
$CL_{CR} = \frac{(140 - \text{age}) \cdot \text{Wt(kg)}}{72 \cdot S_{CR}} \cdot 0.85$	$V_{ss} = V_1 \cdot \frac{k_{12} + k_{21}}{k_{21}}$
$\text{Slope} = \frac{\ln C_{p1} - \ln C_{p2}}{t_1 - t_2} \quad \left \quad \tau = \frac{\text{Dose} \cdot F}{C_p \cdot V \cdot kel}\right.$	$MRT = \frac{AUMC}{AUC} \quad \left \quad k = \frac{1}{MRT}\right.$
$C_{p_{max}} = \frac{\text{Dose}}{V \cdot (1 - R)}$	$CL = \frac{\text{Dose}}{AUC} \quad \left \quad ka = \frac{1}{MAT}\right.$
$C_{p_{min}} = C_{p_{max}} \cdot R$	$MAT = MRT(po) - MRT(iv)$
$C_{p_n}^t = \frac{\text{Dose}}{V} \cdot \left[\frac{1 - e^{-n \cdot kel \cdot \tau}}{1 - e^{-kel \cdot \tau}} \right] \cdot e^{-kel \cdot t}$	$R = \frac{V_m \cdot C_p}{K_m + C_p} \quad \left \quad CL = kel \cdot V_1\right.$
$C_{p_{min}} = \frac{F \cdot \text{Dose} \cdot ka}{V \cdot (ka - kel)} \cdot \left[\frac{e^{-kel \cdot \tau}}{1 - e^{-kel \cdot \tau}} \right]$	$C_p = A \cdot e^{-\alpha \cdot t} + B \cdot e^{-\beta \cdot t}$
$C_{p_{min}} = \frac{F \cdot \text{Dose}}{V} \cdot \left[\frac{e^{-kel \cdot \tau}}{1 - e^{-kel \cdot \tau}} \right]$	$R = e^{-kel \cdot \tau}$
	$V_{ss} = CL \cdot MRT$
	$\frac{A}{a} \cdot t - \frac{A}{a^2} \cdot (1 - e^{-a \cdot t}) \Leftrightarrow \frac{A}{s^2 \cdot (s + a)}$