

## Project

One-compartment open model with intravenous bolus administration given by equation

$$\frac{dC(t)}{dt} = -\frac{C(t)}{\tau} + I(t), C(0_-) = 0,$$

where

$$I(t) = \frac{D}{V} \sum_{i=0}^{\infty} \delta(t - it_0), t \geq 0,$$

$D > 0$  dose,  $V > 0$  volume,  $\tau > 0$  time-constant and  $t_0$  inter-dose interval,  $\delta$  delta function, is considered. The therapeutic window is defined as an interval for concentration  $C \in (A, B)$ . Find inter-dose interval  $t_0$  to keep the concentration permanently within the therapeutic window for  $t \rightarrow \infty$ .